APPENDIX T

RESPONSES TO COMMENTS

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PART 1—RESPONSES TO COMMENTS

Introduction

This appendix summarizes comments made on the Draft EIS/EIR and responses to those comments. Because comments were made on the Draft HCP/SYP and IA at the same time and usually in the same letters, responses to comments on those documents and the entire interrelated process are included here as well.

The comment period on the Draft EIS/EIR attended from October 2 to November 16, 1998. During the public comment period, four public hearing were held at Culver City (October 27), Sacramento (October 29), Oakland (November 5), and Eureka (November 10). Approximately, 416 people presented comments at these hearings (Culver City – 60, Sacramento – 84, Oakland – 122, and Eureka – 150). Additionally, approximately 16,000 written comments were received by the lead agencies. About 4,000 of these comments were a *single postcard* and about 7,000 were a *single statement*. Most of these comments were fairly broad and, commonly, expressed personal opinions rather than substantive comments based on specific information or a reading of the Draft EIS/EIR or HCP/SYP. Many thousands were restatements of general position statements made by various organizations. These comments are, as a group, referred to as General Comments. The responses are referred to as General Responses.

Other letters included comments of a more specific nature; many were based on the commentor's own scientific background or familiarity with environmental and/or timber-related research and literature. As a group, these comments are referred to as Detailed Comments, for which Detailed Responses were prepared.

All comments received, whether through public meeting testimony or in writing, were reviewed and assigned to either the General or Detailed Comment category. These comments and their responses are discussed in the sections that follow. Because of the volume of comments received, none are reproduced in this document.

General Comments and Responses

General comments were read and given codes based on their contents. For example, comments about old growth were coded OG-1 or OG-2. Comments about herbicide use were coded H-1 through H-4. The names of individuals who provided oral testimony, along with the codes assigned to their comments, appear in Part 2 of this appendix. The names are listed under the city (Sacramento, Culver City, Eureka, or Oakland) and time of the meeting session (morning, afternoon, or evening) at which they spoke. The names and comment codes of those who wrote letters are listed on the CD-ROM, which is Appendix U.

After all the general comment testimony and letters were coded, the comment codes were matched to particular response codes, as shown in Table T-1. The table indicates, for example, that General Response C-7 addresses concerns for old growth, particularly those who believe that all old growth should be preserved. Commentors who expressed that opinion in their testimony or letters would find the code OG-1 next to their names in Part 2

or Part 3, and would see from Table T-1 that they should look to General Response C-7 for the agencies' response.

Table T-2 serves as a guide to the General Responses, and lists the topic covered by each of the 61 General Responses. Table T-2 is followed by the General Responses themselves.

Table T-1. Comment Topics, Comment Codes, and Response Codes

For a Comment Coded This Way in Part 2	See This Response	Addressing This Topic
A-1	C-39	Other suggested alternatives should be considered
A-2	C-39	Other suggested alternatives should be considered.
AQ-1	C-20	Asphalt batch plants affect air and water quality
E-1	C-53	The plan will affect the fishing industry
E-2	C-54	The plan will affect tourism
E-4	C-55	The plan will affect logging jobs
E-5	C-56	PALCO is good for the local economy
E-6	C-57	If PALCO harvest decreases, there would be an increase in harvest elsewhere
E-7	C-58	Preserving old growth makes economic sense
F-1	C-29	An 18.4 degree C stream temperature threshold is inadequate.
F-2	C-24	There are no coho in areas of past PALCO logging
F-3	C-30	Sufficient refugia is needed for coho
F-4	C-31	Logging does not cause the take of fish
F-5	C-29	Fish diseases are more virulent above 16 degrees C
GC-1	C-10	The comment period should be extended
GC-2	C-10	Time is needed for review by independent scientists
GC-7	C-13	There should be no deal until MAXXAM's lawsuits are settled
GC-8	C-9	The HCP/SYP/EIS are deficient (no details given)
GC-9	C-13	There should be a debt-for-nature swap
GC-10	C-13	The proposed action is too costly to the public
GC-11	C-11	The requirements of AS 1986 must be incorporated
GC-12	C-35	Timber companies should integrate with the recycling industry.
GC-13	C-33	There are no cumulative effects discussed in the HCP
GC-14	C-36	There should be an HCP hearing in the Bay Area
GC-15	C-37	Verbal comments are important; eloquent, impassioned speech needs to be heard
GC-17	C-38	The HCP/SYP is a license to take public trust resources
GC-18	C-34	PALCO could use the Headwaters money to buy more land and do more damage
GM-1	C-19	Gravel mining should be excluded from the HCP
H-1 to H-4	C-42	Herbicide use should be restricted.
HCP-1	C-1	HCPs do not promote species recovery.
HCP-2	C-2	No Surprises policy is wrong
HCP-3	C-3	HCP should be based on biological principles
HCP-4	C-4	HCP is a loophole in the FESA
HCP-5	C-5	Include proactive plan for northern spotted owls and other birds
HCP-6	C-16	It's time for closure; finish the process now
HCP-7	C-6	Include other impacts not related to forestry
HCP-8	C-40	Tractor logging is excessive
I-1	C-14	Outrage at the corporate bullying tactics and the exploitation of the redwoods to pay corporate debts
L-1	C-12	Permits should be denied because of PALCO's past violations

Table T-1. Comment Topics, Comment Codes, and Response Codes

For a Comment Coded This Way in Part 2	See This Response	Addressing This Topic
L-2	C-15	Permits should be denied because of David Chain's death
L-3	C-16	Civil disobedience is aimed at bankrupting PALCO
MON-1	C-59	Strict monitoring and oversight is needed
MON-2	C-59	Monitoring should be done by non-governmental organizations
MON-3	C-60	Include fish abundance and turbidity monitoring
MON-4	C-60	**changed stream temperature should be used to change management practices more often than every five years**
MON-5	C-60	Sediment source analysis should be done more often than every five years
MON-6	C-60	**Trends should be measured relative to current conditions**
MON-7	C-61	**PALCO's adaptive management will be minimal**
OG-1	C-7	All old growth should be preserved
OG-2	C-8	Old growth habitat is not replaceable
RIP-1	C-28	Having 30-foot riparian buffers is inadequate
RIP-2	C-28	Having 10-foot no-cut buffers on Class II streams is inadequate
RIP-3	C-28	Having no buffer on Class III streams is inadequate
RIP-4	C-28	Wider riparian buffers, such as FEMAT buffers, should be used
RIP-5	C-28	Interim stream buffers are inadequate
RIP-6	C-28	Buffers are too complicated to enforce
RIP-7	C-28	Buffers have been set for political, not biological, reasons
RIP-8	C-28	Thinning/harvesting in buffers increases air and water temperature, affecting species
RIP-9	C-28	Clearcutting next to buffers leads to blowdowns
RIP-10	C-28	Buffers should be 200 feet wide in areas with degraded habitat conditions
RIP-11	C-28	PALCO needs incentives to avoid default buffers
SG-1	C-17	HCP does not adequately address landslides
SG-2	C-17	What are acceptable risk criteria for ground movement?
SG-3	C-17	Landslide analysis should be done by an independent geologist, not someone employed by PALCO
SG-6	C-18	Concerned about the Mattole and Bear River basins
SG-7	C-21	Road standards are inadequate; should use Weaver and Hagans (1994) procedures
SG-8	C-40	Forest soils need to be protected from excessive tractor logging
TIM-1	C-32	The timber harvest rate is not sustainable
TIM-2	C-41	Hemp should be used to replace redwood trees
TIM-3	C-41	Clearcutting is bad for the environment
TIM-4	C-43	Logging can be good for some species
TIM-5	C-41	Sustainable forestry should be required, with no clearcutting or herbicide use
TIM-6	C-38	Logging can affect air quality and climate
TIM-7	C-41	Recommended specific harvest prescriptions should be used
TIM-8	C-44	Harvesting affects biomass and nutrients
TIM-9	C-41	Clearcutting causes diseases from ground ticks
TIM-10	C-41	Big trees save forests from serious fires
VEG-1	C-45	Douglas-fir is given inadequate protection
VEG-2	C-46	Harvesting will modify tree species composition
W-1	C-47	Edge effect management is needed
W-A-1	C-52	Thinning/harvesting in riparian buffers will affect frogs and

Table T-1. Comment Topics, Comment Codes, and Response Codes

For a Comment Coded This Way in Part 2	See This Response	Addressing This Topic
		salamanders due to changes in air temperature
WAT-1	C-22	There is too much being harvested in watersheds over too short a period of time
WAT-2	C-23	Logging and roadbuilding on steep slopes adversely affect aquatic habitat
WAT-3	C-24	Watershed assessment data in the SYP are outdated and misleading
WAT-4	C-25	The proposed road densities are too high
WAT-5	C-26	Current logging will require later expenses to restore watersheds
WAT-6	C-27	Watershed assessment process should be site specific, not dependent upon set buffers
W-MM-1	C-48	Logging will reduce marbled murrelet habitat
W-MM-2	C-49	The language about MMCAs is discretionary; there are no assurances of protection
W-MM-3	C-50	The hole in the Headwaters should be purchased
W-MM-4	C-51	Is rock quarrying in MMCAs acceptable?
W-NSO-1	C-5	Protection for northern spotted owl is inadequate

Table T-2. General Response Topics

See This Response	For a Comment Coded This Way in Part 2	Addressing This Topic
1	HCP-1	HCPs do not promote species recovery
2	HCP-2	No Surprises policy is wrong
3	HCP-3	HCP should be based on biological principles
4	HCP-4	HCP is a loophole in the FESA
5	HCP-5, W-NSO-1	Include proactive plan for northern spotted owls and other birds
6	HCP-7	Include other impacts not related to forestry
7	OG-1	All old growth should be preserved
8	OG-2	Old growth habitat is not replaceable
9	GC-8	The HCP/SYP/EIS are deficient (no details given)
10	GC-1, GC-2	The comment period should be extended
11	GC-11	The requirements of AS 1986 must be incorporated
12	L-1	Permits should be denied because of PALCO's past violations
13	GC-7, GC-9, GC-10	There should be no deal until MAXXAM's lawsuits are settled
14	I-1	Outrage at the corporate bullying tactics and the exploitation of the redwoods to pay corporate debts
15	L-2	Permits should be denied because of David Chain's death
16	HCP-6, L-3	It's time for closure; finish the process now
17	SG-1, SG-2, SG-3	Landslides are a concern
18	SG-6	Concerned about the Mattole and Bear River basins
19	GM-1	Gravel mining should be excluded from the HCP
20	AQ-1	Asphalt batch plants affect air and water quality
21	SG-7	Road standards are inadequate; should use Weaver and Hagans (1994) procedures
22	WAT-1	There is too much being harvested in watersheds over too short a period of time

Table T-2. General Response Topics

See This Response	For a Comment Coded This Way in Part 2	Addressing This Topic
23	WAT-2	Logging and roadbuilding on steep slopes adversely affect aquatic habitat
24	F-2, WAT-3	Watershed analysis for coho needs to be improved
25	WAT-4	The proposed road densities are too high
26	WAT-5	Current logging will require later expenses to restore watersheds
27	WAT-6	Watershed assessment process should be site specific, not dependent upon set buffers
28	RIP-1 through RIP-11	Riparian buffers need to be improved
29	F-1, F-4	Correct stream temperatures are needed to protect fish
30	F-3	Sufficient refugia is needed for coho
31	F-4	Logging does not cause the take of fish
32	TIM-1	The timber harvest rate is not sustainable
33	GC-13	There are no cumulative effects discussed in the HCP
34	GC-18	PALCO could use the Headwaters money to buy more land and do more damage
35	GC-12	Timber companies should integrate with the recycling industry.
36	GC-14	There should be an HCP hearing in the Bay Area
37	GC-15	Verbal comments are important; eloquent, impassioned speech needs to be heard
38	GC-17, TIM-6	The HCP/SYP is a license to take public trust resources
39	A-1, A-2	Other suggested alternatives should be considered
40	SG-8, HCP-8	Forest soils need to be protected from excessive tractor logging
41	TIM-2 through TIM-10	Forests offer benefits other than wood and animal habitat
42	H-1 to H-4	Herbicide use should be restricted.
43	TIM-4	Logging can be good for some species
44	TIM-8	Harvesting affects biomass and nutrients
45	VEG-1	Douglas-fir is given inadequate protection
46	VEG-2	Harvesting will modify tree species composition
47	W-1	Edge effect management is needed
48	W-MM-1	Logging will reduce marbled murrelet habitat
49	W-MM-2	The language about MMCAs is discretionary; there are no assurances of protection
50	W-MM-3	The hole in the Headwaters should be purchased
51	W-MM-4	Is rock quarrying in MMCAs acceptable?
52	W-A-1	Thinning/harvesting in riparian buffers will affect frogs and salamanders due to changes in air temperature
53	E-1	The plan will affect the fishing industry
54	E-2	The plan will affect tourism
55	E-4	The plan will affect logging jobs
56	E-5	PALCO is good for the local economy
57	E-6	If PALCO harvest decreases, there would be an increase in harvest elsewhere
58	E-7	Preserving old growth makes economic sense
59	MON-1	Strict monitoring and oversight is needed
60	MON-3	Frequent monitoring is needed for trend identification and correction
61	MON-7	PALCO's adaptive management will be minimal

GENERAL RESPONSES TO COMMENTS

APPENDIX T
RESPONSES TO GENERAL COMMENTS

C-1

COMMENT: This comment reflects general statements opposing Habitat Conservation Plans (HCPs) in general and the proposed PALCO HCP in particular. It includes statements such as the following: "HCPs do not promote the recovery of species." "PALCO's plan provides inadequate recovery for endangered and threatened species." "The issuance of an incidental take permit (ITP) to PALCO would harm the additional species requested in the permit." "If the ITP is issued, these species would become extinct, especially the north coast coho salmon." "Do not approve the plan for 50 years." "Change the HCP to be more protective." "The HCP is politically based and not biologically based."

C-1

RESPONSE: Section 10 of FESA was amended by Congress in 1982 to allow USFWS and NMFS ("Services") to issue permits authorizing the take of listed species in the course of otherwise lawful activities provided those activities are conducted in accordance with an approved HCP. Issuance of ITPs is appropriate under Section 10 so long as the specific criteria of that section are met. Of particular importance, each HCP must minimize and mitigate the impacts of the proposed take to the maximum extent practicable and not appreciably reduce the likelihood of the survival and recovery of the species covered by the permit in the wild. The Section 10 program is designed to provide species protection and habitat conservation within the context of non-federal development and land and water use activities while allowing economic development that is compatible with such species protection and habitat conservation. The Section 10 program provides applicants and the Services with an opportunity to plan rationally for multiple species protection on a landscape basis. The Services are committed to a Section 10 program that is able to meet the growing challenges and opportunities of integrating endangered species protection with compatible economic activities and needs.

The PALCO HCP is a 50 year conservation plan designed to provide for the long term survival and allow for the recovery of each of the covered species. While Section 10 does not require an HCP to provide for the recovery of a species, the HCP is generally consistent with many of the objectives of the Final Recovery Plan for the marbled murrelet and is consistent with the recovery objectives stated in the Draft Recovery Plan for the Northern spotted owl and final recovery plans for the peregrine falcon and bald eagle. There is not yet in place a recovery plan for the coho salmon and other federally listed species; however the HCP prescriptions are designed to achieve over time properly functioning aquatic habitat conditions which are necessary for the long term survival of these species. The HCP is grounded in the best available science and has been substantially strengthened by the inclusion of additional minimization and mitigation measures added, in part, as a result of the substantive scientific public comment received on the draft plan. Additional acreage has been added to the Marbled Murrelet Conservation Areas (MMCAs), protection of Owl Creek is required for the life of the permit and protection of Grizzly Creek for a minimum of five years and for the life of the permit if necessary to avoid jeopardy to the marbled murrelet, the conservation plan for coho and other aquatic species has been substantially improved and the covered species listed has been reduced by dropping nineteen species for which the

Services have concluded that either additional information or a better understanding of their biological and habitat requirements is needed to provide coverage.

In summary, while the genesis of the HCP was the September 1996 Agreement between MAXXAM, PALCO and the federal and state governments, the HCP itself, which has been subjected to rigorous scientific review and analysis both internally within the Services and by outside scientific experts, is biologically grounded on credible science and, subject to final Section 7 and Section 10 reviews, the Services believe will provide substantial conservation benefits to murrelet, coho salmon and each of the sixteen other species proposed for coverage under the 50 year ITPs.

C-2

COMMENT: The no surprises policy is inappropriate or wrong and should not be implemented. Under the no surprises policy, PALCO would not have to provide additional protection for the 36 covered species for the next 50 years regardless of any new biological information that might come to light. The federal agencies would not be able to require any new, additional, or different mitigation measures from PALCO without PALCO's consent. Incidental take is killing.

C-2

RESPONSE: The no surprises policy is consistent with Congressional intent to provide regulatory assurances to non federal property owners who, through the Section 10 ITP process, commit to undertake substantial conservation measures for listed and other covered species. Under the proposed HCP, PALCO would be committing to substantial conservation and management measures to protect the covered species in return for regulatory assurances that the company's timber harvest operations and other covered activities carried out in accordance with the HCP will not be subject to additional mitigation beyond that provided under the HCP.

However, it is not correct to state that the proposed HCP and no surprises assurances prevent the Services from requiring changes in mitigation from PALCO over the life of the 50 year permit in response to changed circumstances or new information. Adaptive management is central to the proposed HCP. Virtually every conservation plan for individual species included under the HCP's Operating Conservation Program requires ongoing effectiveness monitoring and allows for modifications to the mitigation and conservation measures in response to such monitoring. For example periodic watershed analysis is required under the plan's Aquatic Conservation Program and site specific prescriptions can be modified, within the broad sideboards included in the plan, as warranted over time in response to changing habitat conditions or species needs based on new information and better science. Because such changes would be part of the HCP's operating conservation program, they are not subject to no surprises assurances. Section 10.16 of the Implementation Agreement for the HCP also clarifies that no surprises assurances do not negate the continuing legal obligation of both PALCO and the Services to insure that covered activities carried out over the life of the ITPs are consistent with applicable laws and regulations, including Sections 10 and Section 7 of the ESA.

C-3

COMMENT: The only viable HCP is one based on conservation biological principles, protection of ancient and residual forests, protection and restoration of streams, and long-term certified sustainable forestry.

C-3

RESPONSE: The proposed HCP and analysis has incorporated the principles of conservation biology and the comments do not specify any specific concepts that were not evaluated in the EIS/EIR. In addition to the Owl Creek grove, the HCP insures protection for the life of the permit for an additional ten groves of dominated by old growth redwood as MMCAs. Over 270 acres have been added to the Owl Creek MMCA and 350 acres have been added to the Grizzley Creek tract and protected for a minimum of five years and, if necessary to avoid jeopardy to the murrelet, for the life of the ITPs. Class I, II and III streams are protected by substantial riparian management zones (RMZs) that provide for medium to high maintenance of riparian zone ecological functions. These maintenance prescriptions include large woody debris, stream temperature and detritus input. Certified sustainable forestry as proposed by such groups as the Trees Foundation or implemented by various certification groups is not a requirement for an HCP or ITP but was considered as a component of Alternative 3. The agencies disagree that HCPs must be based on one type of management such as certified sustainable forestry. A wide variety of take minimization and mitigation measures that meet the requirements for issuance of an ITP can be applied on a given landscape.

Also based on public comments and FESA and CESA issuance criteria, substantial additional mitigation was added to the plan to reduce the risk of potential adverse effects. These additional mitigation measures further reduce the impacts, as described in the Draft EIS/EIR, to the Covered Species from the Covered Activities. Detailed descriptions of the HCP's conservation and management measures are included in Appendix P.

C-4

COMMENT: HCPs are just a loophole in the Endangered Species Act and should not be allowed.

C-4

RESPONSE: The Services strongly disagree. HCPs provide an effective regulatory and management tool to provide for the protection and conservation of listed and other sensitive species on private lands. As noted in response to comment 1, the HCP program provides an opportunity to plan rationally for species protection and habitat conservation on private lands. HCPs can be particularly effective in providing proactive, rational and comprehensive species and habitat protection measures over a broad landscape such as the 211,000 acre PALCO ownership. The Services agree that the cornerstone of an effective HCP program is credible biological and scientific information. The proposed PALCO HCP has been subjected to rigorous internal and outside scientific review and has been substantially strengthened as a result of such review. The plan provides a comprehensive management program to protect the covered species on PALCO's ownership over the 50 year permit term.

C-5

COMMENT: The measures regarding northern spotted owls are completely inadequate. Scientific information on existing owl populations is either missing or not analyzed. What data PALCO does have on owls is ignored in favor of a "habitat-based" approach that basically will force owls to find homes in an increasingly hostile landscape where most of the ancient and mature forest will be quickly liquidated. At least one-third of the owls on their property would be killed before PALCO would be required to take action or reverse the decline. This approach neither minimizes nor mitigates the impacts of logging and is definitely not a strategy oriented toward recovery of the spotted owl. PALCO's strategy falls far short of even other regional spotted owl HCPs. The HCP contains no proactive plans to deal with other species such as the northern spotted owl, peregrine falcon, and bald eagle.

C-5

RESPONSE: The Fish and Wildlife Service and CDFG believe the Northern Spotted Owl (NSO) conservation strategy, as modified and strengthened in response to public comment, is consistent with the recovery objectives for the northern spotted owl and will provide for viable populations of NSO on the PALCO ownership over the life of the ITPs. The agencies agree that simple reliance on large acreages of nesting habitat of potential low quality is not adequate to protect the NSO. The minimum thresholds for 10 percent late seral habitat by watershed assessment area, disturbance index restrictions, channel migration zone and riparian management zone silvicultural prescriptions, steep slope harvest restrictions and the HCP's mass wasting avoidance strategy, along with protection of the vast majority of high quality owl growth habitat in MMCAs will retain substantial high quality nesting habitat on the PALCO ownership. Combined with activity nest site conservation measures, USFWS and CDFG believe the NSO conservation plan will be effective in maintaining a viable NSO population on PALCO lands during the permit. Adaptive management and effectiveness monitoring are also key components of the NSO and related conservation plans for other species under the HCP and will allow for modification to the conservation strategy in response to changing species and habitat conditions. Conservation plans for the other covered species, including the peregrine falcon and bald eagle are also included in the HCP.

C-6

COMMENT: There are a variety of other impacts to species that are not related to logging. For example, barred owls, sea lions, ocean fishing, climatic or oceanographic condition changes, and urbanization are not considered when evaluating forestry HCPs.

C-6

RESPONSE: The issues described in these comments are considered in the Draft EIS/EIR in evaluating existing conditions and cumulative effects. While taking into account the various environmental and social factors that contribute to the baseline conditions affecting the covered species, the objective of the HCP is to provide conservation and management measures on PALCO's ownership necessary to protect the species over the permit term. To the extent that the various factors outlined in the comment influence the status of the species on the PALCO ownership, the adaptive management provisions of the plan will address those factors. The wildlife agencies recognize that oceanographic conditions, urbanization, climatic conditions, are very important to the long term survival and recovery of the covered species. However, it must also be recognized that such factors cannot be controlled by activities on PALCO's ownership. The discussion of unforeseen and changed

circumstances in Section K, Attachment No. 4 also discusses the influence of many of these factors. Barred owls are considered with respect to such issues as habitat fragmentation in Section 3.10 of the Final EIS/EIR.

C-7

COMMENT: There were a wide variety of comments indicating that the government should preserve in perpetuity all old growth and six groves, particularly Shaw Gift and All Species groves. The commentors requested that the government not allow the harvest of old-growth redwood and Douglas-fir trees. All 60,000 acres of the Headwaters Forest should be preserved. Some commentors indicated that old-growth trees have special spiritual value to them and that they are family. The proposed HCP would imperil fragile old-growth habitat which is not a renewable resource. This resource should be preserved for future generations. This habitat is critical for endangered species such as the marbled murrelet and coho salmon.

C-7

RESPONSE: The wildlife agencies recognize the value placed on the protection of old growth redwood and Douglas-fir trees and support conservation of this unique resource . Indeed, the federal and state government's decision to appropriate funds to permanently protect in public ownership of the Headwaters Reserve reflects the importance placed by many members of the public in conserving this resource. However, the wildlife agencies' specific mandate under the federal and state ESAs is to protect and conserve threatened and endangered species. We believe the HCP, by providing for the long-term protection of all of the largest groves of old growth redwood forest on PALCO's ownership, will also insure protection of the marbled murrelet and other old growth associated species. To guarantee that all old growth trees, including the six groves identified during scoping and the surrounding 60,000 acre forest, are protected in perpetuity they would have to be placed in public ownership or PALCO would have to agree to some form of permanent conservation easement. The purchase of the 60,000 acres Headwaters area is considered as part of Alternative 3 in the EIS/EIR. The currently authorized funding for the purchase of approximately 9,300 acres is about $460 million (which includes state funds for the purchase and permanent protection of the Owl Creek MMCA and funds toward the purchase of the Grizzly Creek complex). Purchase of the remaining groves and the remaining area of the 60,000 acres would obviously require many hundreds of millions of additional dollars. However, as noted in the description of that alternative in Chapter 2, no funds have been identified to fund such a purchase and the federal and state agencies have no means of acquiring such a large area and cost without direct funding by the federal and state governments. Further, based on the impacts identified to the covered species from PALCO's timber operations and other covered activities, the wildlife agencies do not believe that requiring PALO to provide a perpetual conservation easement over any of the MMCAs or remaining 60,000 acres is biologically justified. Nor has PALCO expressed an interest in such a proposal. The Proposed Action/Proposed Project analyzed in the EIS/EIR appropriately relates to a legislatively authorized land purchase and PALCO's actual application for an ITP.

The EIS/EIR identifies that the harvest of old growth redwood and Douglas-fir trees would be considered a significant effect by some members of the public. However, old growth trees are provided no special protection under California FPRs or under the California and federal Endangered Species Acts. Forest habitat was evaluated with respect to both the

requirements of an ITP and the SYP. In this respect, the importance of old growth forest for a variety of species was extensively considered throughout the EIS/EIR particularly in Section 3.10 Wildlife Resources and in Section 3.9 Vegetation and Timber Resources with respect to natural vegetation communities. Though old-growth forests are important habitat types for many species, with the exception of the marbled murrelet, they do not represent obligate habitat for the species considered for the ITP. The EIS/EIR presents information on why harvest is being allowed of the lower quality residual old growth redwood habitat. It also discusses why the protection of the MMCAs is considered to be sufficient to protect the marbled murrelet. In addition, see response to C-9.

C-8

COMMENT: The proposed mitigation for endangered and threatened species is inadequate because there is no scientifically valid way to mitigate for the destruction of ancient forest habitat. Old-growth habitat is not replaceable. This reduction in old-growth forest habitat could well "appreciably reduce the likelihood of the survival and recovery" of species which is a violation of the Endangered Species Act.

C-8

RESPONSE: As noted in the EIS/EIR, the development of old-growth habitat would take perhaps as much as 300 hundred years. That is the reason that the best quality old-growth habitat (i.e., seven of the eight MMCA) are protected for the 50-year term of the proposed ITP. The Grizzly Creek tract as enlarged in the final HCP would also be protected for the 50 year permit term if at the end of a five year period, the USFWS and CDFG determine that protection of the tract is necessary to avoid jeopardy to the marbled murrlelet. The proposed SYP/HCP and EIS/EIR identify that 12,000 acres of residual old-growth habitat (redwood and Douglas-fir) will be harvested. However, as described in detail in the EIS/EIR that residual habitat is very fragmented and of lower habitat value and would take longer to develop enclosed and interior forest habitat conditions favored by the marbled murrelet than the proposed MMCAs, particular over the next 50 years, a period thought to be critical for the long term survival and recovery of the murrelet. Additionally, internal and in some cases external buffers were been placed in and around the MMCAs to protect the areas from disturbance impacts from nearby timber harvest. Consequently, while the set aside of additional residual habitat would eventually provide more habitat over the long term, the amount of habitat preserved is considered to provide adequate habitat for marbled murrelets over the next 50 years during which time additional habitat will become available in the surrounding public lands such as Humboldt Redwoods State Park.

C-9

COMMENT: Many commentors stated that the HCP/SYP and Draft EIS/EIR are scientifically, legally, and biologically deficient.

C-9

RESPONSE: The agencies strongly disagree. Extensive scientific review has been undertaken in conjunction with the development of the HCP and SYP, both internally within the Services and CDFG, externally by PALCO in establishing the Science Review Panel for murrelets and through the substantial scientific comments received on the draft HCP/SYP. In response to such input, the final HCP has been substantially strengthened to provide greater species and habitat protection. Both the draft and final EIS/EIR are adequate in

their analyses of the impacts of the proposed HCP/SYP. The documents consider all of the issues raised during scoping and evaluate and disclose anticipated effects of the proposed HCP and SYP and reasonable alternatives to the proposed action as required by NEPA and CEQA. In general these comments were made with no substantiation of their claim of inadequacy. However, see the substantive comments and the responses to them for a thorough discussion of specific issues.

C-10

COMMENT: More time should be provided for review of the HCP by independent scientists. The comment period should be extended.

C-10

RESPONSE: Considering the March 1, 1999 deadline established by Congress under PL 105-83 for the appropriation of federal funds to acquire the Headwaters Reserve and related issuance of an ITP to, and state approval of an SYP for , PALCO and that the SYP/HCP was available for public review for over three months and the DEIS/EIR was available for public review for 48 days, the agencies were unable to extend the comment period.

C-11

COMMENT: The Draft SYP/HCP and EIS/EIR should be rewritten to incorporate AB 1986.

C-11

RESPONSE: AB 1986 was fully considered within the Draft EIS/EIR and has been more fully integrated into the Final EIS/EIR. AB 1986 was passed after the Draft SYP/HCP was released to the public. The Final HCP (Appendix P) and Final SYP (Appendix Q) do incorporate AB 1986.

C-12

COMMENT: The ITP permit should not be granted because PALCO has been convicted of numerous violations of California Forest Practice Rules and has portrayed a callous lack of responsibility. The permit should be denied per 50 CFR 13.2(b)(1).

C-12

RESPONSE: See response to BRC-1 & 2 and JBBDS-1 in the responses to detailed comments.

C-13

COMMENT: There should be no deal with MAXXAM and Mr. Hurwitz until the lawsuits against them are settled. Based on their behavior they are not trustworthy. There should be a debt for nature swap for assumed MAXXAM liabilities with respect to savings and loans issues. The public is paying too high a price (i.e., dollar value) for the Headwaters Forest.

C-13

RESPONSE: The pending Office of Thrift Supervision and Federal Deposit Insurance Corporation lawsuits are independent of the proposed action and not within the jurisdiction of the decision making agencies. For that reason waiting until such lawsuits are resolved is not a feasible alternative to the proposed action. The debt for nature swap is not feasible

because it is also outside of the jurisdiction of the decision making agencies and to the agencies' knowledge, there has been no determination of the legality of such a proposal . If at some time in the future, a debt for nature swap is determined to be feasible, it could be pursued independently of the proposed action. For additional discussion, see section 2.4.1 in the Draft EIS/EIR. With respect to the price paid for the Headwaters Forest, the BLM has performed an appraisal and provided it to the Secretary of I the Interior as required by PL-105-83. The California legislature has also allocated state funds for purchase of the Headwaters Forest and Elk Head Springs Forest as part of AB 1986.

C-14

COMMENT: The public should not stand for corporate bullying. MAXXAM should not be cutting trees because they made a bad business decision and have to pay creditors. Private property rights end where public resources begin.

C-14

RESPONSE: The agencies disagree with the contention that they have been bullied by MAXXAM or PALCO. The negotiations between the governments and these corporations have been carried out in a professional and appropriate manner. MAXXAM, Inc. is the legal owner of PALCO and the management of these companies has the right to manage them as they consider appropriate so long as such management conforms to applicable federal, state and local laws. PALCO timber harvesting operations are governed by the California Forest Practices Act and regulations and various other environmental and non-environmental federal and state laws. As long as the company operates within these laws, including the requirements of federal and state ITP, if they are issued, their business decisions are not within the jurisdictional purview of the federal and state agencies responsible for enforcement of environmental laws and the California Forest Practices Rules. In addition, see response to C-12.

C-15

COMMENT: The death of timber harvest protestor David Chain on PALCO lands during timber harvest operations was manslaughter. Consequently, PALCO should not be allowed an ITP.

C-15

RESPONSE: An investigation of David Chain's death was completed by local law enforcement authorities. His unfortunate death was determined to be accidental. The enforcement responsibilities and jurisdiction of the wildlife agencies and CDF are narrowly tailored to according to the agencies' missions; they have no jurisdiction in this area.

C-16

COMMENT: A series of illegal civil disobedience actions are being directed against PALCO and Humboldt County in an attempt to intimidate and bankrupt the company. Other commentors indicated it was time for closure on the issues surrounding PALCO's management and the Headwaters Forest.

C-16

RESPONSE: The controversy surrounding the Headwaters Forest and PALCO's timber management practices are recognized in the purpose and need for action (Section 1.9),

section of the DEIS/EIR which includes reducing public controversy regarding PALCO's management of its timberlands, particularly the Headwaters Forest and Elk Head Springs Forest. The evaluation of on-going civil disobedience activities is beyond the scope of this EIS/EIR. The EIS/EIR does discuss the likelihood of the various alternatives in reducing the controversy (see Section 3.13.3 Other Social Considerations).

C-17

COMMENT: The EIS/EIR fails to address the significant potential for landslides in areas like that of the Stafford torrent of 1997. Making decisions based on PALCO geologist's information should not be accepted. The geologist performing these field investigations should be independent rather than working for PALCO.

C-17

RESPONSE: The agencies disagree that the EIS/EIR does not address these issues. Section 3.6 of the EIS/EIR evaluates the potential for mass failure including the potential for effects on people and property. Section 3.4 and 3.8 considers similar issues with respect to water quality and aquatic habitat, respectively. The final HCP incorporates requirements for evaluation and avoidance of steeper slopes (extreme, very high, and high mass wasting hazard plus headwall swales and unstable areas), wider riparian buffers, and the road management program, all of which will reduce the potential for mass wasting compared to existing conditions. All materials prepared by PALCO will be reviewed by an interagency team of federal and state scientists who can request the participation of an independent geologist.

C-18

COMMENT: Major areas of the Bear River and North Mattole River in PALCO ownership are extremely steep and subject to landsliding. Because these areas are Douglas-fir and not redwood they have not received as much public attention. Landslides can be expected to occur up to 30 years after timber harvest, and sediment will course through the system for decades. Mattole chinook and coho and those of other stream systems are a high risk of extinction and actions under the HCP will heighten that risk and preclude restoration of the Bear River.

C-18

RESPONSE: While it may be true that some members of the public did not focus their attention on the Douglas-fir dominated areas such as the Mattole River basin, the EIS/EIR considered the entire PALCO ownership and specifically considered the conditions of the Mattole River basin including the presence of old growth Douglas-fir forests. The analysis in Section 3.6 regarding mass wasting potential and the analysis in Section 3.8 regarding effects on fisheries both considered the effects in the Mattole Basin, the Bear Creek basin, and all the other watersheds in which PALCO owns property and that would be covered by an ITP and SYP. Additional mass wasting avoidance requirements and stream buffering requirements have been incorporated into the final HCP to reduce the risk of landslides and sediment deposit into watercourses. These issues are also considered in the agencies' biological opinions which provide a separate analysis of potential effects with respect to species survival. In addition, see response to C-11.

C-19

COMMENT: Gravel mining operations should not be linked with the HCP.

C-19

RESPONSE: The agencies consider the effects of gravel mining to be relevant to the HCP. These activities can affect water quality and listed species such as coho salmon and western snowy plover. However, near-stream gravel mining is covered under the incidental take authority in the Army Corps of Engineers biological opinion until December 31, 1999 and additional information is needed assess its impacts on the species proposed for coverage under the HCP. Consequently, the gravel mining operations will not be covered under the proposed ITP. If ITPs are issued, the wildlife agencies will work with PALCO over the next year to include gravel mining as a covered activity through an amendment to the ITP.

C-20

COMMENT: Has the impact of PALCO's asphalt batch plant on air and water quality been evaluated?

C-20

RESPONSE: The batch plant is not proposed for coverage under the ITP. Consequently, its effects are considered part of the environmental baseline or existing conditions.

C-21

COMMENT: There are no or inadequate road standards being applied in the SYP/HCP. The Salmonid Restoration Committee recommends that the procedures and prescriptions presented in Weaver and Hagans (1994) be applied.

C-21

RESPONSE: The road standards proposed as part of the HCP and SYP and those analyzed in the EIS/EIR are already based on Weaver and Hagans (1994). In addition, the agencies have included additional road related requirements to the final HCP, including avoidance of road building on steeper or unstable areas, wet weather road use restrictions, additional agency review, the road improvement program, and more detailed site-specific information from watershed analysis. The agencies consider that the effects from existing roads will diminish over time and the effects from new roads will be substantially reduced from current conditions.

C-22

COMMENT: There is too much area being harvested per watershed in too short a time frame. No watershed rest periods are being proposed. Studies in Oregon indicate that no more than 25 percent of a watershed should be disturbed at one time to maintain diverse salmon communities. Timber harvest in some watersheds will be over 80 percent in a decade.

C-22

RESPONSE: The analysis in the Draft EIS/EIR considered the potential effects on watersheds with respect to the applied mitigations of the proposed SYP/HCP. The potential effects were considered less than significant with respect to mass wasting potential, effects on peak flows, water temperature, and aquatic habitat. The Oregon study apparently

referred to in the comments evaluated the condition of watersheds with respect to the total range of effects from the beginning of logging until present time; it did not differentiate timber harvest practices of the last 20 years or those associated with the proposed HCP. A similar discussion of the condition of aquatic habitat with respect to past timber harvest practices was also presented in the EIS/EIR in sections 3.6.1.4 and 3.7.4.2.

Additionally, based on public comments on the Draft EIS/EIR and FESA and CESA permit issuance criteria, the wildlife agencies consider that additional mitigation above that analyzed in the Draft and Final EIS/EIR is appropriate to reduce the risk of potential adverse effects. This additional mitigation is presented in each resource section in Section 3 of the FEIS/EIR. This additional mitigation has also been incorporated into the Final HCP (Appendix P) where it is described in more detail. That additional mitigation includes evaluating the disturbance index (DI) at the hydrologic unit level which will limit timber harvest in theses areas.

C-23

COMMENT: Logging and road building on unstable slopes will cause sedimentation in streams and will be detrimental to aquatic habitat, coho salmon, and steelhead trout.

C-23

RESPONSE: These issues are analyzed in the EIS/EIR. Specifically refer to Sections 3.6 (Soils and Geomorphology), 3.4 (Watersheds, Water Quality, and Hydrology), 3.8 (Fish and Aquatic Habitat). The application of a variety of prescriptions that are more protective than those currently applied under California Forest Practice Rules, e.g., wider riparian buffers, avoidance of inner gorges and steep slopes, and a road improvement program will reduce the likelihood of significant mass wasting and sediment influx that can negatively affect aquatic habitat and fish.

C-24

COMMENT: The watershed assessment data for the SYP is incomplete, outdated, and in some cases misleading. The proposed SYP/HCP violates NEPA and CEQA by presenting misleading and inaccurate data on the present status of and expected results of logging in sensitive and damaged watersheds. CDFG and KRIS show evidence of an absence of coho where PALCO has logged.

C-24

RESPONSE: The analysis in the EIS/EIR was conducted with an awareness of these considerations including the information in KRIS Coho and the condition of Bear Creek. Consequently, these issues and conditions were not ignored in the consideration of watershed conditions or the effects of the proposed HCP over the term of the 50-year ITP or the 10-year period of the SYP. In addition, the SYP/HCP are not NEPA or CEQA documents. Rather the EIS/EIR is the NEPA/CEQA document and it considers the data indicated in the comment. Also, with respect to logging and coho presence, see responses to PM-1 and JLJ-1. The comments will be noted and incorporated into considerations for monitoring associated with the HCP/SYP and overall recovery efforts for coho salmon in this Evolutionarily Significant Unit (ESU).

C-25

COMMENT: The road densities on PALCO land are too high. KRIS Coho data show that high road densities are linked to high sediment levels in streambeds. PALCO will only remove about 50 miles of road per year of 2,000 miles of existing roads. This poses an unacceptably high risk of catastrophic flood damage from road failures during major storm events.

C-25

RESPONSE: The effects of roads, including density, are extensively analyzed in the EIS/EIR (see sections 3.4 Watersheds, Water Quality, and Hydrology; 3.6 Soils and Geomorphology, and 3.8 Fish and Aquatic Habitat). As noted in those sections, while roads are recognized as a potentially important contributors of sediment to streams (from either surface erosion or mass wasting) it is the location, condition, and maintenance of roads that is the primary determinant on whether effects are likely to occur. As indicated in the EIS/EIR, the road management and maintenance proposed as part of the SYP/HCP is a significant improvement over existing conditions and will have a beneficial effect on the contribution of coarse and fine sediment over the term of the ITP. In addition, the final HCP requires that all of PALCO's 1500 miles of roads be storm proofed over the next 20 years, and an average of 75 road miles per year. The mention of the amount of road PALCO intends to abandon is incorrect. PALCO will actually increase its road mileage and density as it enters new areas for timber harvest. This increase in road density was considered in the EIS/EIR. However, as noted above, it is the placement, condition, and maintenance of the roads rather than an arbitrary density that determines potential sediment effects.

C-26

COMMENT: The application of current logging practices will lead to later expenditures for watershed restoration after landsliding occurs.

C-26

RESPONSE: As noted in the response to C-23 above, the potential incidence of landsliding is expected to be reduced compared to current conditions. Consequently, any potential effects of hillslope mass wasting will be reduced. Additionally, the improvement in road maintenance for existing and new roads will similarly reduce the likelihood of mass wasting. As noted in the EIS/EIR, however, the risk of mass wasting will not be reduced to zero. Consequently, there is a potential that effects to stream channels will occur and that there would be expenditures made for related watershed restoration.

C-27

COMMENT: The watershed assessment process should not limit biologists in the level of protection that is applied. Pre-determined buffer zones or buffer zones that are limited are inappropriate.

C-27

RESPONSE: The agencies do not agree that the buffers provided for Class I and II streams in the proposed action/proposed project limit biologists in the level of protection applied. The buffers proposed for Class I and II streams were evaluated in the Draft EIS/EIR with respect to a wide variety of functions such as large woody debris, stream shade and associated water

temperature, detritus, and sediment trapping. The buffers considered for these streams were found to provide a moderate to high level of protection for these streams. The addition of AB 1986 buffer requirements to the Final SYP/HCP and the removal of the interim stream prescriptions will reduce the potential risk of localized adverse effects. Consequently, the agencies do not agree that these pre-determined riparian target protection levels in mind. The slope protection features can also extend the riparian management zone outward to encompass unstable slopes. In addition, based on public comments and FESA and CESA issuance criteria the wildlife agencies have included additional mitigation above that analyzed in the Draft and Final EIS/EIR to reduce the risk of potential adverse effects. This additional mitigation is presented in each resource section in Section 3 and includes a generally applicable 30 foot no cut buffer on Class III streams pending completion of watershed analysis. The additional mitigation has also been incorporated into the Final HCP presented in Appendix P.

C-28

COMMENT: Many comments were received on the riparian buffers or RMZs. These comments indicated that 30-foot no-cut buffers on Class I and II streams are inadequate to protect streams from temperature increases and sedimentation and that harvest to streambank on Class III streams would be inadequate to protect them from erosion. Many commentors indicated that FEMAT or Mantech buffers should be applied [these reports provide fundamental analysis of riparian zone functions in forested environments] to PALCO lands. Comments indicated that the interim buffers on Class I and II streams were inadequate to protect stream temperature and sediment influx. That the proposed RMZs are too complicated to enforce. That the allowed harvest within the RMZ would affect stream temperature. RMZs would be susceptible to blowdown. Some commentors indicated that current riparian zones on PALCO land are so degraded that there should be 200-foot buffers along streams. And that citizen volunteers should be permanently empowered to monitor water quality and their data should be used by CDF to determine adherence to the Forest Practices Rules.

C-28

RESPONSE: The agencies disagree with these statements. The FEMAT and Mantech reports generally are discussing the width of buffers necessary to reduce any potential impacts to near zero, in other words to the level where take is, or is almost, completely avoided. The SYP/HCP does not include the goal of providing protection of species that are the subject of the incidental take permit to the level that “take” would be avoided. The whole purpose of submitting an HCP is to get an incidental take permit for threatened and endangered species. Consequently, the suggestion that the RMZ widths be expanded and harvest be prohibited within the equivalent of two and one site potential tree heights away from Class I watercourses and from Class II and III watercourses, respectively, is mismatched to the objectives of the plan.

In addition, the Draft EIS/EIR evaluated the effects of the proposed HCP with respect to these very plans and determined that the level of effect with respect to LWD, stream temperature, sediment, and detritus input was not significant. Many commentors apparently misinterpreted the 30 foot no-harvest zone as the full RMZ on Class I streams. The SYP/HCP and EIS/EIR are very clear that the RMZs on these streams are 170 feet, not 30 feet. The 30 feet is a no-harvest zone which in the Draft SYP/HCP was followed by two other zones which allowed varying levels of partial harvest. The Draft EIS/EIR evaluated that level of harvest,

with respect to the FEMAT and Mantech analyses, and concluded that moderate to high levels of protection were provided by these prescriptions. The Draft EIS/EIR also analyzed the additional protection provided by the AB 1986 requirements that Class I streams have a 100-foot no-harvest zone and that Class II streams have a 30-foot (rather than 10-foot) no-harvest zone and indicated that these provided some additional protection. The Draft EIS/EIR discussed blowdown potential of riparian buffers in Section 3.7. Blowdown is usually localized, and while it can reduce the effectiveness of buffers for shade, it increases the input of LWD into the stream which is also an important contributor to aquatic habitat. The condition of the riparian zones on the PALCO ownership was discussed in Sections 3.7 and 3.8 (e.g., Table 3.7-8 and Figures 3.8-2a, 2b, and 2c). While there is a large amount of Class I and II streams with early and mid-seral forest, increasing buffers to 200 feet would provide very minimal additional protection (e.g., see curves in Figures 3.7-2a, 2b, 2c, 2d, and 2e) in the Draft EIS/EIR. Overall, the conclusions of the EIS/EIR are that the proposed buffers will achieve over time properly functioning aquatic habitat . The mitigation monitoring plan is presented in Section 2.9 of the Final EIS/EIR and will provide for both implementation and effectiveness monitoring. Monitoring approved permits and FPRs is within the statutory authority of the permitting agencies. The agencies agree that the indicated prescriptions are somewhat complex and will require attention in the field. However, all of the components of an HCP are similarly complex and such monitoring can be accomplished. These issues are addressed in the mitigation monitoring plan.

The reader should also note that based on public comments on the Draft EIS/EIR and FESA and CESA issuance criteria that the wildlife agencies have included additional mitigation above that analyzed in the Draft and Final EIS/EIR to reduce the risk of potential adverse effects, including the addition of 30 foot no cut buffers on Class III (intermittent) streams. This additional mitigation is presented in each resource section in Section 3. The additional mitigation has also been incorporated into the Final HCP presented in Appendix P.

C-29

COMMENT: PALCO sets a threshold of 18.4 degrees C maximum weekly average temperature (MWAT) for coho streams in their HCP. An MWAT of 18.4 degrees would allow temperatures of over 20 degrees C periodically. Recent studies show that coho cannot tolerate temperatures above 16.5 degrees C. Many streams on PALCO land currently exceed this threshold. In the Eel River drainage, stream warming favors the non-native Sacramento squawfish which eats salmon juveniles. The narrow buffer zones along streams will raise the air temperature which will in turn rain stream water temperatures, even if streams are shaded. A substantial amount of research demonstrates that fish diseases become more virulent at temperatures above 16 degrees Celsius.

C-29

RESPONSE: The commentors indicates that PALCO requests an MWAT of 18.4 degrees centigrade and questions the effectiveness of buffers described in the draft HCP for providing adequate temperatures for coho salmon. Since the draft HCP, additional measures and prescriptions for buffers have been added to the HCP. These are evaluated in the final EIS/EIR (see Sections 3.7, 3.8, and Appendix P). In addition, the MWAT value included in the final HCP has been revised to 16.8 degree C for late summer rearing and a general range of water temperatures from 11.6 to 14.6 degrees. These lower temperatures (compared to PALCO's proposed levels) would provide properly functioning conditions for coho salmon. With respect to fish diseases, the comment is noted.

C-30

COMMENT: There must be allowances for sufficient refugia for species like the coho salmon. Without these refugia the species will not survive.

C-30

RESPONSE: With respect to refugia issues, see responses to PH-2, PH-3, and PH-4.

C-31

COMMENT: The Magnuson-Stevens Act defines essential fish habitat as water and its substrate; it requires that critical fish habitat be equal to or less important than essential fish habitat. Under the law, therefore, neither essential nor critical fish habitat is affected directly by logging unless the trees or logs fall into water inhabited by endangered fish. Logging activities will not directly cause the take of an endangered species of fish or directly harm any endangered species of fish. The effect of trees or logs falling in water and damaging fish habitat is speculative. In some instances, habitat may be adversely affected, and, in some instances, it may be improved.

C-31

RESPONSE: Comment noted. However, the Aquatic Conservation Plan prescription in the HCP are designed to achieve over time properly functioning aquatic habitat.

C-32

COMMENT: The SYP would harvest 32 percent more forest than will grow back over the first decade. This first "decade" is only four years. Over 35,000 acres would be clearcut and over 2,500 acres would be uncut old-growth forests. This plan will not facilitate "sustained production of high-quality timber products...while giving consideration to environmental and economic values" as required under 15 CCR 1091.1(b). This is a plan for the short-term liquidation of forest resources at tremendous long-term environmental and economic cost.

C-32

RESPONSE: Though the exact origin is uncertain, the public comments concerning a "four-year decade" seem to be the result of a misunderstanding of various figures in PALCO's Draft SYP/HCP, e.g., the tables and figures in Part C, volume III. The first period shown in these tables and figures represents the completion of on-going and approved THPs and is shown as the period 1998 to 2003 in the figures. The actual first decade with respect to the LTSY modeling begins at 2003 and extends to 2013. The modeling to determine the LTSY began at these times to separate existing THPs (some of which are already harvested) from the LTSY modeling. The tables in the EIS/EIR (e.g., 3.9-6a to j) show the decadal periods. The proposed SYP is based on the growth rates, silvicultural prescriptions, and forest management practices described in the SYP/HCP and analyzed in the EIS/EIR including Section 3.9 Vegetation and Timber Resources. The premise is that sustainable, high-quality forest will be attained by converting most of the landscape to faster growing second-growth forests while protecting old growth in MMCAs and in riparian management zones. The Board of Forestry allows a landowner to balance the harvest rate and growth over time as long as they balance by the end of the planning period and as long as the harvest in an individual 10 year period does not exceed the LTSY. The Board of Forestry allows the landowner to determine the rate of harvest as long as it is sustainable as indicated. The

effects of the proposed action/proposed project were analyzed in detail in the Draft EIS/EIR and the effects on these other resources were determined to be less than significant.

C-33

COMMENT: Nowhere in the HCP are cumulative effects addressed adequately. Without a discussion of past effects from management there is no way that agencies can assess likely impacts from the harvesting planned in the SYP/HCP.

C-33

RESPONSE: Cumulative effects are evaluated in the EIS/EIR. In particular see sections 3.2, 3.4.3.10, and 3.6.6 for information related to evaluating cumulative effects. In addition, the affected environment portion of each resource section provide information as to the existing conditions that present and future actions interact with to produce cumulative effects. In addition, a discussion of the condition of aquatic habitat with respect to past timber harvest practices was also presented in sections 3.6.1.4 and 3.7.4.2. The agencies consider the cumulative effects analysis to be sufficient for NEPA and CEQA purposes. However, CDF considers the cumulative effects analysis in the SYP to be insufficient to meet the needs of individual THP approval. Consequently, cumulative watershed effects will have to be addressed in the individual THPs submitted if an SYP is approved per FPR 1091.1(b).

C-34

COMMENT: Under the HCP, PALCO could acquire an additional 25,000 acres and include them under its ITP even though the agencies will not have evaluated, either in the field nor the office, the resource considerations particular to those lands. PALCO intends to buy all the timberland it can get its hands on in Humboldt County once it has an HCP. They reason that they will be able to clearcut everything but the most minimal buffers around streams. Existing landowners cannot hope to cut that much and so will sell to PALCO. Eel River Sawmills and Barnum Timber are two companies within that class that have deals already negotiated. MAXXAM can use the money it receives from selling the Headwaters to acquire this new land rather than paying off its debt.

C-34

RESPONSE: The additional acreage that could be added by PALCO to an approved ITP was evaluated in the EIS/EIR (see Section 3.20.1). These additional lands would be restricted to within PALCO's existing boundary or within one mile of the existing boundary and would not include lands with old-growth forest habitat. The effects within these adjacent watersheds were considered in the EIS/EIR. The acreage is only about 15 percent of PALCO's current ownership and the additional 25,000 acres falls far short of anything that could be considered a significant acreage with respect to lands zoned as Timber Production Zone in Humboldt County. Additionally, the HCP measures in the proposed SYP/HCP are more protective than current California FPRs including the stream buffers, slope restrictions, and road location and maintenance procedures. Consequently, the circumstances are exactly the reverse of the comments. Any such land purchased by PALCO and managed under the SYP/HCP mitigation measures would have less forest harvested than under current ownership. PALCO and MAXXAM can use the money they receive for selling the Headwaters Forest as they consider appropriate. However, because the additional 25,000 acres cannot contain old growth habitat, it is unlikely to cost $500 million and it is therefore unlikely that MAXXAM would spend that sum to acquire acreage that could be managed under the terms of the ITP.

Of course they can purchase other timber lands; however, if PALCO wanted these lands covered by an ITP, they would have to prepare a new HCP or major amendment which would undergo a separate NEPA, and perhaps CEQA, analysis with the necessary public involvement component.

C-35

COMMENT: Timber companies should integrate with the recycling industry. All paper products should be recycled and our furniture should be made from renewable resources or from used wood.

C-35

RESPONSE: The recycling of wood and paper products is beyond the scope of this EIS/EIR.

C-36

COMMENT: Hearings should be held in San Francisco or the Bay Area. The number of hearings that are held on such important matters should be dramatically increased.

C-36

RESPONSE: The agencies did not consider it necessary to hold a separate hearing in San Francisco since a hearing was held in Oakland. The agencies consider that four public hearings on the Draft EIS/EIR plus the 48 day public comment period was sufficient to have all issues of concern from the public raised.

C-37

COMMENT: While those conducting the hearings and law enforcement were tolerant of people expressing views different than their own, the chair of the hearings exhorted speakers to submit their comments in writing if they wanted to read their views, repeatedly interrupted at least one speaker, told speakers to speak slower, and cut off one impassioned man with disdainful views of the hearing convenors altogether. One reason that people are reluctant to simply file their comments is fear that those comments will be tallied by a clerk as to the general viewpoint, and that the eloquent prose which represents strong thoughts and feelings will be filed away or shredded.

C-37

RESPONSE: We agree that people need to be heard and need to feel that the agencies are listening, and will give their comments full, respectful consideration. As indicated during the hearings, the chair asked people to submit their comments in writing because with the large number of speakers it was necessary to limit people's speaking time, and it was evident that many speakers might not get their full comments into the record in that time. By submitting them in writing they would have the opportunity to present their full views. As noted in the hearings, speakers were asked to speak slowly specifically so that their spoken statements could be entered into the record by the court reporter. If people spoke too quickly, the court reporter could not accurately record their statements. It is a standard rule of decorum that speakers at public meetings be polite, and it is within the authority of the chair to limit people's statements as deemed appropriate.

The agencies would like to assure the commentors that all spoken comments from the meeting transcripts and all letters received were read and are being responded to. The

agencies know that a good public involvement process is fundamental to good NEPA and CEQA analysis. Based, in part, on the wealth of credible substantive comment received, the wildlife agencies included important additional mitigation and minimization measures in to the final HCP to reduce the risk of potential adverse effects.

C-38

COMMENT: The SYP/HCP is a license to take public trust resources as the habitat is converted from a complex late seral forest to short rotation second growth. What provision has been made for climatic change over the next 100 years? An EIR should be completed on the subject of carbon storage within the old-growth redwood biome. Some commentors indicated that the harvest of forests affects carbon dioxide and oxygen and air quality and that it can have effects on climate and climate extremes.

C-38

RESPONSE: The EIS/EIR evaluated the effects of protecting large areas of old-growth in MMCAs and other forests in riparian zones. The determination was that the effects would be less than significant (see Chapter 2 and the individual resource sections). The specifics of climatic change are speculative but issues related to it such as fires or landslides are considered under changed circumstances and unforeseen circumstances (see section 3.20 and the Implementation Agreement). The evaluation of carbon storage was considered in the scoping report (Appendix D of the Draft EIS/EIR) and determined to be beyond the scope of this document. However, it is worth noting that because second-growth forests accumulate biomass more rapidly than old-growth forests, second-growth forests are generally considered to sequester more carbon than old-growth forests. The agencies are unaware of information that would indicate that timber harvest with successful regeneration has any effect on climate and climate extremes. The effects of timber harvest on forest microclimate are discussed in Sections 3.7 and 3.10.

C-39

COMMENT: Various statements were made requesting analysis of different alternatives. These included: review the Headwaters Stewardship Plan and promote it as a reasonable and effective alternative to PALCO/MAXXAM's plan. The current HCP should be scrapped and a new proposal drafted where PALCO retains ownership of all the land and performs massive restoration, replanting, and erosion control measures. No further logging would be allowed, and current employees could keep their jobs doing restoration. Negotiate with the governments of the U.S. and California to put the funds for the "Headwaters Deal" in escrow for one year. Remove your agencies from the process completely, except as called on by citizens to participate. Negotiate the removal of PALCO/MAXXAM management from the process, with the understanding that doing so is a condition of receiving the money set aside for the purchase of Headwaters lands. Replace the existing process with a "working group" of PALCO workers and Humboldt County residents of all persuasions on the Headwaters issue. Give the working group one year to determine how to manage PALCO lands in a way that sustains the health of both the economy and the environment for at least the next seven generations.

C-39

RESPONSE: As noted in Section 2.3, the alternatives considered in the EIS/EIR considered the full range of issues and provided a wide decision space for the decision makers. The

Headwaters Stewardship Plan and other forest products certification alternatives were incorporated into Alternative 3. See also Section 2.4.4 for a discussion of the Headwaters Forest Stewardship Plan. The other suggestions in these comments are beyond the scope of the EIS/EIR to analyze. The proposed project is to acquire the Headwaters and to evaluate whether to issue ITP and approve an SYP. PALCO cannot simply be excluded from this process and they would certainly not agree to any such exclusion. Similarly, the federal and state agencies have the statutory responsibility to process these permit applications and have the appropriate enforcement obligations. They cannot remove themselves from the process. Such alternatives are beyond the scope of this EIS/EIR to consider.

C-40

COMMENT: Extensive tractor logging is indicated for PALCO lands in the first and subsequent decades. Forest soils need to be protected to provide for sustainability.

C-40

RESPONSE: As noted in section 3.9 (Table 3.9-7, footnote 1), the FREIGHTS model overestimates the amount of potential tractor logging because slope steepness constraints are not modeled well. Consequently, the values presented are a worst case analysis. Additionally, there is recovery of compacted soil between timber harvests. Consequently, the agencies do not consider that the indicated level of potential effects is significant. In addition, the dedication of some amount of land for skid trails in timber extraction is necessary in timber harvesting operations.

C-41

COMMENT: Many comments were received that disagreed with the proposed timber management on the PALCO ownership. Some commentors suggested using hemp as a replacement for redwood trees. Others indicated that clearcutting was bad for the environment and that there should be no herbicides used and that sustainable forestry practices should be required. Another comment indicated that big trees save a forest from forest fire infernos and that fires have increased because of loss of old-growth trees. One commenter indicated that clearcutting causes more tick-borne diseases. Another comment suggested that no more than 10 million board feet of old growth per year be allowed within the area around the Headwaters Reserve and that no more than 20 percent of the trees be harvested in any square mile within that area until an adequate HCP and SYP are approved.

C-41

RESPONSE: The use of hemp as a replacement for redwoods was considered as beyond the scope of this EIS/EIR in the Scoping Report (Appendix D). The EIS/EIR fully evaluates the effects of clearcutting and related timber management activities on water quality, water quantity, forest seral stage distribution, wildlife, and aquatic habitat. Though all timber harvest, as well as clearcutting, has environmental effects these effects, as mitigated and minimized by the extensive conservation and management measures incorporated into the HCP were considered to be less than significant as defined in each resource section. The use of herbicides was also evaluated and found to meet the existing legal requirements. However, uncertainty about the specific impacts of herbicide and other forest chemical use on the covered species, has led the wildlife agencies to remove such use from the list of Covered Activities under the HCP. The agencies agree that larger and taller trees help reduce the severity of fire. However, there is no indication that severe fire frequency has increased on

PALCO's or adjacent lands in Humboldt County. The suggested timber harvest strategy falls within the decision space provided by the alternatives analyzed in the EIS/EIR, particularly Alternative 3. Whether the Final HCP is sufficient to be issued an ITP will be determined in the federal record of decision and statement of findings. With regards to ticks, they generally inhabit shrubs rather than trees. Since timber harvest does usually increase light and therefore shrub cover, it is possible that tick populations would increase. The agencies, however, do not consider that effect to be sufficient to limit timber harvest.

C-42

COMMENT: Herbicide use should be restricted. The human health effects of herbicide use are negative. Their use can also have negative effects on animals, fish, and amphibians. PALCO's SYP/HCP would radically increase the use of herbicide use in conjunction with widespread clearcutting. Herbicide use also involves petroleum/oil which is used as a dispersant which has negative environmental effects.

C-42

RESPONSE:

Scope of Proposed Action and Scope of EIS/EIR Review

The draft EIS/EIR describes the use of herbicides as part of PALCO's current and planned future practice of intensive forestry. The EIS/EIR lists a range of active herbicide ingredients and the actual herbicide formulations in use. The EIS/EIR describes PALCO herbicide use for 1997 and projects continuing herbicide use during the proposed life of the permit.

In discussing the environmental effects of herbicide use, the EIS/EIR concludes that there is a low likelihood of significant water quality, water supply, or public health impacts because of the relatively low application rate, the selective method of application (manually applied by individuals using a backpack spray unit), best management practices to avoid direct application to water, and, most importantly, compliance with the regulations regarding herbicide use that are already in place.

The proposed action which is the subject of this NEPA/CEQA document is public agency acquisition of Headwaters, land exchange, approval of an SYP, and issuance of an Incidental Take Permit. The SYP and the ITP specify the conditions under which PALCO will practice forestry to meet the standards and objectives set forth in the California Forest Practices Rules and the state and federal Endangered Species Acts. PALCO is permitted to log its property under existing state law and local General Plan, even without an SYP or an ITP, as long as PALCO is in compliance with applicable law.

The proposed actions subject to this NEPA/CEQA document do not permit or prohibit the use of herbicides except if the herbicides may result in an incidental take of protected species. The permits which may be issued based on this NEPA/CEQA document do not govern the aspect of the use of herbicides which may affect public health and beneficial uses of streams other than habitat of covered species.

The California Department of Forestry, which is lead agency for approval of the SYP for this environmental document, does not have permit authority over the use of herbicides in forestry. CDF relies on the regulatory process of other agencies with regulatory authority over herbicides and other pesticides. If the cumulative information on adverse public health

effects shows that some herbicide is not safe, its use will be modified or halted by those agencies with regulatory authority.

CDF does have authority over the SYP process as specified by the California Forest Practices Rules. Part of the calculation of Long-term Sustained Yield (LTSY) is based on the greater annual forest growth that comes from intensive forest management. Herbicides are among the tools used for intensive forest management. CDF will monitor PALCO's performance according to the provisions of the SYP. CDF does not specifically require PALCO to use herbicides, nor can CDF prohibit the use of herbicides. If herbicide use in forestry is prohibited by another agency, it is possible that PALCO will not meet its projected LTSY. If this were the case, then CDF would require PALCO to reduce its LTSY, either when the plan is renewed each decade or earlier under the monitoring terms of the SYP.

CDF has considered the public comment and CDF is in communication with agencies with regulatory authority over pesticides. While CDF acknowledges public concern over the use of herbicides in forestry and the potential impact on the environment and public health, CDF finds that there is no substantial evidence that those impacts are other than insignificant or are reduced to insignificance by the protective measures established by other agencies. CDF has no reason to believe that PALCO's ongoing use of herbicides in forestry will be substantially curtailed through the current regulatory process and therefore has no reason to believe that PALCO's projected LTSY cannot be attained for that reason.

The scope of environmental review for herbicides is thus limited to 1) the potential impact on covered species including incidental take, and 2) a general disclosure of the nature and quantities of herbicide use by PALCO and a confirmation that this use is expected to fall within the existing regulatory framework for pesticides. This EIS/EIR does not include a risk assessment for human health exposure and the assessment of the health effects of these herbicides is within the jurisdiction of other regulatory agencies and is outside of the scope of the proposed action and this EIS/EIR. With respect to environmental review of the potential impacts of herbicides on public health, water quality, and environmental effects other than on protected species, the EIS/EIR provides an analysis at a general level of detail corresponding to the general level of approval for the SYP and the fact that CDF as lead agency does not have direct regulatory authority or permit authority over herbicides.

The Incidental Take Permit Will Not Cover Take of Protected Species From Herbicide Application

The lead agencies have concluded that there is insufficient information to thoroughly analyze the potential incidental take from herbicide use and hence, the agencies cannot determine that take has been minimized or adequately mitigated. The agencies acknowledge that there is no evidence at present that PALCO's use of herbicides in forestry is resulting in an incidental take of any protected species, but the agencies do not find sufficient information on herbicide use, impact, and management to allow issuance of an Incidental Take Permit for the period of 50 years.

The agencies' proposed Incidental Take Permit will not apply to herbicide use and effects on covered species. PALCO may submit an amendment to the Incidental Take Permit to cover herbicide use. The amendment proposal will be based on a detailed herbicide use plan, in-field monitoring, and a risk assessment. The amendment will be subject to independent review by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service in

consultation with U.S. EPA, the North Coast Regional Water Quality Control Board and other responsible agencies. The amendment process will comply with NEPA.

Relationship between the SYP, Herbicide Use, and Increased Clear-cut Logging

PALCO's proposed SYP describes a system of forest management which emphasizes the increased timber productivity that results from even-age stand management and and rapid stand re-establishment using seedling tree planting and weed and brush control. PALCO also plans to improve productivity by rehabilitating some 20,000 acres of conifer forest. Herbicide use is a part of this program, but is not part of the specific regulatory authority of the California Department of Forestry. In reviewing the SYP, CDF examines the growth model used to project the long-term sustained yield (LTSY). The information submitted by PALCO reflects the growth from intensive management, including herbicides, and CDF finds that the projected growth rate in the final SYP is practicable. CDF will monitor PALCO's forest growth over the term of the SYP. If PALCO does not achieve the stated growth rate for any reason, including future regulatory restrictions on the use of herbicides in Forestry, then the LTSY will need to the revised downward.

Application of Herbicides on PALCO Land

The draft EIS/EIR describes the herbicides active ingredients and specific formulations used on PALCO land and projects the area of treatment based on PALCO estimates and illustrates this level of treatment with use data for 1997. Information in public comment and response clarifying and extend the description of PALCO's operations. Text changes are made to reflect this information.

The projections of PALCO herbicide use are based on estimates provided by PALCO. PALCO has used herbicides only since 1994 and the estimates are necessarily imprecise when considering the possible range of actions over a 50-year Permit. PALCO's estimate that 80 percent of the clear-cut area needs herbicide follow-up reflects its experience so far in mixed conifer or Douglas-fir dominated forest areas. The pure redwood stands stump sprout and are subject to less competition from annual weeds or lower growing brush and do not need herbicide treatment.

PALCO also estimates that up to 50 percent of the clear-cut areas treated with herbicide require a second year of treatment. Because of second year treatment of areas cut and treated once the year before, the total area subject to herbicide treatment each year will be greater than the acreage of fresh clear-cut to be treated. Using PALCO's estimate of 50 percent re-treatment yields the following calculation: The acreage treated in a year could be as much as 6,100 acres (2,000 acres of conifer rehabilitation, 2,700 acres of first time treatment of clear-cut, and 1,400 acres of second time treatment of clear-cut areas treated previously). The text of the draft EIS/EIR on page 3.14-9 has been changed to add this information. The original text described only the extent of new clear-cut areas subject to treatment, not the total area subject to treatment. PALCO may treat upwards of 6000 acres annually with herbicides, and over the first decade, it is estimated that some 47,000 acres (roughly one-quarter of the active ownership) will be subject to some form of herbicide treatment, once or twice.

Diesel oil is mixed with the concentrated herbicide as a diluent only for basal bark treatment. Diesel is used in basal bark treatment because it helps the Garlon adhere to the plant, helps penetrate the bark, and resists water wash-off (e.g. from rain). Other oils,

synthetic or natural, such as vegetable oil, can be used instead of diesel, but diesel is most commonly used because of its lower cost. There is no record keeping requirement for use of diesel as a herbicide diluent; PALCO has no records of the amount of diesel use for basal bark treatment.

When a 2% or 2 1/2% Garlon solution is used in diesel, there is a substantial diesel usage overall: because each gallon of Garlon active ingredient is carried in 40 to 50 gallons of diesel. Thus it is reasonable to estimate that a basal bark treatment rate of 0.8 gallons of Garlon 4 per acre will be carried in approximately 40 gallons of diesel. In 1997, PALCO records show 1,305 acres of basal bark treatment using 1,096 gallons of Garlon 4, an average of 0.84 gallons per acre. The EIS/EIR consultant estimates that this application corresponds to approximately 50,000 gallons of diesel oil diluent applied across the ownership in that year. The EIS/EIR text (Table 3.14.2 PALCO Herbicide Applications 1997, page 3.14-7) has been modified to reflect this information.

Diesel oil is only slightly volatile and most of it will remain on the plant or on the soil at the site of application. Diesel will biodegrade on soil with moisture, air, and sunlight, but will persist if conditions are not optimal for microbial activity. It is expected that an application on the order of thousands of gallons of diesel oil could accumulate in a watershed and contribute to petroleum exposure in ground water or surface water. Monitoring data for watershed treated with diesel-based basal bark applications is not available, hence the magnitude of the effect on aquatic species including covered species cannot be assessed. The agency recommended action is to exclude coverage for incidental take for herbicide applications pending an amendment which would include a detailed risk assessment of the specific formulations proposed for use. The assessment of formulations will need to include an analysis of the impact of using diesel oil and the minimization of take afforded by alternative methods of application or alternative materials such as vegetable oil instead of petroleum as the herbicide diluent.

Health Effects Concerns over Herbicides

Several commentors cited literature identifying potential public health impacts of several of the herbicides planned for use by PALCO. The additional information supplied by commentors is included in the environmental record. The agencies agree that the chemicals used as active ingredients and adjuvants are potentially harmful to human health and recognize that the potential for health impacts on workers and on the general public is taken into account during the registration process administered by the U.S. EPA and the state of California. According to this registration process, the risk is reduced to insignificance when the chemicals are applied in accordance with the label and applicable regulations.

This EIS/EIR does not include a risk assessment for human health exposure and the assessment of the health effects of these herbicides is within the jurisdiction of other regulatory agencies and is outside of the scope of the proposed action and this EIS/EIR. The agencies are aware of and acknowledge the information submitted on potential health and environmental effects. The use the herbicides in forestry is controversial, and the controversy is increased by the growing environmental concerns about some herbicides used in general agriculture, such as atrazine. The agencies recognized that new information and ongoing regulatory review may result in future restrictions on herbicide use generally, which may affect PALCO. No information was received in public comment to show that the general regulatory approval of herbicides in forestry should not apply to PALCO's operation on its Humboldt County ownership. Local conditions and potential impacts on water supply and

other beneficial uses of water are monitored by the North Coast Regional Water Quality Control Board. The Regional Board has authority independent of the proposed action considered by the lead agencies for the EIS/EIR, and at present the Regional Board has not identified conditions on PALCO's land which would lead it to further restrict herbicide use there.

Additional Information

More information on the subject of herbicides can be found in the following public comment and in responses to comment: David Baston, DB-5 through DB-11, Californians for Alternatives to Toxics (CAT); Bruce Campbell, BC-6 through BC-19; CETOS Center for Ethics and Toxics, Marc Lappe, PALCO, PL-121 through PL125, and particularly, PALCO, pp. 66 through 167,"Environmental Risk Assessment of Herbicide Use on Forest Lands of the Pacific Lumber Co., Scotia California", Dean G. Thompson, Ph.D., Nov. 13, 1998.; United States Environmental Protection Agency, EPA-36 through EPA-78.

C-43

COMMENT: Some commentors indicated that timber harvest can promote plants that need high levels of sunlight to grow and that timber harvest can therefore be good for some wildlife.

C-43

RESPONSE: The agencies agree that early successional habitat is good for some species and this effects is discussed in Section 3.10 of the EIS/EIR. However, these species are not threatened or endangered.

C-44

COMMENT: Timber harvest removes plant biomass, and hence nutrients, but nutrients are more available to streams immediately following harvest, resulting in part from addition of slash to the forest floor, accelerated decomposition of litter, and increased runoff and erosion. This short-term increase diminishes as soils stabilize and revegetation occurs.

C-44

RESPONSE: The agencies generally agree with this statement. However, the overall nutrient effects are not significant within the overall landscape perspective.

C-45

COMMENT: There is inadequate protection of Douglas-fir communities. Too much is being harvested.

C-45

RESPONSE: Douglas-fir communities are discussed in the Draft EIS/EIR in Section 3.9. Although old-growth Douglas-fir will be reduced in the Mattole watershed, the reduction is a very small percentage of the regional acreage much of which is in public ownership.

C-46

COMMENT: Timber harvest will modify tree species composition – Douglas-fir will replace redwoods. Replacing redwood with Douglas-fir represents substituting higher-cost/slower-

growing trees with lower-quality/faster-growing trees. Such a shift indicates a desire for short-term profits rather than long-term sustained profits

C-46

RESPONSE: CDF disagrees that the planting of Douglas-fir seedlings will be a significant adverse environmental effect. First, CDF is unaware of any unique plant and/or animal assemblages in redwood forests that do not also occur in redwood/Douglas-fir, Douglas-fir/redwood, or Douglas-fir dominated forests, and the commentators do not identify any such species. Second, CDF does not agree that the planting of Douglas-fir seedlings will lead to the "conversion" of redwood dominated forests to Douglas-fir dominated ones. There is no indication from the modeling inputs or from the ground practices that a major type conversion from redwood to Douglas-fir is being planned or implemented. The acres of Douglas-fir and redwood type change very little in the projected 120 years. The volume does shift from about one-third to one-half of the relative standing volume in Douglas-fir. The regeneration assumptions for plantations includes redwood stump sprouts and planted redwood and Douglas-fir for redwood sites. There are an equal number of redwood and Douglas-fir trees planted on both intensively and extensively managed sites. This is consistent with observations made in the field by CDF. Douglas-fir sites are not planted to redwood although existing redwood will sprout.

C-47

COMMENT: Edge effect management is necessary if PALCO is dedicated to clearcutting. Many species cannot survive on the edge of the forest—they need deep, undisturbed forest for growth. Large clearcuts produce much “edge” on the surrounding forest. More importantly, clearcuts placed near other clearcuts can create islands of forest between them that are entirely edge, as the edge effect will generally extend into a forest 2 to 4 times the height of site-specific trees. To maintain and sustain the structure and diversity of the forest, PALCO has to implement a silviculture system that takes into account the issue of edge effect

C-47

RESPONSE: Edge effects were evaluated in Section 3.10 of the EIS/EIR. While these edge effects are important, the protection of about 8,400 acres of old-growth and residual in the MMCAs (including the Grizzly Creek complex if necessary to avoid jeopardy to the murrelet) and another 7,500 acres in the Headwaters Reserve will provide stable, interior habitat over the life of the permit (MMCAs) and in perpetuity (Headwaters Reserve).

C-48

COMMENT: Logging will reduce marbled murrelet habitat, this reduction will be bad for the population. The take of 241 to 340 individuals is not justified.

C-48

RESPONSE: The analysis in the Draft EIS/EIR indicates that the indicated numbers are worst-case analysis based on the assumption that there is a one-to-one relationship between habitat loss and the at-sea populations of marbled murrelet in the bioregion. As discussed in the EIS/EIR the MMCAs retain the majority of high-quality habitat for the marbled murrelet including the habitat most likely to improve over the term of the ITP. With AB 1986 provisions, the Owl Creek MMCA would be protected for the 50 year permit term thereby

providing protection for more habitat. In addition, based on public comment and FFESA and CESA issuance criteria, the wildlife agencies consider it appropriate to provide additional mitigation to reduce the risk of potential adverse effects. For more discussion of effects to marbled murrelet populations, see response to HC-1.

C-49

COMMENT: Some commentors indicated that the language for the managing the MMCAs is discretionary, thereby offering no assurance of management for old growth characteristics.

C-49

RESPONSE: The MMCAs would be protected from timber harvest and other management activities detrimental to the marbled murrelet for the 50-year term of the ITP. The discretionary aspect only relates to whether the wildlife agencies would approve some thinning of second growth on a case by case basis to enhance the development of old-forest characteristics. PALCO cannot conduct any harvest of timber in the MMCAs without the prior approval of the wildlife agencies, and the agencies would only request such management if it enhanced habitat development.

C-50

COMMENT: Why is there a hole in the Headwaters? There is a large area on the north side of the proposed Headwaters Reserve with older second-growth forest that will become PALCO lands and remain open to harvest.

C-50

RESPONSE: The area indicated is analyzed as part of Alternative 4. As noted in section 2.3, however, the agencies cannot unilaterally impose some components of the alternatives on PALCO without PALCO's consent. The Reserve design indicated in Alternative 2 is the land PALCO was willing to sell at the time of the original September 1996 agreement. With AB 1986, the potential acquisition of other lands could possibly occur. However, whether or not any such funds would actually be available after the possible purchase of the Owl Creek tract is unknown. If such funds are available at that time, and PALCO is a willing seller, such a transaction would be possible. However, purchase of lands authorized by the California legislature does not require evaluation in an EIR and that purchase could proceed at any time funding and agreement existed. Additionally, Alternative 4 includes analysis of a 63,000 acre area which includes the area this comment refers to. As indicated in section 2.3 the final decisions of the agencies may include components of different alternatives that are based on the analysis in the EIS/EIR.

C-51

COMMENT: PALCO can continue rock material source operations in MMCAs whenever they can. Does this mitigate disturbance during the nesting season to the maximum extent practicable?

C-51

RESPONSE: The final HCP incorporates increased mitigations that will insure the minimal rock excavation allowed in the MMCAs does not result in detrimental impacts to the marbled murrelet (see Appendix P). Operations at the commercial quarry in the Allen Creek MMCA have been restricted to avoid adverse impact to murrelets. The quarry is an important local

source of material necessary for road repairs that are a key component of the aquatic conservation strategy.

C-52

COMMENT: The tailed frog, giant Pacific salamander, and southern torrent salamander are species that require late seral forest to survive because they buffer stream temperatures and maintain high humidity over the stream. PALCO plans extensive clearcuts in the Mattole Basin where these animals are clearly at risk. Thinning/harvest in riparian buffers will allow air temperature changes.

C-52

RESPONSE: Class II stream protection measures provide a high degree of canopy closure that is important in maintaining appropriate temperatures. For additional discussion, see responses to Hartwell Welsh in the detailed responses.

C-53

COMMENT: PALCO timber harvest will have negative effects on the fishing industry. The reductions in fish populations will negatively affect commercial and recreational fishing.

C-53

RESPONSE: Comments on the DEIS included concerns about the impacts of timber harvesting on local fisheries and the North Coast fishing industry. Issuance of an Incidental Take Permit requires agency approval of PALCO's proposed HCP. With respect to the aquatic environment, implementing the HCP would be expected to achieve over time properly functioning aquatic habitat conditions. Consequently, the implementation of the proposed HCP should benefit fish residing in streams on PALCO timberlands. Habitat restoration on PALCO these lands, however, would not necessarily benefit fisheries of other Humboldt County or North Coast streams or lakes. Furthermore, habitat restoration on PALCO timberlands would only improve some of the factors affecting the survivability of fish species. It cannot address other issues such as ocean conditions or climatic variations that result in drought. Restoration of fisheries, therefore would not lead to significant increases of rare and/or threatened species within the near-term and would not likely benefit either commercial or recreational fishing. No additional text was added to the EIS.

C-54

COMMENT: Comments submitted raised concerns over the potential effects on tourism resulting from the implementation of the proposed project alternative. PALCO's timber harvest will have effects on tourism. There would be more tourism with less clearcutting and more trees left on the landscape. The Headwaters Reserve could increase tourism.

C-54

RESPONSE: The assumption of such concerns is that reduced harvesting and elimination of clearcut logging practices would increase tourism in the area. PALCO's lands are only visible from a few areas where tourists commonly drive (see Section 3.16 in the EIS/EIR). Although these views may be upsetting to some visitors, it is extremely unlikely that the specific views from these specific sites would make potential tourists avoid Humboldt County. Clearly some visitors would come to sight-see on the North Coast, but larger

numbers would more than likely occur if the region developed additional destination attractions.

The planned management of the Headwaters Reserve encompasses low-impact recreational activities consistent with threatened and endangered species and general wildlife conservation. While at this time, only general guidelines have been proposed for the acquired lands, it seems highly unlikely that the Headwaters would become a major tourist attraction such as the state and national parks that are easily accessible along Highway 1 and 101.

If the Proposed Alternative is approved, though, the BLM and the State of California would move forward to develop a detailed land management plan. This planning document would be available for public review and comment at a later date. Until a more detailed land management plan is developed it would be speculative to forecast specific benefits to the local or regional tourism industry from the proposed establishment of the Headwaters Reserve. For these reasons, additional analysis or discussion has not been added to the EIS on this issue.

C-55

COMMENT: The high level of initial timber harvest will reduce future timber harvest and will impact logging jobs in Humboldt County over the long term.

C-55

RESPONSE: Comments received on the DEIS expressed concern over the potential long-term effects on Humboldt County timber workers due to the projected high volumes of timber planned to be harvested on PALCO lands over the near-term period. As shown in each of the alternatives evaluated in the EIS/EIR, timber harvest volumes on PALCO timberlands would decline over the next 40 to 50 years and then timber harvests would gradually increase again in the later decades of the 120-year planning period for the proposed HCP (see Section 3.9). As described in Section 3.13, these declining volumes of timber would be expected to reduce employment opportunities for timber workers on PALCO timberlands. With respect to the LTSY approach, see general response C-20. In addition, this trend is not unique to PALCO timberlands and is projected to occur throughout the region (see Section 3.13.1.4). The reason behind this regional trend, however, is not related to near-term timber harvesting activities, but to the historic very large timber harvests following World War II. The heavy rate of timber harvests at that time produced a disproportionately small volume of standing timber that will reach maturity for harvesting in the middle of the next century. Please refer to the more detailed evaluation of potential long-term timber-related employment in the region in Section 3.13 of the EIS/EIR.

C-56

COMMENT: PALCO is good for local economy. They are the largest employer in Humboldt County. Comments generally in favor of the HCP from an economic perspective.

C-56

RESPONSE: The agencies concur with these comments that portray PALCO as a major employer in the region and a member of the regional economy. As no new information was provided with the comments to either add to or contradict existing analysis in the EIS/EIR, none of the text in the document was modified.

C-57

COMMENT: Comments expressed concern that if the proposed action resulted in a decrease in timber harvests from PALCO timberlands, then there would be an increase in logging elsewhere.

C-57

RESPONSE: With respect to these comments, it is unclear if the increase in harvest would occur locally, regionally, or outside the country. Nor is it clear if a decrease in PALCO harvesting would affect logging of any or all commercial timber species or just redwood trees.

As described in Section 3.13 of the EIS/EIR, timber harvesting on PALCO timberlands has historically comprised a significant share of timber harvested in the county as well as all of California. But reductions in timber supply would only result in additional logging elsewhere if the demand for timber and wood products were constant. In fact, many variables affect the supply and demand of timber. Historical fluctuations are described in Section 3.13. As such, it would be incorrect to assume that there is a simple causal inverse relationship between PALCO logging and logging on other timberlands. For these reasons, any attempt to forecast how the reductions in timber harvesting by one timberland owner, PALCO, would affect the logging practices of one or more timberland owners would be speculative. For this reason, the text of the EIS/EIR has not been modified based on these types of comments.

C-58

COMMENT: Comments submitted state that preserving old-growth trees makes good economic sense.

C-58

RESPONSE: We wish to acknowledge this comment. This comment and others similar to it, however, do not provide any specific background information that would provide analytical evidence that would support the statement. As such, the text of the EIS/EIR has not been modified based on this comment.

C-59

COMMENT: Strict oversight from federal agencies is absolutely critical. HCP provisions are meaningless unless enforced. CDF needs more staff to conduct an effective monitoring program. There is an inability of the regulatory agencies to enforce the Forest Practices Act. The final HCP should explicitly provide that state and federal personnel be maintained on site at all company timber operations, at company expense, in order to inspect and enforce the provisions of the HCP and AB 1986. Only $1,000 fine for violation of forestry laws have been imposed by CDF, so clearly PALCO will not comply with any species protections unless strictly monitored and enforced by federal agencies. Fines should be considered for violation of prescriptions. Monitoring should be done by independent, non-government groups.

C-59

RESPONSE: The agencies agree that oversight by federal and state agencies will be necessary for successful HCP implementation. Nothing in the process of issuing an ITP abrogates the duty of the Services to enforce the FESA. Permit enforcement will be carried out as a matter of programmatic responsibility and through the use of compliance

monitoring, site inspection, remote sensing and aerial imagery, and other emerging techniques. In addition, as discussed further below, the company will be required to fund an independent third party monitor who must be present on site during each timber harvest to monitor the company's compliance with the terms and conditions of the HCP and ITP. Substantial penalties under the ESA and other federal law are provided for violation of ITP. In addition, several remedies are provided under state law to enforce the provisions of the ITP and Forest Practice Act. See also response to BRC-1 and 2. The wildlife agencies and CDF intend to closely monitor PALCO's compliance with any ITP issued and shall provide technical assistance to PALCO regarding implementation of the HCP throughout the duration of the permits. In addition, interested members of the public may notify the Services of compliance issues. Under the ITP, THPs submitted by PALCO would have to conform to the HCP conservation and management measures that are relevant to each THP and CDF would ensure such compliance. A detailed mitigation monitoring plan will be in place if the ITP are issued.

PALCO's history of Forest Practice Rule violations and recent timber operator's license suspension is cause for considerable concern and while it does not disqualify the company from receiving an ITP under Federal or state law (see comment C-12) does warrant close monitoring of the company's compliance with the wildlife agencies and CDF. Several provisions have been added to the HCP's Implementation Agreement (IA) to strengthen both compliance and effectiveness monitoring by the Wildlife agencies. Chief among these provisions is Section 3.4.1 which requires PALCO to fund for the life of the permit an independent on-site monitoring entity ("HCP Monitor") approved by the wildlife agencies to inspect whether the Covered Activities are being carried out in accordance with the provisions of the HCP, and at the agencies election, to monitor the effectiveness of the HCP's Operating Conservation Program. The HCP monitor is to be given full access to PALCO's land to inspect the Covered Activities and must be present during each timber harvest conducted by PALCO or on the company's behalf by third party contractors. The HCP Monitor is to immediately report any deviations by PALCO from the requirements of the HCP to designated representatives of the wildlife agencies and CDF so that appropriate enforcement action can be taken.

Section 3.2 of the IA has been modified to clarify PALCO's responsibility and liability under the ITP for the actions of all of its employees and contractors conducting Covered Activities. The Company is required to conduct an HCP education program for all of its employees and contractors to insure they are properly advised of the HCP's requirements. In addition, each contract between PALCO and a third party contractor is required to include a provisions requiring the contractor to comply with the Federal and state ITP.

Section 3.3 of the IA requires PALCO to provide an annual budget approved by its board of directors which demonstrates sufficient funds to carry out PALCO's commitments for the next fiscal year. This provision has been modified to require PALCO must post security in the amount of $2 million which approximates the amount necessary to carry out the company's obligations for one year. The security must be renewed annually, adjusted annually for inflation and immediately replaced by PALCO should the wildlife agencies draw on it as a result of PALCO's failure to fully carry out its HCP obligations. The obligation to post security adequate to carry out PALCO's out of pocket costs for each year will insure that mitigation keeps pace with the company's harvest and other covered activities.

C-60

COMMENT: Fish abundance and turbidity are not part of the monitoring plan. Any increasing trend in stream temperature would only be used to change management practices every five years. PALCO would conduct sediment source analysis only every five years, including counting landslides. All trends would be measured relative to current conditions on the ground and in the water sot here will be a strong impetus to keep things at the status quo.

C-60

RESPONSE: As noted in Section 2.9 of the Draft EIS/EIR monitoring plan has to be available at the time of permit issuance. The plan presented in the Draft EIS/EIR was only to provide general information about the plan. The Final EIS/EIR contains an updated but still not final version of the monitoring plan. The final plan will be available at the time of permit issuance. Detailed fish abundance surveys are not required as part of the plan monitoring because fish populations on PALCO's land are not only related to conditions on that land. Rather they represent the totality of that habitat and conditions found on adjacent aquatic habitat and in the marine environment. Turbidity, in and of itself, is extremely time consuming to measure and evaluate with statistical accuracy and is not considered necessary for direct monitoring. It is, however, evaluated through the implementation and effectiveness monitoring of the other prescriptions applied across the landscape. This monitoring includes sediment source inventories for each hydrologic unit with follow up studies within five years. The indicated five year period is considered appropriate considering the size of PALCO's ownership and the ability to usefully collect and analyze such data. The indicated five year period is also considered appropriate with respect to stream temperatures because of the natural variability in streamflow and solar insolation received at a stream (i.e., cloud cover and other variations) from year to year. With respect to current conditions, these are exactly what is necessary to measure from. That is, has improvement occurred and how much improvement has occurred. However, the goal is a properly functioning aquatic ecosystem as determined by specific parameters (see Appendix K of Draft EIS/EIR).

C-61

COMMENT: PALCO will have only a limited ability to interpret findings due to the difficulty in attaching trends to practices examined under limited monitoring, thus avoiding correcting harmful practices. Their adaptive management ability will be minimal.

C-61

RESPONSE: The agencies disagree. The final monitoring plan has a variety of implementation and effectiveness monitoring procedures which are designed to provide useful feedback on plan implementation. In addition, watershed analysis will be completed within five years and redone over the life of the ITP. These measures will provide for adequate feedback and the ability to adapt prescriptions.

The EIS/EIR includes most recent available NSO research in its analysis. Further, the final Habitat Conservation Plan has been revised to include an adaptive management approach which will incorporate existing research information and include experimentation as a fundamental element of the strategy.

DETAILED RESPONSES

Detailed Comments and Responses

As noted earlier, some letters had more detailed comments, sometimes addressing particular pages or paragraphs or specific analyses or conclusions documented in the Draft EIS/EIR or SYP/HCP. These letters have comments individually identified in the margin of each letter. The letters with substantive comments are reproduced on CD-ROM, which is included here as Appendix U. These letters have not been reproduced in hard copy because of the quantity received (approximately 2,000 pages). Responses for these comments are presented in the same order as in the letter. Each letter has an identification code, e.g., SCE for the Sierra Club/Environmental Protection Information Center and a comment identification number, e.g., SCE-1 or SCE-2. Tables T-3 and T-4 list the comment letters responded to in this manner. Table T-3 alphabetically lists the comment authors and gives their identification code. Table T-4 is a comparable alphabetical list sorted by identification code.

Table T-3. Alphabetical Listing of Authors of Detailed Comments, with Response Identification Codes

Identification Code	Name of Commentor
ALA	American Lands Alliance
AYS	As You Sow
JB	Barnes, Jerry
BTC	Barnum Timber Company
DB	Baston, David
EB	Berol, Emilia
WGB	Bertain, William G.
PB	Bloom, Peter
PJB	Bralver, Peter J.
BLM	Bureau of Land Management
JBBDS	Burton, John and Byron D. Sher, California Legislature
CDFG	California Department of Fish and Game
CDPR	California Department of Parks and Recreation
CDMG	California Division of Mines and Geology
CRWQCB	California Regional Water Quality Control Board
CT	California Trout
CTETAL	California Trout, Coast Action Group, Env Law Foundation, EPIC, Inst for Fisheries, Northcoast Env Center,
CAT	Californians for Alternatives to Toxics
BC	Campbell, Bruce
PC	Carlson, Peter
PVC	Carrol, Paul V.
HC	Carter, Harry
CET	Center for Ethics and Toxics
DWC	Chapman, D.W.
COF	City of Fortuna
CAG	Coast Action Group
FWC	Cobb, Fields W. Jr.
COH	County of Humboldt
RC	Cowan, Ron
BRC	Cummings, Brendon R.
RRC	Curry, Robert R.
JLD	Derksen, Jan and Linda
SED	Duggan, Sharon E.
CE	Elkins, Cynthia (EPIC)
ME	English, Mitch
ELF	Environmental Law Foundation
EPA	Environmental Protection Agency
NADCE	Erman, Nancy A. and Don C.
DF	Fortson, Dan
ABF	Franklin, Allen B.
CAF	Frissell, Christopher A.
MF	Fry, Michael
BG	Gaffney, Brian
PG	Gavin, Peter
TLG	George, T. Luke
AG	Gonzales, Armand
PNG	Goodman, Patrick and NanSea
GEC	Grassetti Environmental Consulting
JG	Groeling, Jim
PH	Higgins, Patrick
DH	Holland, Dan
RHA	Hrubes, Robert H. & Associates
RHA-II	Hrubes, Robert H. & Associates

Table T-3. Alphabetical Listing of Authors of Detailed Comments, with Response Identification Codes

Identification Code	Name of Commentor
HWC	Humboldt Watershed Council
DMI-I	Ihara, Daniel M.
DMI-II	Ihara, Daniel M.
NRI	Ihara, Nancy R.
IFR	Institute for Fisheries Resources
LJ	Jean, Lisa
JLJ	Johnson, Jason L.
VWK	Kacynski, V. W.
JLK	Kadoch, Joyce L.
DJK	Kosmal, Daniel J.
TNL	Lippe, Thomas N.
JL	Lowe, Jason
LSA	LSA Associates, Inc.
MRC	Mattole Restoration Council
MWSSG	Mattole Watershed Salmon Support Group
TAM	Metz, Timothy A. (Restoration Forestry, Inc.)
GM-II	Miller, George
GM	Miller, George, and others (U.S. Representative)
RAM	Mills, Richard A.
DRM	Montgomery, David R.
PM	Moyle, Peter
MM	Munnecke, Marchel
DDM	Murphy, Dennis D.
NESN	National Endangered Species Network
KN	Nelson, Kim
NN	No Name
NN-II	No Name (illegible)
JNL	Noell, Jesse N.
RN	Noss, Reed
PL	PALCO
LP	Perkins, Linda
GP	Pess, George
PP	Phillips, Perry
LMR	Reid, Leslie M.
TDR	Roelofs, Terry D.
RF-II	Rose Foundation, The
RF-III	Rose Foundation, The
SF	Salmon Forever
SCMMG	Santa Cruz Mountains Marbled Murrelet Group
SJS	Shelburn, Shirley J.
FS	Shilling, Fraser
SCE	Sierra Club-EPIC
SS	Smallwood, Sean
SSC	Spirit of the Sage Council
SSC2	Spirit of the Sage Council
AGS	Stanley, Amanda G.
ET	Taylor, Ellen
TA	Trinity Associates
USGS	U.S. Geological Survey
DMW	Walsh, David M.
HHW	Welsh, Hartwell H.
SEW	Wilcox, Susan E.

Table T-4. Identification Codes and Authors of Detailed Comments

Identification Code	Name of Commentor
ABF	Alan B. Franklin
AG	Armand Gonzales
AGS	Amanda G. Stanley
ALA	American Lands Alliance
AYS	As You Sow
BC	Bruce Campbell
BG	Brian Gaffney
BLM	Bureau of Land Management
BRC	Brendon R. Cummings
BTC	Barnum Timber Company
CAF	Christopher A. Frissell
CAG	Coast Action Group
CAT	Californians for Alternatives to Toxics
CDFG	California Department of Fish and Game
CDMG	CA Div of Mines and Geology
CDPR	California Department of Parks and Recreation
CE	Cynthia Elkins (EPIC)
CET	Center for Ethics and Toxics
COF	City of Fortuna
COH	County of Humboldt
CRWQCB	California Regional Water Quality Control Board
CT	California Trout
CTETAL	California Trout, Coast Action Group, Env Law Foundation, EPIC, Inst for Fisheries, Northcoast Env Center,
DB	David Baston
DDM	Dennis D. Murphy
DF	Dan Fortson
DH	Dan Holland
DJK	Daniel J. Kosmal
DMI-I	Daniel M. Ihara
DMI-II	II-Daniel M. Ihara
DMW	David M. Walsh
DRM	David R. Montgomery
DWC	D.W. Chapman
EB	Emelia Berol
ELF	Environmental Law Foundation
EPA	Environmental Protection Agency
ET	Ellen Taylor
FS	Fraser Shilling
FWC	Fields W. Cobb, Jr.
GEC	Grassetti Environmental Consulting
GM	U.S. Rep George Miller et al
GM-II	George Miller
GP	George Pess
HC	Harry Carter
HHW	Hartwell H. Welsh
HWC	Humboldt Watershed Council
IFR	Institute for Fisheries Resources
JB	Jerry Barnes
JBBDS	John Burton and Byron D. Sher, California Legislature
JG	Jim Groeling
JL	Jason Lowe
JLD	Jan & Linda Derksen
JLJ	Jason L. Johnson
JLK	Joyce L. Kadoch

Table T-4. Identification Codes and Authors of Detailed Comments

Identification Code	Name of Commentor
JNL	Jesse N. Noell
KN	Kim Nelson
LJ	Lisa Jean
LMR	Leslie M. Reid
LP	Linda Perkins
LSA	LSA Associates, Inc.
ME	Mitch English
MF	Michael Fry
MM	Marchel Munnecke
MRC	Mattole Restoration Council
MWSSG	Mattole Watershed Salmon Support Group
NADCE	Nancy A. & Don C. Erman
NESN	National Endangered Species Network
NN	No Name
NN-II	II-No Name (illegible)
NRI	Nancy R . Ihara
PB	Peter Bloom
PC	Peter Carlson
PG	Peter Gavin
PH	Patrick Higgins
PJB	Peter J. Bralver
PL	PALCO
PM	Peter Moyle
PNG	Patrick and NanSea Goodman
PP	Perry Phillips
PVC	Paul V. Carrol
RAM	Richard A. Mills
RC	Ron Cowan
RF-II	The Rose Foundation
RF-III	The Rose Foundation
RHA	Robert H. Hrubes & Associates
RHA-II	Robert H. Hrubes & Associates
RN	Reed Noss
RRC	Robert R. Curry
SCE	Sierra Club-EPIC
SCMMG	Santa Cruz Mountains Marbled Murrelet Group
SED	Sharon E. Duggan
SEW	Susan E. Wilcox
SF	Salmon Forever
SJS	Shirley J. Shelburn
SS	Sean Smallwood
SSC	Spirit of the Sage Council
TA	Trinity Associates
TAM	Timothy A. Metz (Restoration Forestry, Inc.)
TDR	Terry D. Roelofs
TLG	T. Luke George
TNL	Thomas N. Lippe
USGS	U.S. Geological Survey
VWK	V. W. Kacynski
WGB	Willaim G. Bertain

APPENDIX T
RESPONSES TO DETAILED COMMENTS

ABF-1

The EIS/EIR includes most recent available NSO research in its analysis. Further, the final Habitat Conservation Plan has been revised to include an adaptive management approach which will incorporate existing research information and include experimentation as a fundamental element of the strategy.

ABF-2

The wildlife agencies agree with this observation.

ABF-3

The agencies recognize this limitation in the HCP, which also applies to current procedures implemented to avoid take of Northern Spotted Owls associated with individual timber harvest operations. The revised HCP presents an initial approach which utilizes habitat models based upon current practices and incorporates processes to experiment and improve these models. At the scale relevant to a single pair of NSOs this strategy does focus on nesting and roosting habitat. Initially it is assumed that foraging habitat will be relatively more abundant and sufficiently close to older forest.

ABF-4

The Draft EIS/EIR contains extensive analyses of the impacts of the proposed HCP on interior forest.

ABF-5

It is likely that existing procedures have been insufficient to protect every NSO from timber harvest. Protocols surveys may not detect every NSO, surveys may not be adequately implemented and exemption harvesting does not include rigorous procedures for application of the protocol. Existing procedures are believed to be very effective when applied to individual NSO sites but are not fail safe. The effectiveness of current procedures to mitigate cumulative impacts is uncertain as there is no monitoring requirement on private lands. Given these uncertainties, there is no way to make a quantitative comparison

Current protection measures for NSO are documented in Section 3.10 of the Draft EIS/EIR. These measures are compared under the various alternatives.

Under the proposed HCP, management objectives have been established and monitoring will be conducted at an intensity sufficient to determine sufficiency of conservation measures in attaining these objectives. Thus, the effectiveness of HCP measures will be better understood than existing take avoidance procedures.

ABF-6

As stated in the HCP, PALCO has not conducted long-term banding studies on its property. Under current practices most private landowners, like PALCO, collect data to support individual THPs and there is limited motivation to invest in collaborative demographic research to assist in landscape scale conservation planning. The proposed HCP requires monitoring which will be applied adaptively.

ABF-7

The wildlife agencies agree. Habitat classifications using WHR have been revised for the HCP. Based upon monitoring data these classifications may be refined further. Also see response to ABF-3.

ABF-8

Modifications to the strategy have eliminated the specific element referred to by this comment. However, some activity sites will likely be harvested during the first five years and beyond through the same mechanism identified in this comment. Other elements of the HCP include phasing of allowable take, surveys to identify activity sites, activity site habitat retention, demographic monitoring and adaptive management which are designed to accomplish the specified management objectives.

ABF-9

The wildlife agencies agree that simple reliance on large acreages of nesting habitat, of potentially low quality, would be an insufficient strategy. The minimum thresholds for 10% late seral habitat by watershed assessment area, disturbance index restrictions, channel migration zone and riparian management zone silvicultural prescriptions, steep slope harvest restrictions and mass wasting avoidance strategy, along with the MMCAs, will retain substantial high quality nesting habitat on the ownership. Combined with activity site conservation measures, the wildlife agencies expect the overall strategy to be effective in maintaining a viable NSO population.

ABF-10

The wildlife agencies agree. See response to ABF-3.

ABF-11

The wildlife agencies generally agree that long thin corridors of nesting habitat will be insufficient by themselves to sustain NSOs. In this HCP, the late seral habitat retention in Class 1 RMZs will be augmented by CMZs, habitat retention on steep slopes, mass wasting sites, the minimum late seral habitat retention threshold and disturbance index restrictions. Where CMZs and multiple RMZs adjoin or converge, considerable late seral habitat will be retained. In addition, there will be considerable late seral habitat in MMCAs. Habitat retention, monitoring and adaptive management are the site or territory scale measures which will complement the general habitat maintenance component.

ABF-12

See response to ABF-3.

ABF-13

The wildlife agencies believe the NSO strategy has appropriate management objectives, sufficient monitoring requirements and management flexibility to respond to habitat related population declines.

ABF-14

This management objective has been modified to a minimum of 108 activity sites.

ABF-15

See response to comment ABF-9.

ABF-16

The wildlife agencies agree that the worst case scenario described in this comment would pose a risk to maintaining a large population of NSOs on the ownership. Additional activity site monitoring, increased habitat retention for 80 sites and adaptive management elements have been incorporated to manage the identified risk.

ABF-17

The wildlife agencies agree. Additional, rigorous monitoring measures have been agreed to by PALCO, including technical oversight by a scientific advisory panel. Please refer to the NSO conservation plan and comment letter from Sustainable Ecosystems Institute dated November 14, 1998.

ABF-18

The wildlife agencies expect that this HCP will result in significant changes in land management practices for PALCO. Also see responses to comments ABF-9 and 11.

ABF-19

The environmental impacts of the HCP/SYP were evaluated in the Draft EIS/EIR, which incorporated additional scientific literature.

ABF-20

The Final HCP additional mitigation and monitoring measures that they consider necessary to maintain a viable NSO population

ABF-21

The wildlife agencies agree. The Final HCP incorporates monitoring as an essential element of the strategy. Also see response to ABF-17.

ABF-22

The wildlife agencies believe that existing scientific data has been incorporated into this HCP and recognize that uncertainty still exists regarding habitat requirements of the NSO. The strategy therefore incorporates an information based adaptive management approach for long term sustainability of NSOs on the ownership.

ABF-23

See response to ABF-22.

ABF-24

See response to ABF-22.

AG-1

Opinion noted with respect to enforcement. Management objectives have been made explicit. Conservation measures have been articulated in unambiguous language.

AG-2

Comment noted.

AG-3

Compliance, Trend, and Effectiveness Monitoring is a critical component of the Aquatic Operating Conservation Plan. In addition, this plan relies on implementation of management objectives described. If violations to these occur, the agencies have the ability to suspend or revoke company's ITP.

AG-4

Survey procedures have been modified to include at least three surveys after March 1, each separated by at least one week. As observed in this comment, current practices utilized for avoiding take of nesting NSOs require surveys later in the breeding season. The survey strategy proposed in this HCP is appropriate for the management objective of minimizing take.

AG-5

See response to ABF-4 and ABF-14

AG-6

See response to ABF-17 and PC-8

AGS-1

Comment noted. Data were unavailable at the time of publication of the Draft EIS/EIR. The data have been incorporated into the analysis of impacts on the marbled murrelet.

ALA-1

See response to BRC-1 and BRC-2.

ALA-2

Comment noted. Congress and the California legislature have determined that the protection of the Headwaters Grove was in the public interest by appropriating the funds necessary for its purchase.

ALA-3

Under authority of the Endangered Species Act, Section 10(a)1(B), NMFS has the authority to grant PALCO an Incidental Take Permit.

ALA-4

We agree that HCPs and associated ITPs should not be used to degrade habitats and populations of sensitive species over the landscape. However, we do not believe that the HCP program should be used only in limited circumstances. Issuance of ITPs is appropriate so long as the specific issuance criteria of provided under Section 10 of FESA is met. Of particular importance, each HCP must minimize and mitigate take of covered species to the maximum extent practicable and not "appreciably reduce the likelihood of the survival and recovery of the covered species in the wild." The Section 10 process is designed to provide species protection and habitat conservation within the context of non-federal development and land and water use activities while allowing economic development that is compatible with such species protection and habitat conservation. The Section 10 process provides the applicants and FWS and NMFS with an opportunity to plan rationally for multiple species protection on a landscape basis. The FWS and NMFS are committed to a Section 10 program that is able to meet the growing challenges and opportunities of integrating endangered species protection with compatible economic activities and needs.

ALA-5

Section 10 of the ESA requires that, in order for the FWS and NMFS to issue an ITP, the applicant's HCP must, among other things, minimize and mitigate impacts of the proposed taking to the maximum extent practicable. Section 2081 of CESA requires that the impacts of take of state listed species be fully mitigated. Based on public comments and FESA and CESA issuance criteria, the wildlife agencies have added

minimization and mitigation measures to reduce potential adverse effects on species proposed for coverage under the ITPs. These additional minimization and mitigation measures would further reduce the impacts described in the Draft EIS/EIR. Details of this additional mitigation are presented in Appendix P.

The FWS, NMFS and CDFG believe that the final proposed HCP does fully mitigate for impacts to covered species from the proposed level of incidental take. For example, under the final HCP, the general strategy for northern spotted owls and marbled murrelets is to allow some harvest of generally lower quality owl and murrelet habitat while protecting habitat of higher quality and adequate quantity for these species across the PALCO ownership to maintain viable populations of owls and murrelets on those lands for 50 years. The FWS and NMFS position concerning the adequacy of mitigation for the covered species under the ITPs will be explained in detail in the agencies' section 10 findings document.

ALA-6

The HCP and ITP have considered and reflect, among other things, baseline conditions, conservation and management measures to minimize and mitigate the impacts of take, and the needs of covered species and their habitats.

ALA-7

See response to SCE-9.

ALA-8

Comment noted. Nothing in the process of issuing an ITP abrogates the duty of FWS and NMFS to enforce the ESA. Permit enforcement will be carried out as a matter of programmatic responsibility and through the use of compliance monitoring, site inspection, remote sensing and aerial imagery, and other techniques. Violations of the ITPs may result in suspension or revocation of the permits. Nothing in the proposed HCP or IA prevents interested members of the public from notifying FWS and NMFS of compliance issues. The FWS and NMFS shall closely monitor PALCO's implementation of the HCP and compliance with the Federal ITPs and shall provide technical assistance to PALCO regarding implementation of the HCP through the duration of the federal ITPs. See also responses to JBBDS-1 and BRC-1 and 2.

ALA-9

Comment noted. Safe harbor assurances do not apply here. PALCO has submitted an application for an ITP, not a Safe Harbor agreement.

ALA-10

See responses to ALA-5 and ALA-14. The Service agrees that HCP planning would be facilitated if recovery plans were in place for the listed Covered Species; however, the existence of a recovery plan is not a prerequisite for species coverage under an ITP. Under Section 10, FWS and NMFS may not issue an ITP if doing so would appreciably reduce the likelihood of the survival and recovery of the species in the wild. In the agencies' Section 7 biological opinion on the proposed issuance of the ITPs to PALCO, a detailed analysis of the effects of the ITPs on the survival and recovery of each covered species will be provided. While Section 10 does not require an HCP to provide for the recovery of a species, FWS believes that the proposed HCP is generally consistent with many of the objectives of the Final Recovery Plan for the marbled murrelet and is consistent with the recovery objectives stated in the Draft Recovery Plan for the northern spotted owl and the final recovery plans for the peregrine falcons and the bald eagle. There is not yet a recovery plan in place for the coho salmon and other federally listed species. However, the HCP prescriptions for coho and

other aquatic covered species will achieve over time properly functioning aquatic habitat conditions which are necessary for the long term survival and recovery of these species.

ALA-11

Comment noted. See responses to SCE-127, SCE-129 and SCE-39. While the Services agree that the obligations to designate critical habitat to the maximum extent prudent and determinable under Section 4 of the ESA and to list a species when the five factors identified in Section 4 are met are separate and distinct from the Section 10 HCP process, these regulatory actions may serve overlapping purposes. An approved HCP may satisfy the special management needs of critical habitat designated under Section 4 or provide adequate regulatory mechanisms for protecting a species that would otherwise warrant listing under the ESA.

ALA-12

HCP should utilize alternate land management practices, etc. Please also see response to ELF-4. The commercial timberland at issue, for which the HCP planning and management is proposed, is classified as Timber Production Zone (TPZ) under the California Timber Productivity Act of 1972 (TPA) for timber growth and compatible uses. (Govt. Code Sections 51115.5, et seq.). Similarly, the California Forest Practice Act (Public Resources Code Sections 4514 et seq.) requires owners of commercial timber lands to achieve maximum sustained production of high quality timber products while giving total consideration to values relating to recreation, watersheds, wildlife, range and forage, fisheries, regional economic vitality, employment and aesthetic enjoyment. The deferred yield tax structure established by the TPA, as well the Rules of the Board of Forestry that govern sustained yield planning, also militate against use of commercial timberland for other purposes. The harvest of mushrooms, fee-based recreation, provision of ecosystem-based services, and the sequestration of atmospheric carbon—examples of alternative land uses offered by the commentor—would not meet these income/return expectations nor the TPZ zoning clarification. Moreover, with the mitigation measures provided in the final HCP, these alternatives are not necessary to avoid or eliminate potential significant adverse impacts to the Covered Species.

ALA-13

HCPs and EIS/EIRs are not financial cost-benefit analyses and do not have to address these issues in this manner.

ALA-14

Comment noted. The wildlife agencies agree that the HCP must fully minimize and mitigate impacts to all listed and unlisted species covered in the ITP. Section 10 of the ESA requires that in order for FWS and NMFS to issue and ITP, an applicant's HCP must minimize and mitigate impacts of the proposed taking to the maximum extent practicable. Under Section 2081 of CESA, CDFG must determine that the impacts of take of state listed covered species will be fully mitigated in order to issue an ITP.

The wildlife agencies agree with the general mitigation suggestions for marbled murrelets included in this comment. Minimization and mitigation measures for murrelets under the HCP are based on, among other things, setting aside the highest quality and largest stands of old growth murrelet habitat owned by PALCO in Marbled Murrelet Conservation Areas (MMCAs) for the 50 year term of the ITP along with adequate buffers around these MMCAs and daily and seasonal restrictions on harvest activities to minimize take of marbled murrelets.

ALA-15

Old growth will be preserved in a variety of ways under the proposed HCP, including inside MMCAs, RMZs, and the proposed Headwaters Reserve. Refer to Tables 3.9-1 and 3.9-2 in the Final EIS/EIR for exact acreage of old-growth in the Project Area.

ALA-15

The agencies disagree that lands protected for a period of 50 years should not be considered protected. The direct logical implication such an approach is that there is no alternative to environmental protection other than having all private land purchased by the federal, state, and local governments.

ALA-16

The following standards in the Final HCP apply to selection-cut buffers around MMCAs and public parks: (1) Tree diameter distribution guides as in the Draft HCP, Volume 1, Table 17, page 65 for a basal area of 240 square feet per acre. (2) Buffer width is 300 feet. The guidelines are not intended to provide old-growth habitat, but rather to protect and maintain the existing habitats in parks and MMCAs.

ALA-16

The primary objective of buffers adjacent to marbled murrelet habitat is to reduce the potential access by avian predators and ameliorate climatic effects. The specified prescription will provide a closed-canopy forested buffer, even after harvest entries, which are limited to every twenty years. The primary objective of stream buffers is to filter sediment, and provide shade canopy and a source of large woody debris. The specified prescription will meet the needs for covered species.

ALA-17

The language in the Draft HCP that led to this comment has been clarified in the Final HCP.

ALA-18

CDF disagrees that the mitigations are inadequate. The MMCAs, the riparian buffer zones for Class I and II waters, snag retention standards, and green leave tree standards will mitigate for any loss of late-successional forest stands on the property. Clear-cut size limits and spacing requirements will mitigate other impacts of clearcutting. Also see the response to IFR-5.

ALA-19

Regarding impacts to marbled murrelet populations, see response to comment HC-1.

ALA-20

Regarding the IA provisions, see response to comment ALA-122.

ALA-21

Regarding effects of activities within MMCAs, see response to comment HC-12.

ALA-22

Regarding logging of murrelet habitat during the nesting season, see response to comment KN-5.3

ALA-23

This HCP depends upon the integration of many elements for species conservation. While gross scale landscape trends are one relevant indicator for a successful NSO strategy, this HCP depends also on activity site scale conservation measures, monitoring and adaptive management which may not have been adequately considered in this comment. Also see ABF-9.

ALA-24

The NSO conservation strategy is a complex and integrated approach. The scenario described in this comment assumes that it would be possible to aggressively harvest every acre not explicitly protected without consequence. The required monitoring of NSO activity sites and NSO demographics would measure adverse effects of such harvest and prompt adaptive management responses described in the HCP. Also see ABF-9, ABF-11 and ABF

ALA-25

If any tree removal oprations are agreed to by FWS and DFG within the MMCA's they would only be those operations which would enhance the recruitment of late seral forest. For example, under certain circumstances, pre-commercial thinning or selection can provide space for unharvested trees to develop deeper and wider canopies. This action would provide relatively more effective buffers for old growth habitat. Assuming any such operation was conducted outside of the NSO breeding season, the wildlife agencies do not agree that this type of activity would have adverse impacts on NSOs.

ALA-26

The wildlife agencies agree that the usual northcoast wet winter conditions are likely to continue, and that there are other "take" permits in development. The wildlife agencies do not agree with the conclusion that these two factors "will probably exacerbate a much more significant decline in owl populations than has currently been documented".

ALA-27

The HCP/SYP does not include the goal of protecting species that are the subject of the incidental take permit to the level that "take" would be avoided, which is what the referenced stream and riparian protection measures are intended to afford. Consequently, the recommendation that the RMZ widths be expanded, and harvest be prohibited within the equivalent of two and one site-potential tree heights away from Class I watercourses and from Class II and III watercourses, respectively, is mismatched to the objectives of the plan.

An equivalent to this recommended alternative was evaluated under the discussion of Alternative 3 (Property-wide Selective Harvest) in the Draft PALCO EIS/EIR in Section 2.6. Also refer to discussions of RMZs in Sections 3.7.4 and 3.7.4.3 of the same document and the response to IFR-11.

ALA-28

The concerns expressed regarding Class II and Class III watercourse protection will be addressed in the Final SYP/HCP and the Final EIS/EIR. These documents will present increased watercourse protection over what was presented in the Draft documents. Class II watercourse riparian management zones (RMZs) will include 30-foot "no-harvest" bands within at least 130-foot-wide RMZs. The Class II watercourse RMZs will extend on steep slopes (greater than 50 %) up to 400 feet from the watercourse. Beyond the no-harvest band within the RMZ, no more than 40 percent of the basal area can be harvested and no less than 240 square feet basal area per acre must be retained in a prescribed diameter class distribution during each harvest entry.

Harvest entries can occur not more than once every 20 years. On moderate slopes, an additional 40-foot-wide outer sediment filtration band will be established within which downed wood will be retained and fire ignition will be prohibited. Further restrictions will apply to RMZs located in mass wasting areas of concern, where no harvest would be allowed prior to watershed analysis.

Regarding Class III watercourses, the Final SYP/HCP and the Final EIS/EIR will include 30-foot-wide "no-harvest" bands and additional up to 100-foot-wide sediment filtration bands. On 2175 acres adjacent to Class III waters, the no-harvest buffer will be 10 feet wide but greater than 10 feet from the watercourse, no more than one-third of the basal area and no more than one-third of the volume of conifers will be harvested in any harvest entry. Within the sediment filtration band, downed wood, small conifers, trees damaged during yarding and other elements will be retained and fire ignition and sanitation salvage and exemption harvesting will be prohibited. Further restrictions will apply to Class III RMZs located in mass wasting areas of concern, where no harvest would be allowed prior to watershed analysis. In addition, much of the extent of Class III watercourses will occur in the RMZs of Class I and Class II watercourses, where they will receive additional protection. These measures, combined with those that restrict when, where and how road construction, reconstruction and use will occur, as well as constraints on rates of harvest through application of the disturbance index (as presented in the final documents) collectively will address the concerns regarding erosion and sediment effects.

The statement that lack of forest cover would increase evapotranspiration rates and contribute to a lowering of ground water and soil moisture is not supported. Rates more likely actually decrease with removal of trees and result in temporary raising of groundwater table.

The comment refers to Class III watercourses as providing "important primary habitat for a number of amphibians and other species." This is not correct, as by definition, Class III watercourses have "no aquatic life present" (refer to Title 14, California Code of Regulations, § 916.5, Table 1).

ALA-29

If potentially usable habitat is present, the presence of coho salmon is assumed in unsurveyed areas. Further, as part of the road stormproofing effort, culverts determined to be barriers to fish passage will be upgraded to provide passage.

ALA-30

Protection measures for upland seeps and springs have been added to the Final HCP.

ALA-31

Livestock grazing is not a covered activity under the Final HCP.

ALA-32

Due to a lack of information, assessment of impacts, lack of mitigation, and lack of commitment to mitigation, the fish hatchery will not be covered under the HCP incidental take permit. The fish hatchery will be included as part of the assessment of the state hatcheries and hatchery program.

ALA-33

Commentor does not offer support for arguments regarding impact to species. The late seral prescriptions for RMZs will provide retention of large trees and a high degree of canopy closure. Regarding IA provisions, see response to comment ALA-122. Conversion of hardwood types to conifers will occur on a relatively small number of acres and in sites where conifers were the original vegetative cover.

ALA-34

CDF disagrees. In response to a petition to the Fish and Game Commission to list the southern torrent salamander, the DFG made a finding (among others) that the southern torrent salamander is protected under California Forest Practice Rules for Class II watercourses if properly implemented (J. Brode, DFG, Report to the Fish and Game Commission: Status Review of the Southern Torrent Salamander [*Rhyacotriton variegatus*] in California, November 1995). The Class II provisions in the HCP combined with the provisions of AB 1986 will far exceed the standard Forest Practice Rules. This would also apply to the tailed frog, the northern red-legged frog, and the foothill yellow-legged frog.

ALA-35

Misnumbered. There is no comment ALA-35

ALA-36

See the response to ALA-31.

ALA-37

The various unlisted species are discussed in more detail in the Draft EIS/EIR. In addition, cumulative effects, including other HCPs and actions (see sections 3.2, 3.4.3.10, and 3.6.6 for background information), are described in more detail in the Draft EIS/EIR. In addition, see responses to GEC-18. The effects on the red-legged frog are also discussed in the Draft EIS/EIR.

ALA-38

Hawks have been removed from the list of covered species.

ALA-39

All species listed in this comment, except snowy plover, have been deleted from coverage under the Final HCP. Snowy plovers nest primarily in dune areas, but in northwestern California also nest inland on gravel bars along the lower reaches of larger rivers and streams. We are aware of their local distribution and have provisions for monitoring and mitigation of PALCO's gravel extraction operations in the Final HCP.

ALA-40

All species listed in this comment have been deleted from coverage under the Final HCP.

ALA-41

Red tree vole is treated as a special case the under species-level conservation plan in the Final HCP. Several factors have a bearing on the provisions of this plan. (1) Red tree voles in northern California have recently been proposed as a separate species (*Arborimus pomo*). Much of the existing research is on the western Oregon species (*A. longicatus*) and must be used carefully in making inferences about *A. pomo*. Researchers consider much of the life history information about *A. longicatus* to be applicable to *A. pomo* (e.g., morphology, eating and nesting habits, ontogeny) while many other elements are open to question (e.g., dispersal, demography, food web position). (2) We have reliable anecdotal information (CDF&G) that voles can be found in stands as young as thirty years in the redwood region, but no information to infer whether this is "normal" habitat selection or an artifact of other population dynamics. (3) The one telemetry study conducted on dispersal distances of four juvenile *A. longicatus,* shows a maximum dispersal distance of approximately one-quarter mile. As a result of the limited information on this species, the Final HCP provides for a five-year monitoring program (in years 2-7 of the plan) built around seral stage distributions

and habitat selection inquiries. If at the end of that program, the agencies and the company cannot reach consensus on future direction, the agencies may unilaterally terminate coverage under incidental take permit for this species. No other species covered under the incidental take permit has this type of provision.

ALA-42

The Humboldt marten has been deleted from coverage under the Final HCP.

ALA-43

See the section "Habitat Diversity and Structural Components" in the Final HCP. Population-level and dispersal information on the fisher is very limited but four habitat features known to be associated with this species are accounted for in this section: snags, down logs, live cull conifers, and large hardwoods.

ALA-44

Comment noted. The commentor does not provide sufficient detail to enable a substantive response.

ALA-45

None of the species listed in this comment are covered under the HCP.

ALA-47

CDF notes the comment's definition of "practicable," but disagrees with it. CDF sees "practicable" primarily as an economic threshold. CDF disagrees that the clearcutting rotation is 40 years. The shortest rotation PALCO proposes to use in any of its silvicultural regimes is 50 years. See responses to IFR-4, IFR-5, and ALA-18.

The FWS and NMFS guidance with respect to this issue is found on page 7-3 of the Habitat Conservation Planning Handbook, addressing the section 10 issuance criteria concerning the requirement that an applicant develop an HCP that will, to the maximum extent practicable, minimize and mitigate the impacts of the proposed taking. The Handbook says “This finding typically requires consideration of two factors: adequacy of the minimization and mitigation program, and whether it is the maximum that can be practically implemented by the applicant. To the extent maximum [sic]that the minimization and mitigation program can be demonstrated to provide substantial benefits to the species, less emphasis can be placed on the second factor. However, particularly where the adequacy of the mitigation is a close call, the record must contain some basis to conclude that the proposed program is the maximum that can be reasonably required by the applicant. This may require weighing the costs of implementing additional mitigation, benefits and costs of implementing additional mitigation, the amount of mitigation provided by other applicants in similar situations, and the abilities of that particular applicant. Analysis of the alternatives that would require additional mitigation in the HCP and the NEPA analysis, including the costs to the applicant is often essential in helping the Services make the required finding.”

While the Handbook would not rule out the “lack of available technology” approach noted in the comment, it is clear that consideration of the applicant’s cost of implementing HCP conservation measures is envisioned as a factor to be considered by the FWS and NMFS when making the decision regarding this issuance criteria.

Although the HCP does not specify implementation of alternative forest practices as suggested in this comment, the FWS and NMFS believe that the HCP provides substantial conservation benefits for covered species in the form of habitat reserve areas, impact minimization measures, and a variety of other conservation measures. As noted above, the FWS and NMFS position concerning the adequacy of mitigation

for each species included on the ITP will be explained in detail in the agencies' section 10 findings document. See also response to SCE-9.

ALA-48

The FWS and NMFS believe that the HCP provides substantial conservation benefits for covered species (many of which are considered sensitive) in the form of habitat reserve areas, impact minimization measures, and a variety of other conservation measures. The agencies' position concerning the adequacy of mitigation for each species included on the ITP will be explained in detail in the agencies' section 10 findings document.

Historically, mitigation requirements were often determined on a project-by-project basis because no legislation or regulations establish specific mitigation requirements for impacts to biological resources. Mitigation has typically been approached using, in descending order of priority, avoidance of impacts on-site, minimization of impacts on-site, and off-site mitigation (i.e., compensation for unavoidable impacts). As a result, mitigation for biological impacts often met short-term goals, but failed to create interconnected habitat areas that would sustain species over the long term.

Principles of habitat conservation planning require a change from an isolated review of timber harvest plans to a review of plans in the context of the HCP's planning area. Using such an approach, the evaluation of a project's impacts will be analyzed based on the on-site biological resources, potential on-site impacts, and how the harvest impacts and mitigation would affect conservation of the regional ecosystem.

The HCP includes mitigation approaches that recognize the nexus and rough proportionality between a harvest/project's impacts and the long-term sustainability of the redwood forest ecosystem. The mitigation strategies are based on a comprehensive approach that conserves species and their habitat in a biologically justifiable manner.

Surveys to determine species presence will not be included for all covered species in the final HCP monitoring program. See response to SCE-97.

ALA-49

Whether or not an HCP must benefit a species is similar to its relationship to recovery objectives. No explicit provision of the ESA or its implementing regulations requires that an HCP must result in a net benefit to the species (HCP Handbook, page 3-21). See response to comments ALA-10 and ALA-50 for an additional explanation on this topic.

ALA-50

Comment noted. The FWS and NMFS are not required to find that the proposed HCP will recover all of the listed Covered Species, but rather that the impacts of covered activities have been minimized and mitigated and will not appreciably reduce the likelihood of the survival and recovery of the covered species in the wild. The agencies will use the best scientific and commercial data available to determine whether this finding can be made through preparation of a biological opinion on the proposed permit issuance.

The HCP attempts to insure the overall goals of ecosystem health and long term survival of species with compatible timber operations by PALCO. While recovery of a listed species is not a statutory requirement of the conservation planning process it is an important consideration in every conservation planning effort. The wildlife agencies encourage applicants to develop HCPs that are consistent with or contribute to recovery plan objectives. The wildlife agencies , however, cannot mandate that an HCP recover all species.

Rather the wildlife agencies must ensure that HCPs must allow for recovery. See also response to CTETAL-1.

Regarding impacts to marbled murrelets, see response to comment HC-1. Regarding consistency with the Recovery Plan, see response to HC-15.3

The wildlife agencies expect that "take" of NSOs will be minimized and fully mitigated pursuant to within the management objectives described in the HCP. With the conservation measures, monitoring and adaptive management procedures described in the HCP, the wildlife agencies believe there are sufficient safeguards.

ALA-51

The criteria for ITP issuance are found in section 10(a)(2)(B) of the ESA, and they apply regardless of HCP size. However, in order for an applicant's HCP to meet criteria 10(a)(2)(B)(ii) (i.e., the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking), and 10(a)(2)(B)(iv) (i.e., the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild), the HCP conservation measures may very well have to provide substantial habitat conservation measures, including habitat restoration. The FWS and NMFS are unaware that any of the proposed covered species in the Final HCP have been extirpated from the HCP planning area. The FWS and NMFS disagree that the HCP does not provide for restoration of habitat, and note, as one example, that the aquatic and riparian habitat conservation measures clearly provide habitat restoration for covered fish and amphibian species.

ALA-52

Comment noted. See responses to TNL-64, SCE-63 and SCE 68-SCE-73.

ALA-53

Comment noted. All of the specific minimization and mitigation measures required under the HCP are detailed in the HCP's Operating Conservation Program attached as Appendix P to the Final EIS/EIR.

ALA-54

Comment noted. See response to SCE-75

ALA-55

Under Section 10 of the ESA, PALCO must minimize and mitigate the impacts of the proposed taking. The final proposed HCP provides for mitigation for the impacts of take for each of the covered species over the 50 year term of the permit. There is no regulatory requirement that mitigation be fully implemented prior to allowing take of the Covered Species. Assuming it is appropriate from a biological perspective, allowing take in advance of full mitigation is permissible so long as such mitigation is legally assured. Under the federal and state ITPs full mitigation for take will occur over the 50 year permit term. Further, sections 8.4 and 8.5 of the IA provide that in the event of early permit termination, PALCO's obligations under the IA and HCP will continue until the wildlife agencies determine that all take of the Covered Species, both listed and unlisted, that occurred under the federal and state ITPs has been fully mitigated. These sections will ensure that PALCO will be obligated to fully mitigate for impacts that result from take of the Covered Species that occurred prior to termination.

ALA-56

The HCP provides substantial on-site mitigation through protection of the MMCAs, aquatic and riparian habitat conservation commitments, northern spotted owl mitigation measures, and minimization and mitigation measures for the other Covered Species. See response to PL-6.

ALA-57

Under Section 10 of the ESA, the HCP must minimize and mitigate the impacts of proposed take over the permit term. Although "permanent" mitigation is not proposed, the 'wildlife agencies believe that the final HCP will provide mitigation for take over the 50 year permit term. The HCP's minimization and mitigation measures for marbled murrelets are a good example. Under the HCP some fragmented lower quality residual old growth habitat would be harvested. However, the HCP protects the vast majority of large, high-quality old growth forest stands and adjacent areas that will contribute over the life of the permit to improved marbled murrelet habitat conditions.

ALA-58

The aquatic conservation strategy in the Final HCP\SYP was designed on a habitat basis, not necessarily on the basis of species presence. Therefore, aquatic habitat that is not continuously used by the species is still protected. Similarly, some strategies for terrestrial species are habitat based, especially for those species whose nesting or denning sites are very difficult to locate. In these cases, provision of habitat components on a landscape basis should allow for long-term survival of the species, even if individuals are impacted by management activities.

ALA-59

See our responses to comments HHW-1 through HHW-52. Also see aquatic measures in the Final HCP.

ALA-60

Even if we had site-specific data we would not be able to materialize intermediate and advanced decay classes where they are lacking. Tree mortality rates vary among stands; decay class distributions vary among sites; decomposition rates vary among tree species and moisture and temperature conditions (for decomposition) vary among sites. Consequently, the only factor that can be managed with any reliability (or repeatability) is recruitment.

ALA-61

See response to ALA-15.

ALA-62

We agree in principle but disagree with your conclusions. Connectivity was a major consideration in the species-level assessments, mitigation measures and monitoring programs; and is reflected in the HCP.

ALA-63

Comment noted. See also response to ALA-57.

ALA-64

We disagree, but largely on conceptual grounds. Instead, we consider population persistence a more appropriate goal. As we reviewed the mathematical theory behind source-sink dynamics (Pulliam, H.R. 1988. *The American Naturalist* 132:652-661) we find nothing inherently deleterious about "sink" sub-populations (those having negative net recruitment). Theoretically they can arise from subtle variations in habitat quality, from population structure (e.g., harem-breeding), or from habitat modification. Sink sub-populations can potentially recolonize habitats and support the overall population when the "source" sub-populations (positive net recruitment) are depleted due to events such as weather events, disease or overharvest.

ALA-65

The Headwaters grove is not a mitigation bank. Mitigation banks refer to habitats that are "banked", i.e., protected through conservation easement or other means. These lands are then used as needed for mitigation purposes. The Headwaters grove is being acquired by the federal and state governments to provide for its permanent protection in public ownership. See also PL-6.

ALA-66

Each of the Covered Species is treated in the HCP as if listed. See response to SCE-29.

ALA-67

The FWS and NMFS agree that the HCP should comply with all applicable policies, goals and standards for each species covered under the plan. The commentor does not provide any support for the conclusion that the HCP does not meet this criteria.

ALA-68

The FWS and NMFS guidance with respect to the issue of selecting species for coverage in HCPs is found on page 3-7 of the Habitat Conservation Planning Handbook. The agencies followed this guidance when providing technical advice to PALCO during development of the draft HCP. As noted in the Handbook, ultimately the decision of which species to address in the HCP lies with the applicant. The FWS and NMFS have evaluated the species not covered in the HCP to the extent required by law

ALA-69

The wildlife agencies disagree. The overall multi-species conservation strategy of the final HCP is designed to provide sufficient protection of all habitat types found on PALCO's land to meet FESA and CESA permit issuance criteria. The final proposed HCP incorporates additional minimization and mitigation measures to improve habitat protections for the Covered Species. A complete description of the HCP's Operating Conservation Program is contained in Appendix P to the Final EIS/EIR.

The draft HCP describes the habitat needs of many species with special needs. Based on these descriptions, the draft HCP then assessed the conservation needs of these species. Many of these species could well be described as indicator or umbrella species, and therefore, it is reasonable to assume that providing habitat for these species will provide habitat for many other species sensitive to habitat degradation.

ALA-70

Comment noted. The wildlife agencies disagree. The commentor does not provide support for the conclusion stated.

ALA-71

The wildlife agencies expect that maintenance of at least 108 activity sites, of which at least 80% are occupied by pairs maintaining a reproductive rate of at least 0.61 fledged young/pair/year logically supports survival of the species and does not create an appreciable reduction in the likelihood of recovery.

ALA-72

Diversity is only one of many types of data and information used in making a decision. Diversity analysis by every available method is unnecessary to disclose effects and make a reasoned decision.

ALA-73

The full range of potential effects are considered with respect to the mentioned plans in the EIS/EIR and in the Services' Biological Opinion.

ALA-74

While we agree that the CWHR classification system is limited, the comment does not offer an alternative solution. We do not know of a better classification system. We disagree that PALCO will be converting a significant amount of redwood forest stands to Douglas-fir (see response JLD-5).

Regarding PALCO's use of literature in its HCP, the HCP is the company's document. The EIS/EIR is the agency's document. The agencies have used appropriate available literature that applies to the region. This literature is cited in Chapter 4 of the EIS/EIR.

ALA-75

Regarding PALCO's non-listed wildlife survey methods that may have been biased, the monitoring plan will incorporate methods that are scientifically and statistically valid and survey designs in the monitoring program will be reviewed in advance. The considerations of effects in the Draft EIS/EIR consider the type and quality of available information (see page 3-2 in the Draft EIS/EIR).

ALA-76

The comment provides no documentation that timber harvest of the last decade represents a liquidation of timber inventory. A full range of alternatives is discussed and analyzed in the Draft EIS/EIR.

ALA-77

PALCO's projections are based upon an even-flow, regulated forest model.

Regulations do not require PALCO to use a particular interest rate for projecting forest yields and income over time. They chose to use 6 percent, which is commonly used in forestry.

Prior to 1986, PALCO managed its land on a less intensive basis. Since 1986, PALCO has implemented a more intensive approach. The EIS analyzes a range of alternatives that includes less intensive management strategies and more intensive strategies than were practiced prior to 1986. Also see response to IFR-4

ALA-78

It is not necessary to survey for all species to establish an adequate habitat baseline for completion of the Final HCP. The agencies believe that the baseline was adequate for establishment of mitigation measures and adaptive management processes to ensure long-term survival of the species.

ALA-79

The comment does not identify any species that is not addressed in the Draft EIS/EIR.

ALA-79

To the extent that it is known, the habitat relationship information is embodied in the literature cited for each species in the HCP, EIS/EIR.

ALA-80

The appropriate place for "jeopardy" findings is the Biological Opinion under Section 7 of the Endangered Species Act of 1973. A Biological Opinion is being prepared for this project.

ALA-81

In most cases, information is not available to specify habitat needs at the level of detail requested by the commentor. This does not preclude development of meaningful mitigation measures based on existing knowledge.

ALA-82

Comment noted. The HCP includes a detailed description of specific conservation and management measures that will govern PALCO's timber harvest operations for the life of the ITPs. Those measures that collectively comprise the HCP's Operating Conservation Program have been compiled into Appendix P of the Final HCP/SYP and EIS/EIR. Compliance with all such measures is a term and condition of the ITPs and as such is fully enforceable through the ITPs and IA. See § 4 of the IA.

ALA-83

Detailed species-level assessments of the effects of activities and mitigations are included in the Biological Opinion. Also see our responses to ALA-66, ALA-68, ELF-8, EPA-5 and EPA-36-through-77. All the activities listed in this comment are either addressed in the HCP, or are non-covered activities (e.g., residential development) requiring separate federal, state or local permits and separate compliance with federal and state endangered species laws and regulations.

ALA-84

This has been done to the extent possible. However, there are some gaps in the base of available information. For example, formal habitat association models have only been developed for two of the five aquatic amphibians and reptiles listed in the HCP. The remaining three have abundant literature bases, but these species have broader ranges encompassing forested and non-forest ecosystems. To address information gaps, the HCP incorporates an adaptive management approach, such as you suggest in sections G and H of your submittal that will enable modifications to mitigation measures in response to new information. See our responses to ALA-101 through ALA-111.

ALA-85

See response to ALA-84.

ALA-86

Critical habitat has been designated for the marbled murrelet on portions of PALCO's property. See 61 Fed. Reg. 26,225 (May 24, 1996). Critical habitat has been proposed for the coho salmon along Class I and Class II streams on the company's ownership. See 63 Fed. Reg. 23,710 (April 30, 1998).

The HCP's effects on marbled murrelet critical habitat and proposed coho critical habitat will be assessed in the Section 7 consultation on the Federal ITPs. If the HCP would result in adverse modification of critical habitat, the ITPs would not be issued. However, subject to such review, the USFWS believes that the management measures included in the final proposed HCP will adequately protect the marbled murrelet and allow for its recovery. See also response to SCE-127.

ALA-87

Additional mitigation measures necessary for the incidental take permits are addressed in the EIS/EIR and HCP/SYP. Also see responses to CAG-1 and NADCE-1.

ALA-88

Regarding effects of activities in MMCAs, see response to response to comment HC-12. Regarding the IA provisions, see response to comment ALA-122.

ALA-89

The HCP does identify measurable and enforceable biological goals. They include the following: 1) maintaining a mix of seral and vegetation types; 2) retaining and recruiting structural components of wildlife and aquatic habitat such as snags and downed trees; 3) biological monitoring; 4) maintaining the value of currently suitable marbled murrelet nesting habitat, recruiting suitable murrelet nesting habitat and buffering nesting habitat within the MMCAs; and 5) various habitat condition goals for stream and riparian ecosystems. A detailed monitoring framework has been added to the HCP's Operating Conservation Program as described in the monitoring sections of the individual conservation plans for the covered species which are detailed at Section F of the HCP (Appendix P to the EIS/EIR) to evaluate the effectiveness of the HCP's conservation and management measures and the company's compliance with the HCP.

ALA-90

Changed circumstances are discussed in Section 3.20 of the Draft EIS/EIR, and additional detail has been added to the Final EIS/EIR. In addition, the stochastic nature of natural events such as floods and windstorms was considered in determining the environmental baseline and was implicitly considered in the effects analysis in the Draft EIS/EIR.

ALA-91

See response to ALA-85. Also, we agree with your point on considering relationships with populations outside the plan area. This point is especially important with highly mobile dispersers like marbled murrelet and northern spotted owl and has already been considered for those species.

ALA-92

The comment does not indicate anything specific that was not discussed in the Draft EIS/EIR.

ALA-93

Section 3.10 of the Final EIS/EIR presents detailed discussions on priority habitats of species proposed for coverage under the ITP. Also, see the HCP (II-K and II-L) for discussion of PALCO's biodiversity sampling program and the logic behind associating vertebrate species guilds with broad seral stage categories.

ALA-94

Although PALCO's species survey data do not fit the guild model well, they do provide a general and unbiased source of information about the communities on PALCO's land. This guild information did not apply to mitigation development in the HCP or to effects on species proposed for coverage. The comment does not supply information on alternative survey or modeling techniques. However, see the response to ALA-75.

Section 3.10 of the Draft EIS/EIR presents detailed discussions of all considered species and associated habitat needs.

ALA-95

These species are addressed individually in the Draft EIS/EIR in sections 3.8 and 3.10.

ALA-96

Cumulative effects are addressed in each section of Chapter 3 of the Draft EIS/EIR. With respect to other plans, see response to ALA-73.

ALA-97

See response to ALA-73 and ALA-96.

ALA-98

Available information was discussed on page 3-2 of the Draft EIS/EIR.

ALA-99

The FESA does not require the preparation and approval of recovery plans before the FWS issues an incidental take permit. Recovery plans are beneficial to the development of HCPs, and recovery plans for the marbled murrelet and the northern spotted owl were used in the development of this HCP. However, recovery plans for other covered species were not available to aid in the development of the Headwaters HCP. However, the applicants and the FWS and NMFS have had access to a wealth of scientific information about the conservation needs of the forest and many of the obligate species to assist in developing the HCP. As stated in the HCP Handbook (page 3-21), in cases where a recovery plan is not available, the FWS and NMFS must use other available biological information and their best judgment to encourage the development of HCPs that would aid in a species' recovery.

Designation of critical habitat is based on a number of factors that include threats to the subject habitat and habitat management needs. Habitats protected under an HCP would likely be subject to a more protective management regime than other lands and might be excluded from designation on that basis.

See also response to SCE-127 and SCE-129.

ALA-100

Since the agencies consider the mitigation provided by the Final HCP to be adequate, the indicated suggestions do not apply. In addition, see response to ALA-13.

ALA-101

The preliminary monitoring plan is discussed in section 2.9 of the Draft EIS/EIR. The final monitoring plan is contained in the Final EIS/EIR. quantitative research goals are contained in the Final EIS/EIR, however, detailed population estimates for marbled murrelets are not considered practical.

ALA-102

See response to ALA-101. In addition, watershed analysis will be revisited every 5 years; consequently, watershed analysis-related monitoring will not be one time.

ALA-103

See response to ALA-101.

ALA-104

The monitoring plan in the Final HCP provides for a third-party onsite HCP Monitor who monitors the company's compliance with the HCP and carries out HCP effectiveness monitoring tasks on behalf of the wildlife agencies. Verification is always sound policy. However, the type of verification should, and will, depend on the issues raised in the reports by the HCP Monitor. Further, field inspections are not always the most efficient means to accomplish the task.

ALA-105

We disagree. See the Marbled Murrelet Conservation Program, Part F of Appendix P of the Final HCP.

ALA-106

All monitoring records submitted to the agencies by PALCO would be agency records and as such available to the public in accordance with the federal Freedom of Information Act and the California Public Records Act.

ALA-107

We disagree. Practices can be revisited and modified, as needed, through the watershed analysis processes.

ALA-108

We disagree. See the monitoring elements in the Final HCP.

ALA-109

We agree in part. The use of the term "... well-defined, up-front mitigation" implies that the details of a complex system are well-understood. On the other hand, the impetus for adaptive management is some degree of uncertainty and/or absence of relevant information about the system. Limits on scale are not the only criteria that distinguish a legitimate experiment from "management-disguised-as-an-experiment"; for example, controls and replication, the latter of which can multiply the scale of an experiment. Adaptive management is not always driven by experiment, but is any management system modified based on new information.

ALA-109

In some cases, lack of information on species' presence and habitat needs requires that the emphasis be placed on data gathering and adaptive management rather than on specified up-front mitigation.

ALA-110

The Draft EIS/EIR discusses the plan's various goals while the implementation agreement identifies the detailed agreements. With respect to the no-surprises policy, see response to ALA-114 and ALA-115.

ALA-111

Pursuant to watershed analysis, PALCO can be required to provide additional mitigation, within the limits established in the HCP (e.g., 170' maximum no-cut buffer on Class I streams). The disturbance index in the HCP's Operating Conservation Program has been modified and will now require PALCO to stop certain management activities if the index threshold (20%) is exceeded. The HCP now also includes an effectiveness

monitoring framework to determine whether prescriptions are producing the expected improvements in aquatic habitat qualities. Effectiveness studies from this framework will provide most of the impetus for the HCP's adaptive management component.

ALA-112

The section of the HCP addressing changed circumstances was intended to comply with the Services' final Habitat Conservation Plan Assurances ("No Surprises") Rule, which was published on February 23, 1998 (63 Fed.Reg. 8859). In response to comments, the Services disagreed that HCPs must address all hypothetical future events, no matter how remote the probability that they may occur. The Services believe that an HCP should only address changes in circumstances that are reasonably foreseeable. The Services have defined this to mean changes in circumstances that affect a species or geographic area covered by a conservation plan that can be reasonably anticipated and that can be planned for. Some of the examples of changed circumstances provided in the comment are speculative and could not be planned for in the HCP. These include possible changes in forest or land management techniques by PALCO that could alter the likelihood or severity of windthrow, landslides, floods or other disturbances, and the possible introduction of exotic species. The changed circumstances identified in the HCP are based on events that have occurred in the recent past and that could reasonably be expected to occur during the 50-year term of the HCP and incidental take permits. The sizes and scales of some of the changed circumstances events have been increased in the Final HCP: fires that cover 20 percent or more of a planning watershed but are 5,000 total acres or less are treated as changed circumstances; landslides will constitute a changed circumstance if they affect 10 percent or more of a Class I or II watercourse; and 50-year to 100-year recurrence interval flood events will constitute changed circumstances.

Generally, the planned response to the changed circumstance will be a watershed analysis to assess impacts. The Services believe this is appropriate because each event will need to be assessed before further action can be taken. In the case of newly-listed species that are not covered by the HCP, PALCO may be required to provide additional mitigation in order to have the species covered by the incidental take permits.

ALA-113

NMFS believes that the Aquatics Conservation Plan of the HCP will restore properly functioning riparian conditions over time and, therefore, does not anticipate that critical habitat for coho salmon would require any additional measures from PALCO. See also response to SCE-127 and 129. Recovery plans are not a prerequisite to approving an HCP and the Services do not believe that subsequent adoption of recovery plans will require the PALCO HCP to be amended.

ALA-114

The comment disagrees generally with the Services' No Surprises final rule, which was published on February 23, 1998 after public comments on the proposed rule had been received and considered. The Services have applied the No Surprises policy in the HCP in a manner that is consistent with the final rule (see response to ALA-112). The No Surprises policy is being applied only with regard to covered species. The list of species being covered by the HCP and for which PALCO will receive assurances pursuant to the No Surprises regulations has been reduced from 36 to 17 species. A complete list of the covered species is found at Table 2 of the HCP. The Services believe that the covered species have been adequately evaluated and that the HCP's Operating Conservation Program addresses their needs. The No Surprises policy assures a permit holder that if the conservation plan is being properly implemented, the Services will not require additional conservation and mitigation measures involving the commitment of additional land, water, or financial compensation, or other natural resources otherwise available for development or use under the original terms of the plan, without the consent of the permittee. Seasonal restrictions on operations beyond

those already included in the HCP would constitute additional commitments of PALCO's land and resources and are, therefore, properly within the scope of the policy. Adaptive Management is a key element of the HCP's Operating Conservation Program, and, in particular, the Aquatics Conservation Plan component of the HCP, and allows for modification of conservation and management measures as appropriate in response to monitoring data and new scientific information.

ALA-115

All species, listed and unlisted, that the wildlife agencies determine are adequately covered by the final HCP are included in the ITPs. The ITPs will take effect as to each of these species when the species is listed. See response to ELF-22.

ALA-116

It is unclear to which specific provisions of the HCP and/or IA this comment refers. Changes to the HCP and IA cannot be made unilaterally by PALCO. All changes must be reviewed and approved by the wildlife agencies. See Section 7 of the IA.

ALA-117

Comment noted. See responses to SCE-11, item H, SCE-23, SCE 107, and SCE-116 through SCE 123.

ALA-118

The HCP allows for the incorporation of new information and data within the parameters established under the HCP's Operating Conservation Program. See responses to SCE-22, TNL-23 and JLD-12.

ALA-119

While FWS and NMFS believe that IAs for habitat conservation plans can be useful, neither the ESA nor the Services' regulations require them and there are no specific criteria for the contents of IAs. FWS has issued permits under Section 10 (a)(1)(B) of the ESA without developing or executing IAs. The Services believe that the PALCO HCP IA meets the concerns expressed in the comment.

ALA-120

The IA requires PALCO to fully comply with the mitigation, monitoring and adaptive management and reporting measures described in the HCP. Legal remedies available to the Services are provided in Sections 10 and 11 of the ESA (16 U.S.C. §§ 1540 & 1541) and include civil penalties of up to $25,000 per violation, permit sanctions (suspension, revocation or modification), and injunctive relief. The IA has been modified to deter noncompliance. For example, the harvesting of every merchantable tree (8" or greater in diameter) in violation of the federal permit can be charged as a separate violation of the ESA.

ALA-121

The IA does not substitute dispute resolution for enforcement authority. It allows the parties, at their option, to engage in dispute resolution as one means to resolve differences regarding HCP implementation. The Services believe that the non-binding dispute resolution described in the IA can be a useful option. However, the parties have expressly retained the right to pursue other legal remedies at any time.

ALA-122

PALCO must mitigate fully for the impacts of take that occur under the incidental take permit. The Services believe that, in almost all cases, full mitigation will be provided during the 50-year term of the permit. In

some cases, such as additional land that is covered late in the term, PALCO may be required to continue mitigation activities beyond the initial 50 years. The Services believe that the IA adequately describes the method for determining full mitigation in the event the incidental take permit is revoked or relinquished prior to the end of the term. Under the IA, the protections provided in the HCP's Operating Conservation Program must be undertaken by any third party acquiring any of the covered lands from PALCO during the term of the permit.

Any amendment of the ITP to allow harvest in an MMCA must be consistent with the provisions of AB 1986 and would only be allowed if the marbled murrelet had recovered to the point where it was eligible for removal from the list of threatened and endangered species under FESA without regard to the protections provided by the MMCA in question. In addition all other requirements of law including FESA and NEPA with respect to the other covered species.

ALA-123

Comment noted. As stated previously, the Services believe that the impacts resulting from incidental take will be fully mitigated during the term of the HCP and, generally, do not anticipate that additional mitigation will be necessary after the permit ends.

ALA-124

See response to BRC-1, BRC-2 and SCE-96.

ALA-125

While the Services believe that the HCP will provide for the long-term survival of covered species, the failure of an HCP to actively contribute to recovery is not a basis for permit revocation.

ALA-126

The IA only affects the rights and obligations of the parties to the agreement; it does not limit or restrict the rights of anyone else and does not affect citizen suits under the ESA.

ALA-127

Comment noted. No further response is necessary.

ALA-128

The list of covered species has been reduced from 36 to 17 since publication of the Draft HCP. The Services believe that the HCP adequately addresses the needs of the remaining unlisted covered species. This approach is consistent with previous HCPs and with the Services' HCP Handbook.

ALA-129

The HCP treats certain catastrophic natural disturbances, including floods, fire, and landslides, as unforeseen circumstances when they surpass levels that the HCP has identified as those that can be reasonably anticipated and planned for. This is consistent with the Services' No Surprises rule and its definition of "Unforeseen Circumstances."

ALA-130

The HCP's IA has been modified to require PALCO to post security with the CDFG in the amount of $2 million (adjusted annually for inflation), based on the annual estimated cost of carrying out the HCP's conservation and management measures. The security may be a pledged savings or trust account, certificate

of deposit, irrevocable letter or credit, or other form approved by the Wildlife Agencies. PALCO will be required to renew the security annually and to replenish it as necessary to the amount of $2 million until the HCP obligations have been fulfilled. As described elsewhere (see responses to EPA-7 and EPA-17), PALCO will be required to fund a third-party entity for effectiveness and compliance monitoring. Costs that might be associated with changes resulting from adaptive management are too speculative and the Wildlife Agencies have not required PALCO to post security relating to adaptive management.

ALA-131

The response indicates that contributing landowners to an HCP trust fund should be those that have "eliminated all known habitats for threatened and endangered species, and are thus not developing ITPs/HCPs." PALCO, obviously, is developing an HCP, which, if implemented, would not eliminate all known habitats for threatened and endangered species. Thus, by either measure, PALCO would not be required to contribute to an HCP trust fund. This comment therefore does not make sense. In addition, the term "in the interest of fairness" is not defined, so it is unclear what basis the reviewer is using to request the contribution of funds in any case.

ALA-132

See response to ALA-13.

ALA-132

The EIS/EIR appropriately assesses the economic effects that are interrelated with the expected changes in the natural and physical environment. The topics the commentors suggest should be included for economic analysis are highly speculative, outside the project scope, and thus were appropriately excluded from the analysis. With regard to the additional comments, the EIS/EIR does address the topic raised in Alternatives 3 and 4.

ALA-133

In Chapter 3, the Draft EIS/EIR does address nearly all of the impact topics mentioned. Those that were not addressed, such as sequestration and storage of atmospheric carbon dioxide, are speculative and therefore appropriately excluded from the environmental analysis. The agencies disagree that the Draft EIS/EIR simply relies on implementation of FPRs to indicate adequate protection of fish and wildlife. The effects of those rules are considered as part of the overall analysis in the document, including the mitigation measures that are beyond the FPRs.

Page 3.2-1 of the Draft EIS/EIR describes that parameters of the cumulative effects analysis, which included acreages of THPs and potential HCPs. Additionally, see response to ALA-73.

The statement that MMCAs would be allowed to be logged after the first few decades is a complete mischaracterization of MMCA management. The plan allows the agencies to request enhanced recruitment of second-growth trees into the residual overstory via thinning.

ALA-134

Comment noted.

ALA-135

The agencies disagree. The Draft EIS/EIR contains much additional information and analyses that are not in the Draft HCP/SYP. The issue of alleged PALCO violations of State Forest Practices rules is an issue for

consideration by the agencies, which will determine whether the application meets permit issuance criteria. See response to BRC-1 and BRC-2.

ALA-136

The FWS and NMFS will comply with the FESA, NEPA and all other applicable laws, regulations, policy and guidance in their decision regarding PALCO's ITP applications.

AYS-1

Your concern is noted. It is unfortunate that you were not able to present testimony when you wished to. Your written comments are being considered.

AYS-2

Your concern is noted. It is not unusual, however, for the primary parties to an action (that is, the applicant and the reviewing agency) to have their literature placed where all meeting attendees have access to it, while other parties are requested to distribute their literature in a separate area, where interested people have access to the material if they wish it.

AYS-3

Your concern is noted. The agencies have received thousands of comments in letters, petitions, postcards, hearings testimony, artwork, video tapes, and telephone calls. All comments received, by whatever means, have been given full consideration. This comment/response appendix, plus the numerous changes made to the Draft EIS/EIR and HCP/SYP, demonstrate that all comments were respectfully considered.

AYS-4

The suggestion that FEMAT prescriptions were ignored is incorrect. Section 3.7 of the EIS/EIR extensively discusses these prescriptions and specifically measures the level of protection provided by proposed RMZs in relationship to them.

AYS-5 and AYA-6

No information, data, or analysis were presented to support these comments. The effects of the alternatives with respect to these issues are addressed in the Draft EIS/EIR and also in the Final EIS/EIR.

AYS-7

The condition of aquatic habitat is independently addressed in the Draft EIS/EIR, and it is recognized that many of the habitat structures referred to are not currently functioning properly.

AYS-8

The effects of the rates of logging with respect aquatic habitat and terrestrial and aquatic endangered species are addressed in the Draft EIS/EIR. Additional discussion of these issues based on public comment is presented in the Final EIS/EIR.

AYS-9

Comment noted.

AYS-10

The Draft EIS/EIR independently evaluated the submitted HCP/SYP and various alternatives to PALCO's application. The Draft HCP/SYP and the Draft EIS/EIR were presented to the public for comment. As noted throughout the Draft EIS/EIR, there are no 30-foot stream buffers. Rather, there are 170-foot RMZs, which include a 30-foot no-harvest zone adjacent to streams. The effects on riparian and aquatic habitat of these RMZs were extensively discussed in the Draft EIS/EIR. In addition, all written and oral comments on the Draft EIS/EIR were reviewed and are responded to in the Final EIS/EIR.

BC-1

Many of these statements lack the specificity to support the comment or indicate a change in the EIS. However, the main concern seems to be the energy budgets of murrelets travelling farther due to harvest of potential habitat. Murrelets nesting in Humboldt Redwoods State Park are already flying considerably shorter distances than the species is known to cover in a daily movement to the nest (up to 60 miles). In response to worsening gaps in the regional population, the major focus of the HCP's marbled murrelet conservation strategy is to preserve the last significant unprotected portion of higher quality murrelet habitat in Recovery Zone 4. Refer to Section 3.10 and Appendix N in the Draft EIS/EIR for an extensive analysis of how the HCP meets the recovery goals of the species. Also note that herbicide use is no longer a covered activity in this HCP.

BC-2

The agencies believe that the Draft EIS/EIR has analyzed habitat fragmentation and connectivity, including habitat corridors, in detail using the best science available. The agencies also believe that the proposed measures, including RMZs , MMCAs, and NSO activity centers, mitigate the effects of incidental take on the remainder of the property.

BC-3

The commentor has misinterpreted a statement in the HCP's introduction to the marbled murrelet conservation plan. While it is suggested that the HCP says that the Northwest Forest Plan has stabilized populations of murrelets in northwestern California, in reality, it says that best available science indicates that Northwest Forest Plan Reserves (e.g., critical habitat units) will provide enough suitable nesting habitat to reduce threats to the survival of the species. This statement is quoted from the final recovery plan for the marbled murrelet. Furthermore, the measures proposed in the HCP are specifically designed to preserve some of the last, best unprotected higher quality murrelet habitat on private lands in the Northwest regardless of current occupancy. Under current management, if surveys determined these stands were unoccupied, these habitats would be available for timber harvest.

BC-4

The agencies agree that reductions of suitable habitat in areas lacking high quality and quantities of suitable habitat can threaten recovery, especially over large landscapes. The EIS, particularly Appendix N, analyzes in detail the possible effects of habitat removal and the benefits of the MAMU Conservation Plan together. The agencies believe that protection of murrelet habitat in the Headwaters Forest, the MMCAs, and in buffers around Humboldt Redwoods State Park will enhance, not reduce, the opportunities for recovery of murrelet populations in Zone 5. This distribution of blocks of high-quality habitat would likely not be available if current management practices were to continue in the long term.

BC-5

The MMCAs protect a considerable proportion of existing high quality second-growth and residual habitat. Additional acreage within those areas is expected to develop into suitable nesting habitat by the end of the permit period. Refer to Appendix N in the Draft EIS/EIR for an extensive analysis of second-growth habitat development. Also note the use of herbicides is no longer a covered activity in this HCP.

BC-6 through BC-12

The PALCO Spill Contingency Plan specifies certain actions, including agency notification, based on accidental release -- spills of hazardous materials, including pesticides, fuels, or other substances. An accidental release means any unlawful discharge, including unlawful intentional dumping. When diesel is mixed with herbicide active ingredient to make a herbicide formulation, the diesel is present as a pesticide and not as a fuel. The plan contains general provisions that may not be relevant to actual operations. PALCO plans no aerial application of herbicides. Exclusion of herbicide application from watercourse protection buffers will extend to storage or mixing of herbicides within the buffers. Herbicide mixture is transported by truck and transferred into backpack spray units on roads, not out in the general landscape or on steep slopes. The requirement for berming loading sites may create more ground disturbance than is warranted for the relatively small risk involved.

BC-7

As noted by the commentor in his comment BC-6, the spill contingency plan serves as a template for any substantial accidental spill. Hence, references to helispot, aerial units and pilot need to be retained for potential spills of fuel, oil, fertilizers, etc. associated with helicopter operations. Retention of these terms does not indicate that PALCO intends to conduct aerial spraying of herbicides.

BC-8

The spill contingency plan requires that the company take all reasonable efforts to prevent release of herbicides into Class I, II or III watercourses. In most cases this will mean not mixing/loading/rinsing herbicides in RMZs. However, given the greatly expanded size of the RMZs PL is proposing as part of its HCP, and the varied terrain, it is not possible to say that there will never be instances where such activities will need to be conducted in RMZ zones, especially with respect to Class III streams. In such cases, PALCO must take actions to prevent spills, potentially including such measures as those suggested in the comment (i.e., use of flat ground or berms).

BC-9

It is not reasonable to expect that PALCO would not use legally permissible herbicides in its operations.

BC-10

The standard for appropriateness varies according to the entity being notified. On the most basic level, all spills of any type must be reported to PL authorities, who, in turn, can take appropriate disciplinary actions and/or develop modifications of its spill avoidance strategy to prevent future recurrences. PL authorities also need to be aware of any and all spills so that they can provide this information to regulating agencies (e.g., NCRWQCB).

The NCRWQCB and CDF would be notified of spills significant enough to potentially affect water quality or the environment. In general, such spills would involve larger quantities of spilled material, or spills that have a higher probability of being delivered to watercourses.

CA Highway Patrol, Humboldt County Authorities, and/or Caltrans would be notified of spills that either 1) occur on public highways, or 2) are large enough to pose an immediate threat to human health or safety.

BC-11

Because a diesel/herbicide mix is still an herbicide, formally only the Herbicide Spills Coordinator would need to be notified. However, it is unlikely that a spill of any magnitude would not be immediately brought to the attention of both the Fuel/Oil and Herbicide Spills coordinators.

BC-12

A speed of 35 miles per hour would indeed be “pretty fast” for some of PALCO’s winding logging roads. However, other roads on PALCO’s property are wide, straight, and flat, and could probably be traveled at more than 35 miles per hour. This variability indicates that a prudent “cap” on speed should be the “never faster than is safe” standard used by the company.

BC-13

The agencies acknowledge the importance of so-called inert ingredients and have specified that any incidental take coverage will be based on a specific review of specific herbicide products, including adjuvants. This review will take into account the cumulative and watershed-scale effects cited by the commentor and described in the provided documentation, "Toxic Water," Northwest Coalition for Alternatives to Pesticides. The agencies are not aware of any ongoing take of protected species from current herbicide use, but based on available information, the agencies cannot rule out low-level, longer-term, or cumulative effects, and therefore the agencies are not providing incidental take coverage for herbicides at this time.

BC-14

The commentor raises a range of questions regarding triclopyr, the active ingredient in Garlon. As a chlorinated organic compound, there is a potential for triclopyr to resist biodegradation or to produce toxic degradation intermediates. While structurally similar to the herbicide 2,4,5-T, the substitution of nitrogen for one of the cyclic carbons is important because it reduces environmental persistence and involves a manufacturing process that does not produce dioxin as a toxic contaminant. As the commentor notes, Garlon has a nicer ring to it than Agent Orange. The questions involving ecological relationships such as mycorrhizal fungi, microbial, and aquatic productivity effects bear on potential impacts to covered species, particularly coho and streamside amphibians. Based on the uncertainty of long-term effects of herbicide use, including triclopyr, the agencies do not intend to extend coverage for herbicide use in the Incidental Take Permit.

BC-15

The commentor raises a range of questions regarding glyphosate the active ingredient in Roundup. Based on the uncertainty of long-term effects of herbicide use, including glyphosate, the agencies do not intend to extend coverage for herbicide use in the Incidental Take Permit.

BC-16

The herbicide 2,4-D has been extensively studied and remains controversial. At present, 2,4-D is allowed for use in forestry in California, but its use has declined because of environmental concerns. PALCO has not used 2,4-D in forestry, and any review of the effects of 2,4-D on the potential incidental take of a covered species would take into account bioaccumulative effects of the active ingredient and any contaminants present in the commercial herbicide.

BC-17

The commentor's concerns over atrazine reflect a general concern that has arisen from groundwater contamination in agricultural areas making heavy use of atrazine. At present, atrazine is not considered a human carcinogen and its use would be curtailed or eliminated if it were to be determined to be a carcinogen. Atrazine is not listed as a carcinogen in the California proposition 65 list. Based on the uncertainty of long-term effects of herbicide use, including glyphosate, the agencies do not intend to extend coverage for herbicide use in the Incidental Take Permit.

BC-18

Sulfometuron methyl is clearly toxic to aquatic organisms at high exposures. Consideration of its potential to reach the watercourse and the concentrations which may have an effect on coho or other aquatic species will be made before incidental take coverage is extended to the use of that herbicide. Redwood sensitivity to hexazinone is a factor in PALCO's decision not to use that herbicide. Compared with Douglas-fir, Redwood is more rapidly re-established after the clear-cut, it is less susceptible to competition by non-conifer species, it is as fast or faster in growth, and even as second growth, Redwood is slightly more valuable as a lumber source. PALCO does not plan to convert Redwood dominated forest to Douglas-fir.

BC-19

Although PALCO and its predecessors have logged the ownership for over a century, the intensity of forest management has clearly increased over the past 10 years. Significant herbicide use began in 1994 in conjunction with the rehabilitation of conifer forest areas. The EIS/EIR estimates future herbicide use based on the information supplied by PALCO as to the extent of clear-cut areas that will need herbicide treatment and as to the rate of conifer forest rehabilitation. The estimate of herbicide treatment reflects the total area subject to treatment and does not double count areas treated once and then again in a subsequent year. Ideally, the forester will need to treat each clearcut only once because re-treatment increases cost. PALCO (Dan Opalach, Personal Communication, January 1999) estimates that less than 50 percent of the clearcut treatment sites will need some level of re-treatment. This means that the total acreage treated in a year could be as much as 6,100 acres (2,000 acres of conifer rehabilitation, 2,700 acres of first time treatment of clearcut, and 1,400 acres of second time treatment of clearcut areas treated previously). The text of the EIS/EIR has been changed to add this information.

BC-20

Your request for additional acquisitions around adjacent public lands is noted. However, the available funds per AB 1986 establish other priorities.

BC-21

Tables 3.9-1, 3.9-2, 3.10-5, 3.10-6, and Figures 3.9-1, 3.9-2, and 3.10-1 in the Draft EIS/EIR all differentiate or identify old growth habitat and late seral habitat. Old growth and late seral habitats are analyzed together as LSH only where it makes biological sense, such as in the analysis of habitat fragmentation and connectivity. The inclusion of scattered stands containing residual old growth among younger age classes may be difficult to separate out at the landscape scale when evaluating areas. Regarding NSO, refer to the revised NSO Conservation Plan in Appendix P and to the response to comment ET-11 regarding take of NSO.

BC-22

Protection for the Owl Creek grove has been provided for by Assembly Bill 1986, which says that as a condition of the purchase of the Headwaters Reserve, the Owl Creek MMCA would not be harvested during the term of the permit, and arranges a possible acquisition process that would bring the Owl Creek area into state ownership. Please refer to revised Marbled Murrelet Conservation Plan in Appendix P pertaining to acreages added to the Owl and Grizzly Creek stands. Regarding the Iaqua Buttes and other habitat corridors mentioned by the commentor, all of these corridors involve analysis outside the Project Area. No data were available for analyses of habitat outside the Project Area.

BC-23

Separate analyses of each of the 14 known predators of the marbled murrelet is outside the scope of this analysis. However, some of these species have a status that makes them priority species. Therefore, they are analyzed in detail. In general, corvid predators of murrelets are habitat generalists and they would be expected to be abundant under any management alternative.

BG-1

No response needed. The comment period was extended to Nov. 16, 1998.

BLM-1

The comment that BLM is negotiating for grant of public access across private land to Headwaters from the south is noted. The commentor is correct that the enabling legislation (PL 105-83 ,Title V Section 501) identifies adequate public access to the Headwaters as a condition of the authorization. However, neither the comment nor the legislation particularly defines the term. The physical delineation of the Headwaters preserve included acquisition of an access road from the north of the preserve, presumably to facilitate public access. The comment does not indicate that any agreement or transaction beyond current "negotiation" for additional or different access has occurred, and it would be speculative to address the negotiation preferences of the commentor for acquisition of further rights or entitlements in private lands not yet acquired, obtained or authorized. No specific information was provided regarding route, nor analysis regarding the commentor's preference.

BLM-1

The discussion of reserve management has been changed to indicate that access could occur from the north or the south.

BRC-1 and BRC-2

Comments noted. PALCO's past record of California Forest Practice Rules (FPR) violations and recent timber operator's license revocation by CDF are cause for serious concern. The comment correctly points out that permit issuance criteria included under both FWS and NMFS regulations provide that the agencies may refuse to issue a permit if the agencies find that the permit applicant evidences a lack of responsibility to hold the permit. See 50 C.F.R. § 13.21(b)(1) and (3) and 50 C.F.R. § 220.21(b)(3). The assessment of a civil penalty or conviction of a criminal provision of a statute or regulation related to the activity for which the permit is sought provides a basis for finding a lack of responsibility on the part of the applicant under FWS regulations at 50 C.F.R. § 13.21(b)(1). The company's history of noncompliance with state forest practice rules must weigh heavily in the agencies' determination whether PALCO possesses the requisite responsibility to hold the ITPs and commitment to comply fully with their terms and conditions. However, PALCO's history of violations does not automatically disqualify the company from holding an ITP. 50 C.F.R

§ 13.21(c) identifies those factors that require FWS disapproval of a permit application. The factors include a felony violation of the Lacy Act or Migratory Bird Treaty Act, and past revocation of an ITP. None of the mandatory disqualifying factors apply to PALCO. Mandatory disqualifying factors are not included in the companion NMFS regulations at 50 C.F.R. § 220.21.

The comment also cites 15 C.F.R. § 904.301(a) of the National Oceanographic and Atmospheric Administration (NOAA) regulations as a basis for NMFS, an agency of NOAA, to deny PALCO an ITP. However, that regulation states that a permit may be denied for the commission of any offense prohibited by a NOAA administered statute. Violations of the California Forest Practice rules would not fall under that provision. To the agencies' knowledge, PALCO has not been convicted of any offense prohibited by a NOAA administered statute. The determination of whether PALCO's past conduct and history of FPR violations should disqualify the company from receiving ITPs is left to the reasoned discretion of the FWS and NMFS. In making their determinations, the agencies must consider the circumstances of PALCO's past conduct and make an informed judgment regarding the company's responsibility to hold and abide by the ITPs. At minimum, the company's history warrants a significantly higher level of permit compliance oversight and monitoring by the wildlife agencies than would otherwise be required.

Several provisions have been added to the IA to ensure close scrutiny of all PALCO timber harvest operations and increase the intensity of both compliance and effectiveness monitoring by the wildlife agencies. Chief among these provisions is § 3.4.1, which requires PALCO to fund for the life of the permit an independent on-site monitoring entity ("HCP Monitor") approved by the wildlife agencies to inspect whether the Covered Activities are being carried out in accordance with the provisions of the HCP, and at the agencies' election, to monitor the effectiveness of the HCP's Operating Conservation Program. The HCP Monitor is to be given full access to PALCO's land to inspect the Covered Activities and must be present during each timber harvest conducted by PALCO or on the company's behalf by third party contractors. The HCP Monitor is to immediately report any deviations by PALCO from the requirements of the HCP to designated representatives of the wildlife agencies and CDF so that appropriate enforcement action can be taken.

The wildlife agencies have also significantly strengthened the enforcement and remedy provisions of the IA. Section 3.2 of the IA has been modified to clarify PALCO's responsibility and liability under the ITPs for the actions of all of its employees and contractors conducting Covered Activities. The Company is required to conduct an HCP education program for all of its employees and contractors to ensure they are properly advised of the HCP's requirements. In addition, each contract between PALCO and a third party contractor is required to include a provision requiring the contractor to comply with the federal and state ITPs.

Section 3.3 of the IA requires PALCO to provide an annual budget approved by its board of directors that demonstrates sufficient funds to carry out PALCO's commitments for the next fiscal year. This provision has been modified to require PALCO to post security in the amount of $2 million, which approximates the amount necessary to carry out the company's obligations for one year. See Section H, Funding in Appendix P. The security must be renewed annually, adjusted annually for inflation, and immediately replaced by PALCO should the wildlife agencies draw on it as a result of PALCO's failure to fully carry out its HCP obligations. The obligation to post security adequate to carry out PALCO's out of pocket costs for each year will ensure that mitigation keeps pace with the company's harvest and other covered activities.

Substantial sanctions are provided under the FESA for violations of a federal ITP. Under Section 11 of the Act, PALCO may be assessed civil penalties of up to $25,000 and criminal penalties of up to $50,000 for each knowing violation of the federal ITP. A criminal conviction would also expose the violator to imprisonment for up to a year. Pursuant to 18 U.S.C. § 3571(b)(5) and (c)(5), respectively, the criminal penalties may be doubled to $100,000 for each violation by an individual and $200,000 for each violation by the company.

Significantly, § 3571(d) allows, as an alternative to the above identified monetary fines, the imposition of a fine equal to twice the gross pecuniary gain to the person guilty of the offense. As an example, PALCO could be subjected to fines equal to twice the gross value of each old growth tree harvested in violation of the ITP's terms and conditions. Section 9.1(a)(3) of the IA, which addresses remedies in the event of a permit violation, has been modified to provide that each harvesting of a single merchantable tree (8 inches at dbh) in violation of the terms and conditions of the ITPs will constitute a separate violation of the permit for purposes of imposing penalties under Federal and state law.

Should the agencies determine that PALCO is qualified to hold the ITPs, the above provisions will provide the federal wildlife agencies with powerful enforcement tools to ensure PALCO's compliance with the ITPs and a powerful disincentive to the company to violate the permits.

II-BRC-6 to II-BRC-8

Numerous species were removed from the list of covered species in the Final HCP. See Appendix P in the Final EIS/EIR.

II-BRC-9

The Draft EIS/EIR includes a more detailed analysis of this species than did the HCP. Additional mitigation measures have been incorporated, which would improve snag and downed log habitat for fishers. See Section 3.10 and Appendix P in the Final EIS/EIR.

II-BRC-10

The Draft EIS/EIR includes a more detailed analysis of this species than did the HCP. Additional mitigation measures have been incorporated, which would improve habitat conditions for the California red tree vole. See Section 3.10 and Appendix P in the Final EIS/EIR.

II-BRC-11

The wolverine is not proposed for coverage under the ITP.

II-BRC-12

The white-footed vole is not proposed for coverage under the ITP.

II-BRC-13

The commentor's points are valid; however, no bat species are proposed for coverage under the ITP.

II-BRC-14

The northern goshawk was removed from the list of covered species.

II-BRC-15

The northern goshawk was removed from the list of covered species.

BTC-1

Opinion noted. The commentor does not provide specific information or analysis as a basis for meriting changes to the Draft HCP/SYP and the Draft EIS/EIR. The effects of implementing the Forest Practice Rules is discussed in the Draft EIS/EIR as the state "No Action/No Project" alternative (Alternative 1). We agree that the Final HCP/SYP will provide more conservative protection measures than what the state regulations provide.

BTC-2

We agree that, in theory, streams in which water temperature and primary productivity are kept to low levels through dense forest canopies may not be "optimum trout habitat." Based on the preliminary information on water temperature regimes and riparian stand conditions both on and off the PALCO ownership, however, cold water does not appear to limit production of coho salmon (or any other salmonid) on the PALCO ownership, nor would it any time soon. Further, this comment lacks sufficient specificity to support change in the EIS or the HCP. Refer to the discussions of riparian vegetation and water temperature in Sections 3.7.3 and 3.8.2, respectively, of the Draft EIS/EIR and in the Draft HCP/SYP, which include references to Burns (1972), in Volume IV, Part D, Section 1.3.1.3.

BTC-3

The article by DeAngelo and DeAngelo (1998) was referenced in the Draft EIS/EIR.

CAF-1

That the reviewer did not read the Draft EIS/EIR is noted.

CAF-2

The commentor indicates that the HCP/SYP and supporting documents lack a rigorous biological assessment of population viability or probability of persistence under the proposed plan. Because of this deficit, there is no way to ascertain whether proposed actions will protect or restore existing populations.

In response, a rigorous biological assessment has not been possible for several reasons. First, although some limited and sporadic data is available on existing populations of coho salmon on PALCO lands, the available historic information does not support such rigorous analysis. In addition, any data from the PALCO area would need to consider additional information on harvest, disease, predation, poaching, and other factors that may limit coho salmon production. Development of such a life cycle model for PALCO lands was not deemed feasible nor would it provide the level of information necessary to make future management decisions based on existing information. To obtain such information would likely require extensive field data collection and a considerable period of time to derive the level of information needed. Second, coho salmon have been designated as threatened under ESA. This clearly indicates that the populations are not currently in healthy condition in this ESU and that recovery plans under ESA must be applied to the entire ESU, and not only to PALCO lands. Third, habitat attributes (e.g., composition of sediment, water temperatures, riparian habitat, upslope activities, mass wasting, large woody debris, and others) have been identified in the literature (see Section 3.8 of the EIS) as very important to aquatic habitat and the sustainability of coho salmon. Current conditions on PALCO lands would indicate that these attributes are not within limits that are considered properly functioning for continued conservation and restoration of coho salmon. Examples of unfavorable conditions include the current listing under CWA 303(d) of some streams on PALCO lands as limited for sediment and/or water temperatures (see Section 1.0 of the EIS/EIR).

The final HCP/SYP establishes management prescriptions for riparian conditions and upslope activities that are intended to establish a trend toward properly functioning aquatic habitat conditions, The process leading to these conditions will require a long period of time (on the order of decades) because the aquatic system will need an extended period of time to respond to changes resulting from management prescriptions for riparian and upslope areas. These prescriptions are based on known site conditions on PALCO lands and information available from the literature on aquatic habitat conditions (and the riparian and upslope conditions needed to affect such conditions) required for coho salmon (see Sections 3.4, 3.6, 3.7, and 3.8 of the EIS/EIR). Because aquatic habitat conditions on many areas of PALCO lands are not properly functioning,

these conditions must be improved to conserve and restore coho salmon on these lands, as required under ESA. Monitoring will be implemented as part of the HCP/SYP process to determine if the measures and prescriptions are effective in establishing these conditions. As indicated above, however, the HCP/SYP should not be considered as the definitive answer for conserving and recovering coho salmon populations in this ESU; it is only one important component of overall recovery efforts.

CAF-3

Based on public comments and issuance criteria, the regulatory agencies have increased the amount of roads to be stormproofed from 500 miles per decade to 750 miles per decade. Additionally, the very highest priority sites, i.e., those at risk of imminent failure that would deliver a significant amount of sediment to streams, will be stormproofed in the first three years.

Distribution and status of species are presented in the Final EIS/EIR in Section 3.8.2.3. Population trends are discussed in the Final EIS/EIR in Section 3.8.5. Anticipated effects of the HCP on aquatic habitat are presented in Table 3.8-8 of the Final EIS/EIR.

We agree that restoring natural loading of large woody debris may require decades and that interim measures such as in-stream habitat modifications are prone to failure.

In order to more directly address small, locally adapted populations of coho salmon, operational constraints can be imposed on individual Class I watersheds if the sum of harvest-related disturbances increases beyond a 20 percent threshold. This approach is detailed in the Final EIS/EIR, Appendix P.

CAF-4

The Draft EIS/EIR presented information in Section 3.8.2.3 on the occurrence of coho and other salmonid species on PALCO lands. Figure 3.8.3 (a , b, c, and d) shows the distributions of selected “List A” salmonid species. Table 3.8.6 depicts the distribution of these species (by stream miles) on PALCO lands within each hydrologic unit. As stated in this section, many areas have not been surveyed for these species. In the absence of surveys, the presence of coho salmon will be presumed if habitat for them exists. We concur that additional information on the status and temporal trends in population abundance of salmonid species is needed. Additional quantitative biological data on these species will be obtained through biological monitoring activities developed for each hydrologic unit as described in the “Aquatic Monitoring” section in the Final EIS/EIR and in the Final HCP/SYP.

CAF-5

We concur with your point that many landslide prone sites cannot be identified before disturbance, or are easily missed because of faint physical evidence. The watershed analysis process will further attempt to identify areas that are prone to mass wasting if disturbed by timber harvest and road construction.

The mass-wasting avoidance strategy is one component of the overall aquatic strategy. It is noted that it is your opinion that the mass-wasting avoidance strategy is the most important component of the overall aquatic strategy.

Based on public comments and agency permit issuance criteria, additional mitigations have been added to the mass-wasting avoidance strategy in the Final EIS/EIR and the Final HCP/SYP to better protect slopes with high and very high failure potential. The mass-wasting avoidance strategy states that no harvest shall occur on mass-wasting areas of concern, defined as areas of extreme mass-wasting hazard, very high mass-wasting hazard, high mass-wasting hazard, inner gorges, headwall swales, and unstable areas, including

those within the RMZs on Class I, II, and III watercourses, before watershed analysis. More detailed information on the mass-wasting avoidance strategy is found in the Final EIS/EIR, Appendix P.

CAF-6

Your comment is noted. The Draft HCP/SYP described how the slope stability assessment was developed in Volume II-D, pages 1-6, but did not adequately disclose the level of risk associated with disturbing areas of low to moderate mass-wasting hazard. The Draft EIS/EIR did consider the effects as part of its conclusion that sedimentation risks would only be reduced to moderate rather than low levels (see Section 3.6). Watershed analysis will also provide a means to assess the risk of low to moderately rated areas at the watershed scale.

The mass wasting avoidance strategy in the Final HCP/SYP includes a number of provisions designed to better address mass wasting risk from all sites, including low to moderately rated sites. The strategy includes the following:

FWS and NMFS, in consultation with the state agencies, will provide a set of criteria to determine whether mass wasting events are to be considered "significant" for aquatic resources to be used in the mass wasting watershed analysis module.

Before and/or after watershed analysis, the mass wasting areas of concern can be further defined on the ground (ground-truthed) with respect to area boundary sizes as part of individual timber harvest plans.

The wildlife agencies and PALCO will jointly establish a scientific panel to evaluate the definitions of high, very high, and extreme mass wasting areas of concern. The panel may modify the definitions. The high, very high, and extreme mass wasting areas of concern will be re-delineated in accordance with any modified definitions.

See the response to DRM-25. The points that areas of refugia are important for coho salmon and that management-induced landslides are especially important in these areas are noted. Watershed analysis will include an evaluation of the occurrence of existing coho salmon populations relative to the spatial location of landslide-prone areas. Watershed analysis, combined with the disturbance index process, will account for potential cumulative effects of logging and roads on landslides and streams in watersheds with large areas of moderate and low mass wasting potential.

See the response to CAF-5. Not all landslide prone sites can be accurately identified until after site disturbance. The watershed analysis process will better define the risk of landslides associated with disturbance across a watershed, but even this more refined, epidemiological process will not be able to identify all areas of risk.

Your comment is noted that a consistent rate of failure will forseeably occur as a result of error in identification, diagnosis, and prescription of mitigation measures and implementation of mitigation measures and that this increase over background mass wasting rates has not been estimated. The mass wasting avoidance strategy as described in the Final EIS/EIR, Appendix P, will significantly reduce the rate of failure associated with error by taking an overall lower risk approach to timber harvest and associated activities.

CAF-7

Based on public comments and agency issuance criteria, additional mitigations have been added to the mass wasting avoidance strategy in the Final HCP/SYP and the Final EIS/EIR. This strategy provides a lower risk approach, as further described in Appendix P of the Final EIS/EIR.

CAF-8

Your comment is noted. Please see responses to CAF-5, CAF-6, and CAF-7, DRM-25, DJK-7 and DLK-17, and DRM-7. Anticipated effects of the HCP on aquatic habitat are presented in Table 3.8-8 of the Final EIS/EIR, and anticipated effects of the HCP on fine and coarse sediment are presented in Table 3.6-4 of the Final EIS/EIR.

CAG-1

Regarding the shortcomings of the Forest Practice Rules, the Board of Forestry (BOF) promulgates rules, not CDF. The Secretary for Resources certifies the Forest Practice Rules, along with the THP review process, as a CEQA functional equivalent process. The BOF has determined that the Forest Practice Rules are sufficient. Anyone may petition the BOF at any time, however, to recommend new rules or changes to the Forest Practice Rules.

Regarding the comment that CDF does not train its inspectors in enforcement, CDF disagrees. The CDF Academy conducts an annual Forest Practice enforcement training course in coordination with the CDF Regions and Sacramento Headquarters. CDF inspectors are required to attend at least once every three years. Approximately one-third of all CDF inspectors are California Peace Officers, and approximately two-thirds are California Public Officers. All CDF Peace Officers and Public Officers have completed a training course at the CDF Academy on standard law enforcement techniques in accordance with California State law. The CDF Academy also offers annual courses on the Forest Practice Rules.

Regarding the comment that CDF does not train its staff in assessment, forest sciences, and application of modern techniques, CDF disagrees. CDF has sponsored the Watershed Academy, silviculture training, and growth modeling training. CDF encourages its staff to attend workshops and symposia on forestry issues sponsored by the University of California, California Licensed Foresters Association, and Society of American Foresters. In the last year, CDF has also conducted an internal study on the methods and techniques of measuring forest canopy cover in relation to watercourses.

CAG-2

An approved SYP does not exempt landowners from complying with new Forest Practice Rules.

CAG-3

Any modification to the HCP that would result in operations under the HCP that are significantly different from those analyzed in connection with the original HCP, adverse effects on the environment that are new or significantly different from those analyzed in connection with the original HCP or additional take not analyzed in connection with the original HCP will require an amendment to the ITPs. Such amendment must comply with NEPA and CEQA, including all public review requirements. See Section 7 of the IA.

Substantial deviations from the SYP, defined as where in any ten-year period the average harvest projections exceed ten percent, require an amendment that is approved by the Director of CDF. Such an amendment would require a 90-day public review. Minor deviations must be reported but do not require an amendment (see 14 CCR 1091.13). Modifications of the SYP as a result of effectiveness evaluation (see 14 CCR 1091.8) would require an amendment of the SYP only if the criterion for substantial deviation is met.

CAG-4

See response to SCE-11, item H, SCE-23, SCE-107, and SCE-116 through SCE 123.

CAG-5

Analytic scales are discussed in responses to DRM-25 and DJK-17. Refer also to the Final EIS/EIR, Appendix P, for further detail.

CAG-6

This comment indicates that a risk analysis is lacking. The FWS and NMFS believe there are adequate protection measures built into the aquatic and riparian protections included in the Final HCP, as potentially modified by Watershed Analysis. The Watershed Analysis procedure identified in the HCP is a well-established procedure used on other northwest forest landscapes, including other HCPs approved by the agencies. The FWS and NMFS will be able to ensure that resource protections resulting from Watershed Analyses are adequate because, under the HCP, the agencies will be able to approve/disapprove final Watershed Analysis conservation measures.

CAG-7

The assertion in this comment is incorrect. The Washington State method for watershed analysis involves extensive field work and verification.

Numeric targets are addressed in the agencies' properly functioning condition matrix as outlined in the Draft HCP/SYP Volume IV, Part D, Section 6. The effectiveness monitoring strategy will determine if conditions are trending toward those presented in the matrix.

CAG-8

The reviewer is directed to sections 3.4, 3.6, 3.7, and 3.8 of the EIS/EIR.

CAG-9

As part of the watershed analysis process, trees retained in the outer, limited-entry band will include those with the highest probability of recruitment to the stream. Activities associated with timber harvest in sensitive areas will be modified or curtailed as part of the watershed analysis and disturbance index approaches. Refer also to the response to DRM-25.

CAG-10

We do not consider the level of cumulative effects analysis within the HCP/SYP to meet requirements for tiering on future THPs. Future THPs will be required to have individual cumulative effects analyses prepared for that THP review.

The various projects used in the Draft EIS/EIR cumulative effects analysis are listed in Section 3.2, with additional information on land uses in Sections 3.6.6 and 3.4.3.10. This information was used in the cumulative effects analysis in each resource section. Note that the NEPA/CEQA cumulative effects analysis was contained within the Draft EIS/EIR and has been combined within the final EIS/EIR.

CAG-11

The EIS/EIR independently analyzes issues related to the soil, geomorphic, and aquatic environments and the effects of the actions on terrestrial and aquatic species and water quality (e.g., see sections 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, and 3.14) over the entire PALCO landscape rather than for specific sites. Existing data were considered in this analysis. With respect to cumulative watershed effects, see response to CAG-10.

CAG-12

The HCP monitoring plan was discussed in appropriate detail for the Draft EIS/EIR (see section 2.9 for general monitoring needs and section 3.9.5.2 with respect to commercial timber harvest). The Section 2.9 monitoring plan has been expanded in the Final EIS/EIR.

CAG-13

With respect to monitoring, please see response to CAG-12. With respect to adaptive management, see response to C-55.

CAG-14

See responses CAF-3, CTETAL-6, DRM-34, DRM-8, and LRM-16.

CAG-15

CDF disagrees that updated versions of the SYP are not available to the public. See responses to CAG-2 and CAG-3. Information in the SYP, to the extent that it is complete and accurate, may be referenced by the THP (see 14 CCR 1091.14).

CAG-16

The watershed analysis process is intended to provide more detailed information for individual watersheds. Watershed and site-specific data such as average slopes, soil types, and aquatic conditions and sensitivity will be gathered and further refined as part of watershed analysis. This information will be used to protect areas of instability and enhanced erosion hazard and to provide additional WLPZ protections.

CAG-17

Runoff potential for sizing culverts will employ either regional regression equations which use the drainage area above the culvert and mean annual precipitation and elevation, or the Rational Method which uses drainage area, rainfall depth-duration-frequency data, and a runoff coefficient. These methods are then site-verified to ensure that the proposed culvert diameter is adequate to maintain channel form.

Prioritization and upgrade timelines are outlined in the Final EIS/EIR, Appendix P.

CAG-18

Road closure will follow guidelines presented in Weaver and Hagans (1994). The purpose of road closure according to Weaver and Hagans (1994) is to treat roads “so they will not have the potential to impact streams and water quality.” Road closure will be undertaken as part of the road storm-proofing program. Under this plan which involves storm-proofing of at least 750 miles of road per decade, proper road closure can be counted toward the yearly and per-decade totals. Closed roads will be inspected after the first five-year storm even for five years after completion of work, whichever comes first, to ensure that treatments to restore natural drainage and hillslope stability are functioning as intended.

Abandoned roads, according to the definition provided by Weaver and Hagans (1994) is a “road which is no longer maintained.” Under the HCP/SYP all roads, including abandoned roads, shall be inspected at least once annually after June 1 and prior to October 15 to ensure that drainage structures and facilities are in proper condition. Roads that cannot be inspected during this time period must be properly closed.

Permanent roads through Riparian Management Zones shall be treated and maintained with rock, chip seal or pavement. This includes watercourse crossings and approaches.

Wet weather operations are discussed in detail in the Final HCP/SYP.

The term “enhancement” is not understood in the context of surface erosion.

Class III watercourses are not figured into the Disturbance Index (DI). The DI intends to assess potential impacts from silvicultural activities. In response to public comments the DI incorporates roads and mass wasting features. Potential delivery of stored colluvium will be addressed through the mass wasting module of watershed analysis. For details of this procedure refer to the Draft EIS/EIR. Correct, the DI approach is a "generalized model, based on broad assumptions.” The DI is not intended to be a stand-alone approach for guiding management activities. Actual ground conditions (e.g. “slope, soil and geomorphic conditions, percentage of roaded area, and type of silvicultural operations”) will be assessed as part of the watershed analysis procedure and appropriate management activities prescribed based on the results produced by watershed analysis. Ranges of sediment yield will be also addressed through this process.

The question regarding the “….effects of multiple entries as a causal factor in erosion and stream channel impacts…” is one that can be stated in the form of a testable hypothesis that can be investigated through watershed analysis and monitoring. This question is a broad one and relates directly to cumulative watershed effects. The framework for monitoring, including which details are to be developed during watershed analysis, is presented in the Final HCP/SYP and the Final EIS/EIR. Refer to the response to CAG-48.

We agree that Class III watercourse protection needs to be enhanced. Refer to the responses to CAG-44.

The Final HCP/SYP and EIS/EIR present time frames for accomplishing watershed analysis, road inventorying and road stormproofing. Most prescriptions that comprise the aquatic strategy, however, will be applied immediately after issuance of the ITP under timber harvest plans and timber harvest exemptions. The source of the reference to “…increase time between harvest in sensitive watersheds…” is not stated in the comment. The disturbance index approach, as modified and presented in the Final HCP/SYP and EIS/EIR, however, could delay management activities with the potential to great the greatest impacts (e.g., clearcutting and road construction) in intensively managed watersheds until disturbance index values are below the specified threshold. The initial disturbance index approach is described in the July 1998 Draft HCP/SYP, in Volume II, Part E, Assessment of Watershed Disturbances and Recovery.

CAG-19

Comment noted.

CAG-20

Figure 3.6-3 in the EIS/EIR has a geomorphic features map that displays the landscape level geomorphic features. To accommodate the data gaps, the EIS made an extrapolation of geomorphic feature with geology and slope to estimate the acreage of features in the unmapped area (Table 3.6-1). Figure 3.6-1 displays the acreage of EHR for each HU.

CAG-21

The EIS/EIR states that most delivery of sediment to stream is a result of road failures, road stream crossings, and surface erosion. Section 3.6.2.3 Roads addresses your concerns.

CAG-22

See the responses to CAG-10 and CAG-11.

CAG-23

Chapter 3.4-6 of the EIS/EIR addresses and presents information pertaining to mass wasting in the North Coast of California. The chapter address mass-wasting, erosion, and effects of management activities such as timber harvest and road construction. Chapter 3.4-4 addresses the direct and indirect effects of management activity on channel morphology.

CAG-24

Chapter 3.4-4 of the EIS/EIR addresses the direct and indirect effects of management activity on channel morphology.

CAG-25

The EIS/EIR does not propose management for stream temperatures at close to lethal threshold zones. Sections 3.4.1.3 and 3.8.2 and Appendix K of the Draft EIS/EIR refer to the range of water temperatures that provide properly functioning conditions for juvenile salmon and trout. The NMFS and the NCRWCB have the role of developing and revising criteria for properly functioning conditions, including those for water temperature.

The Final EIS/EIR and the Final HCP/SYP will provide details on how stream temperatures will be monitored in conjunction with both instream effectiveness monitoring and trend monitoring. These monitoring approaches will be designed during the watershed analysis process. Existing monitoring efforts by PALCO and the California Department of Fish and Game (referred to in Section 3.4.1.3) will be reviewed and modified to meet the objectives of the HCP/SYP. The parameters to be monitored, location and frequency will be selected while considering hydrologic unit-specific conditions, including information on shade canopy. This process will also lead to the development of prescriptions applied to hillslope and riparian management zones, which will lead to improvements in the habitat of coho salmon and other aquatic species.

The watershed analysis process will include assessments of riparian stand canopy closure and water temperature regimes. Based on this information, prescriptions will be developed for riparian stands to address concerns related to water temperature.

CAG-26

Section 3.4.2.2 of the Draft EIS/EIR discusses the limited role water originating in Class III watercourses plays in affecting water temperatures. These watercourses are commonly ephemeral and become dry during the critical summer months when high water temperatures are a concern. As such, they do not significantly affect water temperatures in Class I and Class II watercourses, where aquatic life occurs.

The HCP/SYP (Volume IV, Part D, Section 1.3.1.3, Water Temperature and Streamside Canopy Levels) acknowledges that streams with channel morphology dominated by shallow depths and where water has long resident times are likely to experience thermal loading. Water temperatures and channel morphology will be restored by managing riparian stands for higher shade canopy levels than is currently the case and by reducing inputs of sediment to streams. This is discussed in Section 3.4.3.2 of the Draft EIS/EIR.

CAG-27

Enhancement activities to address temperature effects are anticipated in the HCP/SYP (Volume IV, Part D, Sections 1.2.2.2 and 1.2.2.3) by allowing for management activities in the restricted harvest bands (RHBs) of Class I and Class II watercourse riparian management zones. These activities would be to enhance and

facilitate riparian function, including increasing shade canopy. Prescriptions for the RHBs would be developed in conjunction with watershed analysis and presented in riparian management plans.

CAG-28

Section 3.8 of the Draft EIS/EIR includes discussions of current stream habitat conditions and fish distributions. Volume II Part H of the Draft HCP/SYP also includes characterizations of existing conditions summarized by WAAs and tables summarizing data collected from streams on the PALCO ownership during the recent past. The Draft HCP/SYP, in Volume IV, Part D, Section 2.2, includes discussions of instream monitoring and assessments. This will be revised and the Final HCP/SYP will include clear descriptions of the monitoring framework. Refer to responses to CAF-4, CT-2 and CT-3. Section 3 of the Draft EIS/EIR discusses potential effects and mitigations. Section 1.2 of Part D, Volume IV of the Draft HCP/SYP discusses mitigations and prescriptions and Section 1.3 in the same part and volume discusses effects of mitigation measures.

CAG-29

The regulatory agencies will periodically review and revise the criteria for properly functioning conditions, including those in aquatic properly functioning condition matrix for large woody debris. Refer to the response to DRM-11.

CAG-30

Watershed analysis will provide information on channel sensitivity. Typically, this is expressed as delineating the channel network in source, transport, and response reaches as part of the channel assessment module. Synthesis of the other modules (i.e., fish habitat, riparian, hydrology, mass wasting, and surface erosion) will provide additional information on channel sensitivity.

CAG-31

The role of riparian vegetation in the ecology of coho salmon is discussed in the Draft HCP/SYP in Volume IV, Part D, Section 1.3.

CAG-33

See the response to GEC-38.

CAG-34

See the response to DRM-34; it includes all roads.

CAG-35

Comment is noted. The Aquatic Species Conservation Plan is in Appendix P of the Final EIS/EIR; it includes control of sediment from roads and other sources.

CAG-36

With respect to cumulative watershed effects, see response to CAG-10. With respect to monitoring, see response to CAG-12.

CAG-37

The effects of logging on hydrology and soil loss are addressed in the EIS/EIR in Sections 3.4 and 3.6. With respect to monitoring issues, see response to CAG-12.

CAG-38

With respect to cumulative effects, please see response to CAG-10. With respect to effects on water and soils, see response to CAG-11. With respect to monitoring, see response to CAG-12. With respect to adaptive management, please see response to C-55

CAG-39

The Review Team members will have access to the Final HCP/SYP and the EIS/EIR. Also see responses to CAG-2, CAG-3, and CAG-15. Mitigation measures from the Final HCP/SYP and the EIS/EIR will be included in a THP where they are relevant to issues in that THP.

CAG-40

The intent of this comment is unclear.

CAG-41

See responses DRM-34 and GEC-38. THP review by the regulatory agencies is part of the Aquatic Conservation Plan (see Appendix P of the Final EIS/EIR).

CAG-42

The HCP and SYP are not a TMDL. TMDLs are a separate process. See Section 1.8.1 in the Draft EIS/EIR for discussion of TMDLs. Water quality issues are discussed in Section 3.4 of the EIS/EIR. With respect to monitoring, see response to CAG-12.

CAG-43

With respect to cumulative effects analysis, see response to CAG-10.

CAG-44

We agree that Class III watercourse protection has to be enhanced. The Final HCP/SYP and Final EIS/EIR will include additional Class III watercourse protection. Until watershed analysis is completed, 2,175 acres adjacent to Class III watercourses will be protected by a 10- to 30-foot-wide, no-harvest zone to maintain bank stability, an additional 20-foot-wide buffer within which no more than one-third of the conifer basal area can be harvested per harvest entry, and beyond that, a 20- to 70-foot-wide (depending on slope) sediment filtration band. The remaining Class III watercourses will be protected by a 30 foot no cut buffer until watershed analysis has been completed. Sanitation-salvage, removal of downed wood, and heavy equipment operation except on designated watercourse crossings would not be allowed. In addition, protection given to headwall swales and other areas addressed by the mass wasting avoidance strategy will protect the upper extent of many Class III watercourses. Finally, additional protection of Class III watercourses will occur where they extend into Class I and Class II watercourse riparian management zones.

CAG-45

These issues are discussed in Weaver and Hagans (1994). See Section 4, Literature Cited, in the EIS/EIR.

CAG-46

The effects of roads are discussed in Section 3.4 and 3.6 of the EIS/EIR. Reduction in roaded area is not identified as a necessary mitigation measure in that analysis.

CAG-47

CDF disagrees that there is a potential conflict as to the authority of the THP as opposed to the HCP/SYP. See responses to CAG-15 and ET-12. Pursuant to §2.4 of the IA, CDF will incorporate relevant conservation and management measures provided in the HCP's Operating Program into each THP.

CAG- 48

The Final HCP/SYP under the section "Aquatic Monitoring" will describe the frameworks for compliance (implementation), effectiveness (hillslope and in-stream), and trend monitoring. Compliance monitoring will provide the means to ensure that the requirements of the HCP/SYP are incorporated as enforceable measures of each timber harvest plan. Hillslope and instream effectiveness monitoring will employ the approach described for the USDA Forest Service Pacific Southwest Region Best Management Practice Evaluation Program. This approach will provide the basis for determining whether prescriptions enforced under timber harvest plans that pertain to activities on the hillslope, as well as within the riparian management zones, are effective. The results of effectiveness monitoring and trend monitoring will continually provide the basis for modifying prescriptions developed during watershed analysis.

CAG-50

The comments provided have no analysis or information to support these statements. With respect to the related issues, see response to CAG-10, 11, and 12.

CAG-51

Based on public comments and agency issuance criteria, additional mitigation measures have been added to the Control of Sediment from Roads and Other Sources section in Appendix P of the Final EIS/EIR.

CAG-52

Based on public comments and agency issuance criteria, additional mitigation measures have been added to the mass wasting avoidance strategy. These measures are designed to reduce the risk of mass wasting and surface erosion. The additional mitigation measures are found in Appendix P of the Final EIS/EIR.

CAG-53

The Final HCP/SYP and the Final EIS/EIR will directly provide for large woody debris recruitment by establishing no-harvest buffers along Class I, Class II, and Class III watercourses, which will be 100, 30, and 30 feet wide, respectively. (See response to CAG-44 concerning 10 foot wide buffer on 2,175 acres along Class III watercourses). Within the entire riparian management zones established for all watercourses, no large woody debris will be removed.

CAG-54

The Final HCP/SYP and the Final EIS/EIR will directly accomplish sediment filtration by establishing no-harvest buffers along Class I, Class II, and Class III water, which, prior to watershed analysis, will be 100, 30, and 10 to 30 feet wide, respectively. (See response to CAG-44 concerning 10 foot wide buffer on 2,175 acres along Class III watercourses). The entire RMZ widths initially will be at least 170 feet and up to 400 feet wide for Class I, 130' and up to 400 feet wide for Class II waters, and at least 30 feet and up to 100 feet wide for Class III water. The widest zones applied to Class I and Class II watercourses will be where these are adjacent slopes greater than 50 percent. Within the entire riparian management zone established for all water, removal of large woody debris, sanitation-salvage, and heavy equipment operation will not be allowed except on designated watercourse crossings. In addition, prior to watershed analysis, no harvest and no road

construction and road reconstruction will be allowed in mass wasting areas of concern, including within riparian management zones.

In the Class I and Class II watercourse near-stream zones, the HCP/SYP will provide recommended combined overstory and understory cover approaching 100 percent. We do not concur, however, that no harvest should occur "...in the WLPZ/RMZ unless late seral characteristics are extant..." as defined by the provided criteria. Applying such a restriction could militate against achieving the late seral conditions defined by the stated criteria any time soon. Applying silvicultural prescriptions to riparian management zones can provide the means for increasing conifer stocking and accelerating diameter (bole and crown) growth, which would help meet the objectives of establishing multilayered canopy and large woody debris recruitment. The Final HCP/SYP and Final EIS/EIR will provide the means and targets for large tree recruitment and retention (i.e., the largest 18 trees per acre available in each harvest entry) and a target for diameter class basal area distribution per acre of trees up to 40 inches dbh that serve the apparent intent of the stated criteria for late seral forest. Refer to Volume IV, Part D, Section 1.2.2, of the Draft HCP/SYP for a discussion of tree and basal area retention and Section 3.7.4 of the Draft EIS/EIR for a discussion of riparian function criteria.

The Final HCP/SYP does not allow RMZ reduction for cable yarding. The plan allows felling trees to provide clearance for cable yarding, but only as needed for safety reasons. The plan requires that trees felled for this purpose will be retained as downed wood. The RMZ is an equipment exclusion zone for timber operations, except for roads and permitted crossings. Trees will be marked before pre-harvest inspection per the California Forest Practice Rules.

The Final HCP/SYP and the Final EIS/EIR will include additional restrictions on wet weather operations and hauling within RMZs. These restrictions are tied to specific conditions on the ground and criteria for "wet weather."

The Draft HCP/SYP and the Final HCP/SYP and the Draft and Final EIS/EIR provide for treatment of all sites of exposed mineral soil within RMZs, equipment exclusion zones, and equipment limitation zones equal to or greater than 100 square feet and all sites on slopes greater than 30 percent that can deliver fine sediment to a watercourse. Treatments include but are not limited to seeding and mulching.

The intent for the prescriptions regarding reduction of WLPZ/RMZ facilities, prioritization of potential sediment sources for treatment, linking activities to THP assessment, and mitigation and the suggested time line for dealing with critical sites is addressed in the Final HCP/SYP and the Final EIS/EIR. The schedule for road inventory and treatment of high and medium sites during stormproofing will occur within 20 years and include facilities both inside and outside of RMZs.

The apparent intent of the recommendation to prohibit use of roads for hauling until they have been subjected to "weatherization and competent rocking" is addressed by the measures pertaining to stormproofing and wet weather operations. Additional mitigation measures to those presented in Volume IV, Part D, of the Draft HCP/SYP in Section 1.2 will occur in the Final HCP/SYP and Final EIS/EIR.

CAG-55

The comments regarding mitigation measures to be applied to Class II watercourses are addressed in the response to CAG-54.

CAG-56

The Final HCP/SYP and the Final EIS/EIR will include additional mitigation measures to protect Class III watercourses. Refer to the responses to CAG-44 and CAG-54.

CAG-57

Comments are noted. Refer to the responses to CAG-25, CAG-48, and CAG-54 regarding watercourse protection and approaches for monitoring.

CAG-58

Comments are noted. Instream habitat complexity will be provided by the mitigation measures found under the Final HCP/SYP and the Final EIS/EIR. Refer to the response to CAG-54.

CAG-59

We agree that changes in bottom material size class distribution and pool and spawning habitat should be monitored over time to detect trends. Refer to the response to CAG-48.

CAG-60

This comment provides no information or analysis as to why clear-cutting should be prohibited. Silvicultural prescriptions can be modified through either the watershed analysis process or the disturbance index. Watershed analysis will identify sensitive areas in a watershed (e.g., those areas at risk of mass wasting) and modify or restrict harvest-related activities to address these concerns. The watershed analysis approach is discussed in the Draft HCP/SYP in Volume IV, Part D, Section 1.2.9.

Thresholds relative to silvicultural impacts are addressed through the disturbance index. Refer to the Final EIS/EIR, Appendix P, for further discussion. Also see the response to LMR-19, DJK-17, and DRM-25

CAG-61

See the response to GEC-38. Wet weather road use restrictions are described in Appendix P of the Final EIS/EIR. Limiting wet weather road use restricts other activities.

CAG-62

See response to CAG-52.

CAG-63

Your opinion on road reduction rates is noted. Based on public comments and FESA and CESA issuance criteria, additional mitigations have been added to the Control of Sediment from Roads and Other Sources section and to the Mass Wasting Avoidance sections of the HCP (see Appendix P of the Final EIS/EIR).

CAT-1

See response to SSC-6.

CAT-2

Comment noted. Herbicides are a subset of pesticides. The text on page 3.4-19 has been changed. The objective of the discussion of herbicides in the draft EIS/EIR is to assess the impacts associated with the SYP and to address the aspects of PALCO's forestry operations which might result in a incidental take of protected species. The EIS/EIR is not intended to be an analysis of general herbicide use in forestry or of the alternatives to herbicide use. In future consideration of coverage of protected species, means to minimize the potential effect of herbicides including the alternatives to specific chemicals, formulations, and methods of application will be considered. Most of the suggestions made by this commentor and others are outside of the scope of the decisions before the lead agencies.

CAT-3

The HCP/SYP preparation team comprises PALCO staff and its consultants. PALCO has on staff two California certified Pest Control Advisers (PCA) who are responsible for planning herbicide use on PALCO land and for issuing the recommendations for herbicide use as required by state law. Actual herbicide application is done by contractors.

CAT-4

Because the focus of the EIS/EIR is on the use of herbicides on PALCO land rather than on the general impact of herbicides and alternatives to their use, the agencies consulted included the North Coast Regional Water Quality Control Board and the Humboldt County Agriculture Department, agencies which are directly concerned with the scope, quantity, and effect of herbicides applied in the project area.

CAT-5

Foster Wheeler Environmental Corporation staff responsible for the Herbicides section included Mark Jones, a toxicologist with over ten years of experience. Thomas Reid has held a Qualified Applicator License for forestry, landscape, and right-of-way pesticide application from the State of California since 1986; his graduate studies were in population biology and ecology. The chapter was reviewed by agency technical staff. As stated before, the selection of the preferred alternative is not dependent on the analysis of herbicide use in general forestry on PALCO land.

CAT-6

The specific analysis of herbicide effects on protected species was determined to be insufficient to serve as a basis for extending coverage to those species under the Incidental Take Permit. See response to general comment C-42.

CAT-7

The California Department of Forestry has jurisdiction over forestry, but not over the use of herbicides. Herbicides may be an integral part of some forestry operations, but that does not necessarily grant jurisdiction over herbicides to the Department. The situation is analogous to a local government considering a land development project that has a transportation requirement. There the local government will consider the volume of traffic and its impacts, but will not assess automobile safety or automobile pollution controls. CDF can impose restrictions on the use of herbicides in conjunction with specific individual Timber Harvest Plans. So far, local regulation of herbicides has been done by the North Coast Regional Water Quality Control Board.

CAT-8

PALCO's herbicide use program specifically is not subject to local or state permits and is not a project under CEQA. It is not the subject of this EIS/EIR. Because herbicide use contributes to long-term sustained yield, it is analyzed in the context of conifer timber growth. That growth could probably be attained or approximated under a fairly wide range of herbicide and alternative methods of controlling competition from hardwoods and brush. That analysis is beyond the scope of the HCP/SYP and this EIS/EIR.

CAT-9

The description of the affected environment describes the program the PALCO will carry out over the next decade. The approximate location of the work is illustrated in the SYP which shows schematically the area subject to harvest in the first decade. The general area of forest rehabilitation is illustrated by maps of clear-

cut over the past two decades including areas shown as hardwoods on the forest type maps in the SYP. The rehabilitation work does not constitute elimination of native non-conifer forest such as oak woodland. The specifics of treatment and each site and the environmental conditions at each site cannot be specified at this program level of analysis, but will be specified in the individual THPs.

CAT-10

If an amendment is requested to cover incidental take from herbicide use, alternatives will be considered. Alternatives will be important to demonstrate minimization of take where there a potential for impact or where there is ambiguity over the magnitude of actual effect.

CAT-11

The EIS/EIR introduces the magnitude of herbicide use in Humboldt County and on PALCO land in the discussion of the affected environment where it belongs. The projections of PALCO herbicide use are based on estimates provided by PALCO. The agencies recognized that PALCO's use of herbicides only dates to 1994 and that the estimates are necessarily imprecise when considering the possible range of actions over a 50-year permit. The estimate that 80 percent of the clear-cut area needs herbicide follow-up comes from PALCO and reflects its experience in mixed conifer or Douglas-fir dominated forest areas. The pure redwood stands stump sprout and are subject to less competition from annual weeds or lower growing brush and do not need herbicide treatment.

PALCO also estimates that up to 50 percent of the clear-cut areas treated require a second year of treatment (Dan Opalach, PALCO, personal communication, 1/6/99). The commentor's estimate of the larger acreage subjected to herbicide treatment due to a second year of treatment is acknowledged. Using PALCO's estimate of 50 percent re-treatment yields the following calculation: The acreage treated in a year could be as much as 6,100 acres (2,000 acres of conifer rehabilitation, 2,700 acres of first time treatment of clear-cut, and 1,400 acres of second time treatment of clear-cut areas treated previously). The text of the EIS/EIR on Page 3.14-9 has been changed to add this information. The original text described only the extent of new clear-cut areas subject to treatment, not the total area subject to treatment. The commentor concludes that as much as 75,000 acres will be treated with herbicides in the first decade. This figure, however, does not represent the proportion of the overall ownership to be sprayed, since it includes areas sprayed twice and hence double counted. PALCO may treat some 6000 acres annually with herbicides, but over the first decade it is estimated that some 47,000 acres (roughly one-quarter of the active ownership) will be subject to some form of herbicide treatment.

CAT-12

CAT provides summary information on PALCO herbicide use in prior years. The CATs data for 1997 do not correspond to the data provided by PALCO and used in the EIS/EIR for tables 3.14-2 and 3.14-3. The CATs data were presumably compiled by CATs from a collection of individual records kept at the Humboldt County Department of Agriculture The CDF does not compute an annual total for individual applicators. The agencies expect that the difference is a matter of record keeping and of establishing a correct time frame for compiling the annual total; the agencies have not attempted to reconcile the difference. The information supplied by the commentor confirms the slate of chemicals and the substantial magnitude of application reported in the EIS/EIR.

Diesel oil is used as the diluent only for basal bark treatment. The values for basal bark treatment in Table 3.14.2 PALCO Herbicide Applications 1997, page 3.14-7 were omitted. The row commencing "Basal Bark Garlon 4" should include the values "1305 acres, 0.84 gal/acre, 1,096 gallons". The values were omitted from the table, but were included in the calculations; the total here and the totals in Table 1.14-3 are correct, (i.e.

the total for area treated in Table 3.14.2 is 4,853 acres, this is the sum of the column including the figure 1,305 acres for basal bark treatment).

Diesel is used in basal bark treatment because it helps the herbicide Garlon adhere to the plant, helps penetrate the bark, and resists water wash-off (e.g from rain). Other oils, synthetic or natural, such as vegetable oil, can be used instead of diesel, but diesel is most commonly used because of its lower cost. As the commentor notes, there is no record keeping requirement for use of diesel as a herbicide diluent; PALCO has no records of the amount of diesel use for basal bark treatment. When a 2% or 21/2% Garlon solution is used in diesel, there is a substantial diesel usage overall: each gallon of Garlon is carried in 40 to 50 gallons of diesel. Thus it is reasonable to estimate that a basal bark treatment rate of 0.8 gallons of Garlon 4 per acre will be carried in approximately 40 gallons of diesel. In 1997, PALCO records show 1,305 acres of basal bark treatment which would correspond to approximately 50,000 gallons of diesel oil diluent applied across the ownership in that year. This is an estimate made by the EIS/EIR contractor and has not been confirmed by PALCO. The EIS/EIR text has been modified to reflect this information. This level of cumulative diesel application could have an affect on covered species that has not been analyzed.

CAT-13 through CAT-19

Comment noted. The potential for groundwater impact is clearly greater for atrazine than for any other herbicides used by PALCO. This perspective is confirmed by the risk analysis submitted by PALCO (D. G. Thompson, op. cit.). The controversy and accumulating evidence of environmental harm contribute to PALCO's decision to phase out the use of atrazine and to replace it with sulfometuron methyl. In terms of widespread exposure, however, the cumulative application rate in forestry is significantly lower in a given watershed than in conventional agriculture due to the application one and occasionally two years out of a 40-year rotation. In a regulatory context, atrazine is not recognized as a human carcinogen and is not included in the listing of Chemicals Known to the State to Cause Cancer or Reproductive Toxicity pursuant Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

CAT-20 and CAT-21

Worker safety is considered by agencies with regulatory authority over pesticides as part of their registration process. No information has been submitted to show that the worker safety risk is greater on the PALCO ownership than in forestry in general, and a general risk assessment of herbicides is beyond the scope of this EIS/EIR. The relationship of herbicide use the SYP is discussed in general response C-42.

It is a requirement of law for the company to maintain a spill contingency plan. Enforcement is the responsibility of the North Coast Regional Water Quality Control Board.

CAT-22 through CAT-26

The discussion of sulfometuron methyl is noted. The agencies acknowledge that a compound capable of showing commercially valuable herbicidal effect at very low application rates may also have environmental effects at very low exposure rates. It is also true that novel commercial chemicals may be preferred on environmental grounds to chemicals with a longer use history simply because evidence of environmental damage in long-term and widespread use has not yet accumulated. The information provided will be considered in processing any amendment to provide incidental take coverage for listed species. A general risk assessment for sulfometuron methyl is beyond the scope of this EIS/EIR.

CAT-27

The comments on the subject of endocrine disrupters are noted and are included in the record. This subject matter has come under increasing consideration by the U.S. EPA and will eventually become part of the

pesticide regulatory process. In as much as the information on endocrine disrupters pertains to coho or other protected species, it will be considered in processing any amendment to provide incidental take coverage for listed species.

CAT-28 through CAT-32

The discussion of triclopyr is noted. The agencies acknowledge that the compound and its breakdown products are capable of environmental effects at very low exposure rates. The information provided will be considered in processing any amendment to provide incidental take coverage for listed species. A general risk assessment is beyond the scope of this EIS/EIR.

CAT-33

The discussion of glyphosate is noted. The agencies acknowledge that the compound and its breakdown products are capable of environmental effect at very low exposure rates. The information provided will be considered in processing any amendment to provide incidental take coverage for listed species. A general risk assessment is beyond the scope of this EIS/EIR.

CAT-34 and CAT-36

The agencies recognize the complex ecological relationships that mediate the impact of environmental contamination on wildlife species. These factors will be considered in processing any amendment to provide incidental take coverage for listed species.

CAT-35

As the commentor notes, treatment of so-called inert ingredients in herbicide formulations has been a contentious regulatory problem. Any amendment to provide incidental take coverage for listed species will be based on specific formulations and specific methods of application. This will allow the FWS and NMFS to consider the environmental fate and effects of the active ingredient, "inert" ingredients, known contaminants, adjuvants, diluents such as diesel or other non-water mixtures, and other additives such as marker dyes.

CAT-37

In developing the HCP/SYP, PALCO requested incidental take coverage for herbicides as described in the EIS/EIR and not for other possible pesticide applications such as treatment of forest insect pests or disease. Based on the available record, the agencies have decided not to extend incidental take coverage to herbicides. PALCO may apply for an amendment, and that amendment will have to be specific as to what pesticides, including herbicides, are being covered.

The ecological effects of changing the structure of the coastal coniferous forest are noted. Indeed, it is the cumulative effect of logging on the North Coast that has lead to the imperilment of the species that are the subject of the HCP. For species that are dependent on aquatic ecosystems and forest structure, the HCP includes provisions for buffers, protected areas, and management practices to minimize impact. Some of these provisions will be subject to adaptive management and as such, may be able to respond to yet unforeseen changes in forest structure that accompany the use of herbicides as an adjunct to clear-cut forestry.

CDFG-1

Comment noted.

CDFG-2

As indicated in Section 2.9 of the Draft EIS/EIR, the section contained a draft monitoring plan in order to inform the public of the types of issues that would be considered in a final monitoring plan. The Final EIS/EIR contains the additional detail indicated in this comment.

CDFG-3

Comment noted.

CDFG-4

This has been corrected in the Final EIS/EIR.

CDFG-5

The Draft EIS states on page 3.9-30 and elsewhere that hardwood and prairie areas that were originally conifer forest would be converted back to conifers. Since these areas have only been hardwoods or prairies for a relatively short time, converting them back to conifers is not expected to have a significant adverse effect on natural plant communities. We agree with CDFG that rare plant communities have not had sufficient time or necessary conditions to become established on these converted lands. We do not believe that returning these areas to their natural condition would have a significant adverse effect on the landscape.

CDFG-6

The loss of old-growth redwood and Douglas-fir is considered significant for all action alternatives that include the removal of old growth. This was misstated in Section 3.9.2.1. It was correctly stated in Table 2.6-2 of the Draft EIS. The error in Section 3.9.2.1 has been corrected in the Final EIS/EIR.

We made our determination of significance on the harvest of old growth based on the information provided in the Draft HCP/SYP. This information included a projected harvest based on the PALCO ownership plus the additional provisions from AB 1986. The EIR is for the entire PALCO property, not just for a particular watershed. We have not made separate significance evaluations for other environmental issues on a watershed-by-watershed basis.

CDFG-7

We agree. The mitigation measures have been changed in the Final EIS/EIR.

CDFG-8

The agencies agree to consider this recommendation

CDFG-9

Comment noted. Table will be updated.

CDFG-10

Comment noted. Table will be updated.

CDFG-11

Comment noted. Table will be updated.

CDFG-12

Comment noted. Table will be updated.

CDMG-1

The maps in the Final EIS/EIR provide the reader with a landscape-level map of various features on the PALCO landscape. Unfortunately, a topographic map at the scale of these maps would not provide any more additional information for the public. Detailed topographic maps of the area can be obtained from the USGS.

CDMG-2

Thank you. The maps in the Final EIS/EIR will show these changes.

CDMG-3

Figure 3.4-1 is correct. It is a hydrologic unit map of the Project Area.

CDMG-4

Thank you. Jordan and Stitz Creek have been added to the maps.

CDMG-5

Thank you. The reference will be added to "Literature Cited."

CDMG-6

In the Draft EIS/EIR, Section 3.6.3, Environmental Effects of Alternatives, explicitly states that mitigation measures to address slope stability concerns will have to be evaluated based on the information presented in each individual THP.

CDMG-7

Thank you. The change has been made.

CDMG-8

We concur with observation. Text changes have been made that should clarify this distinction.

CDMG-9

Text has been modified to reflect this comment.

CDMG-10

Text has been modified to reflect comment. However, we do not think that the reader of the environmental document would benefit from additional discussion of the economic factors common to the mining industry.

CDMG-11

The landowners (PALCO and Elk River Timber Company) are performing the evaluation of mineral rights through a title search, as is common for any real estate transaction. The results will be available to the parties before transfer of deeds. Also, see the explanatory text on page 3.5.12 of the Draft EIS.

CDMG-12

The Draft EIS/EIR has undergone legal review. Comment is noted.

CDMG-13

The mineral potential (for both occurrence and development) is low. It would continue to be low with or without the proposed land acquisition based on available information. The statement concerning mining not being a part of any alternative clarifies what is being proposed and what is not; the statement has been moved to avoid further confusion. Transferring the land to the government would virtually eliminate any potential for development because the lands are to be managed for the protection of threatened and endangered species and compatible public uses.

CDMG-14

There are no known differences in mineral management plans for the proposed reserve areas for each alternative. The text states clearly that for Alternatives 2, 3, and 4 "...reserve management ... would prohibit potential mineral-related activities." Differences between alternatives relate to the size of the proposed reserve in Alternatives 2 and 4. With regard to mineral activity, Alternative 3 is the same as Alternative 2.

CDMG-15 through CDMG-27

In the second paragraph of Section 3.5, it states that that the Draft EIS/EIR is not a technical geologic report, that the target audience is the general public and decision-makers, and that a full review of the rock units, their characteristics, the folds and faults, and the tectonic processes of the region are beyond its scope. CDMG reviewer's comments are appropriate for review of a technical engineering geology report. The level of detail in the Draft EIS/EIR is designed to expand the general public and decision-makers' understanding of the affected environment and environmental effects of timber harvesting and a land acquisition action.

This section discusses major components of the geology and mineral resources of the affected environment and the potential environmental effect for the general public and decision makers. It is not a technical geologic report, nor does it substitute for the site-specific geology review required as part of the THP process.

The principal message of this section of the Draft EIS/EIR is that the geology is relatively complex and that the tectonic processes operating across this part of California have created landforms that can be unstable. In the climate of the project area, the uplifted marine sediments erode rapidly. We think that the Geology Section (3.5) of the Draft EIS/EIR accurately presents and documents these concerns, notwithstanding clarifying a few of the technical comments provided by CDMG. Many of CDMG's comments on the Geology Section address geomorphology issues , which is a separate section (Section 3.6) of the Draft EIS/EIR.

Please see responses to CDMG-15 to CDMG-27.

CDMG-15

No assessment of slope stability is presented in Section 3.5. The factors mentioned (rainfall patterns, groundwater, and vegetation) are addressed in a subsequent section (Section 3.6).

CDMG-16

The map was prepared using existing GIS data obtained from PALCO (from the Draft HCP/SYP). This information originally came from CDMG maps, and this will be noted on the figure in the Final EIS/EIS.

CDMG-17

CDMG does not explain the need for additional elaboration on the structural variations in an EIS/EIR. We would consider adding additional detail for the structural variability of the region if it were relevant for documenting the environmental effects. We believe that this level of detail would neither aid in the decision-

making process, nor assist the public in understanding the effects of the land acquisition and HCP/SYP actions. Site-specific discussion of local structural variations can be addressed in the engineering geology review of the required THPs prior to any harvest-related activity.

We know that the relationship among uplift rates, downcutting along channels, and material strength is important in determining erosion rates and mechanisms. When this information is pertinent to land management, it would more appropriately be placed in the THP, where effects of a specific ground-disturbing activity on slope stability can be evaluated.

CDMG-18

The statement has been clarified. We believe that the existing discussion supports the geologic concern that the project area landforms can be unstable as a result of the rapid uplift of marine sediments to subaereal environments. If CDMG requires specific consideration of local structural features , the appropriate place for this consideration is in the individual THPs, rather than in an EIS/EIR.

CDMG-19

Nowhere in Section 3.5 does it state that "all" sedimentary rocks that overlie the Franciscan complex are fine-grained. The section notes occurrences of conglomerates in the Yager Formation and the gravel of the Hookton Formation. Additionally, sandstone (which may grade from coarse to fine-grained) is noted as being present in a number of the geological units. Also, please note the use of the qualifier word "generally" in the sentence of the Draft EIS/DEIR that concerns CDMG.

A Geology Section in an EIS should provide a simplified overview of the geology of the region and bring out points that may be of concern to decision-makers and the general public. These points of concern are that local tectonic processes can affect the stability of a site and that individual geological units exhibit variable stability and styles of mass wasting. These points are relevant to the public and decision-makers, and the Draft EIS/EIR accurately describes and documents these concerns.

CDMG-20

We concur with CDMG regarding the omission of the sheared matrix of the Franciscan melange and have included it in the Final EIS/EIR.

While we concur with CDMG that the downwarping of the Eel River basin is not pertinent to the engineering properties, it is pertinent in describing the local variability of the uplift in the region which is the point earlier CDMG comments (17 and 18). The Eel River basin is also pertinent to the economic geology (hydrocarbon and aggregate mining) of the project area. See response to comment CDMG 19.

CDMG-21

The Draft EIS/EIR does not describe the contact as depositional, preferring to note that the rocks of the Yager Formation generally overlie the Franciscan rocks. A depositional contact is implied by the phrase "grade-upward," which was included in the text based on CDMG's review of the administrative draft in which CDMG notes that the contact may be transitional. A transitional contact, which in common geologic usage is a type of depositional contact, is the point with which CDMG takes issue. Perhaps CDMG uses transitional to refer to lateral, not horizontal, variability among the stratigraphic units, as this would be consistent with Merrit's data relating to the similar ages of the two units. Alternatively, the contact could be tectonic, that is faulted, which could explain the similar ages of the units, but this generally is not described as transitional. We recognize that there is ongoing scientific controversy over the nature of the Franciscan/Yager contact, but we believe this information is not relevant to general public and decision-

makers nor to the likely effects of timber harvesting and associated activities. We have further generalized the description of the contact, replacing "grades upward" with "transitions" and inserting uncertainty as to the age of the Yager Formation. We hope this addresses CDMG's concern.

CDMG notes that this uncertainty (presumably the nature of the contact and not the age of the rocks) pertains to land stability impacts, but does not elaborate on this point. The nature of a geologic contact can certainly play a role in slope stability, such as when the contact is between rock units of contrasting permeability that can lead to excessive pore water and instability in the overlying rock unit, but local slope stability issues can be addressed in the geology report during the THP process, which CDMG can review. Such information is beyond the detail needed in an EIS/EIR.

CDMG-22

The Draft EIS/EIR stated that the Wildcat Group contains a variety of different rock types in addition to the predominate marine sandstone, mudstone, siltstone, and fluvial sandstone and that the variety of rock types, on a site-specific basis, influences geological stability. While we believe that this accurately represents the concerns conveyed by Bedrossian and CDMG, we have reworded the section using CDMG's words.

No paragraphs were added between the administrative and the public draft of the Draft EIS/EIR because the current paragraphs elaborate on the structural geology introduction. We do not find them duplicative or contradictory.

CDMG-23

As noted in the response to comments above, the Geology Section (3.5) of the Draft EIS/EIR is not an engineering geology report. Mapping individual faults and their contributions to site-specific slope stability concerns is beyond the scope of a NEPA/CEQA document. Such mapping is appropriate in an engineering geology review of the THP process. The geological influences on slope stability are discussed in the Draft EIS/EIR to document that they exist in the project area so that later site-specific slope stability assessments do not overlook them. We believe that the Draft EIS/EIR accurately and sufficiently documents the geological processes and influences on slope stability to the level of detail necessary for public disclosure and decision-making and the determination of effects related to the alternatives analyzed.

CDMG-24

Text has been modified to reflect the correct name of the agency.

CDMG-25

The Geology Section (3.5) of the Draft EIS/EIR does not present any conclusion based on Table 3.5.1. The only discussion of this table presents the source of the information used for the table (CDMG's own maps), and the limitations of the data are noted on the table itself. The table serves a useful purpose in displaying, to the general public and decision-makers, the influence that underlying geological units have on mass wasting processes in the area. Presentation of statistical data, locations, and areas affected are not necessary; they would imply a greater level of certainty than exists. We recognize that geological mapping is imprecise. The note on the table, as well as its title, clearly describes the general nature of the relationship between geological units and the dominant (not exclusive) mass wasting processes. See the responses to above comments regarding the distinction between an EIS/EIR and an engineering geology report.

CDMG-26

The typographical error in the table has been corrected.

CDMG-27

While additional information on these units might be helpful to some technical reviewers, it would not add any precision to the conclusion in Section 3.6 with respect to the effects of the various alternatives on slope stability.

CDMG-28

Thank you for the comment.

CDMG-29

The regulatory agencies recognize the complexity of the geomorphology of the area. The discussion in the Draft EIS/EIR provides a general overview supported by maps, tables, and text that illustrate the complexity of the landscape. The Draft EIS/EIR is not meant to be a site-specific field guide to the Project Area.

CDMG-30

Thank you. The appropriate changes have been made for the Final EIS/EIR.

The general information on features is outlined first. Section 3.6.2, Impact Mechanisms, addresses the specific geomorphic features and relevant studies related to the features.

CDMG-31

Thank you. "Over" was changed to "under".

CDMG-32

Thank you. Your comment was incorporated to reflect the low abrasion resistance of the source rock used.

CDMG-33

Thank you. The appropriate changes have been made in the Final EIS/EIR.

CDMG-34

Your comment is acknowledged. However, without any specific suggestions on more relevant studies that could be incorporated into the Final EIS/EIR, no changes can be made to this section. Appropriate studies such as Kelsey have been referenced and descriptions of mass wasting features are referred to in a figure from Bedrossian (1983). General studies related to forestry issues, although not site specific to northern California, are discussed because they are relevant to the issues of concern.

CDMG-35

Thank you. These references will be placed in the FEIR/Final EIS/EIR.

CDMG-36

Your comment is acknowledged. However, without any specific suggestions on more relevant studies that could be incorporated into the Final EIS/EIR, no changes can be made to this section. Appropriate studies such as Marron et al. (1995) and Weaver (1995) have been referenced. The section acknowledges some studies occurred in areas prior to FPRs.

CDMG-37

The source of sediment in Kelsey (1980) is fluvial transport of hillslope sediment and bank erosion along major channels. The hillslope sediment source was from both natural landslides and road/clearcut slope failures. Although much of the land management mentioned in the study was prior to the implementation of FPRs, the study displays the natural vulnerability and complexity of the geomorphic processes of the Project Area.

CDMG-38

Thank you. These references have been placed in the Final EIS/EIR**.**

CDMG-39

Thank you. The paragraph states "usually," which does not preclude your comment.

CDMG-40

Thank you. The statement was changed to "Other important factors that affect road surface erosion include condition of the road surface, timing of when the road is used in relation to rainfall, road prism moisture content, location of road relative to watercourses, construction methods such as outsloping versus insloping, and steepness of the slope on which the road is located."

CDMG-41

Thank you. The techniques you mentioned have been incorporated into the paragraph.

CDMG-42

The general effects of vegetation type root strength are addressed in Section 3.6.2.1 Shallow, Rapid Mass Wasting and Section 3.7.4.1. Riparian Function Criteria-Streambank Stability.

CDMG-43

Documentation of the literature is presented in the Affected Environment and Impact Mechanisms discussions in Section 3.6. This literature is used as the criteria for evaluation of the proposed mitigation measures. In addition, the prescriptions are evaluated with respect to the effects on other resources such as water quality (Section 3.4), riparian function (Section 3.6), and fisheries (Section 3.8). Section 3.1 describes the interrelationships between the resources of concern and the forestry-related management activities in detail.

CDMG-44

Thank you. A qualifier was added: "general prescriptions…landslide activity. However, site-specific mitigation measures would be necessary to reduce landslide potential."

CDMG-45

The statement has been clarified to "double the number of naturally caused landslide sites." In addition, the statement is quite clear that the landslides referred to in PWA's study are located in the Yager, Van Duzen, and Eel WAAs.

CDMG-46

The federal and state agencies have agreed that a modified WDNR watershed analysis methodology is adequate for the Project Area. The WDNR methodology specifically addresses surface erosion and mass

wasting. It has been used extensively and modified to address forestry-related impacts to water, fish, and soil resources. The general methodology is applicable to most forests in the Pacific Northwest, including northern California.

CDMG-47

The Draft EIS/EIR addresses forest activity effects to water quality in Section 3.4, fish habitat in Section 3.8, and soil productivity in Section 3.6.3.5. Additionally, the interactions among geomorphology, riparian, function, water quality, and fisheries are addressed in Section 3.1.

CDMG 48

Please see responses CDMG-49 through CDMG-51.

CDMG-49

The federal and state agencies believe that the threshold of significance is adequate because it is based upon the effectiveness of mitigation measures. A general description of the literature on which it is based is included in the Affected Environment and Impact Mechanisms sections of the Draft EIS/EIR.

CDMG-50

A detailed road inventory is not necessary for the decision-making process. Management of the existing and proposed road network is evaluated in each alternative. PWA (1998) has assessed some of the road network on PALCO property in the Freshwater Creek HU as part of the watershed analysis process that started in 1998.

CDMG-51

Appendix 19 of the HCP "Guidelines for Forest Roads and Landings," F-3 p. 19, discusses road spoil techniques and precautions. The Draft EIS/EIR highlights the key aspects of the road assessment plan. Road spoils were added to the discussion of the road guidelines.

CDMG-52

The agencies disagree. The anticipated effects of the mitigation, in conjunction with the adaptive management of the HCP/SYP, and the monitoring program, support the conclusions in the Draft EIS/EIR.

CDMG-53

Based on public comments and FESA and CESA issuance criteria, the agencies have considered additional mitigation to be appropriate in order to reduce the risk of potential adverse effects. Additional mitigation for the mass wasting avoidance strategy includes consultation with CDMG. Before and/or after watershed analysis, the mass wasting areas of concern can be further defined on the ground (ground-truthed) with respect to the area boundaries (size) as part of the individual timber harvest plans (THP). This refinement will be conducted by CDMG or a qualified professional geologist, including, but not limited to, certified engineering geologists licensed by the state of California. Several more mitigation measures that require CDMG's or a qualified geologist's review are included in the HCP Aquatic Strategy in Appendix P of the Final EIS/EIR.

CDMG-54

Based on public comments and FESA and CESA issuance criteria, the agencies have considered additional mitigation to be appropriate to reduce the risk of potential adverse effects. This additional mitigation, as

outlined in the HCP Aquatic Strategy in Appendix P of the Final EIS/EIR, addresses the definition of geomorphic features. The wildlife agencies and PALCO will jointly establish a scientific panel to evaluate the definitions of high, very high, and extreme mass wasting areas of concern.

CDMG-55

The definition used in the Glossary of Appendix P of the Final HCP/SYP is the correct definition used for the Final HCP Aquatic Strategy**.** However, the break in slope is defined as a slope less than 65 percent for a distance 100 feet or more.

CDMG-56

Thank you for your comments and recommendations. The agencies disagree with CDMG and believe that the conclusions reached regarding the impacts of each alternative on geologic, mineral resource, and slope stability conditions are clearly supported in the Draft EIS/EIR. CDMG's comments will, however, be considered relative to Appendix E to ensure consistency with California State law.

CDPR-1

Comment noted. However, the reviewer should note that HCPs are developed in order to receive an incidental take permit. See discussions in Section 1 of the Draft EIS/EIR.

CDPR-2

See responses to ALA-66 and ALA-115.

CDPR-3

The reviewer provides no information to support the request for additional buffers. The agencies consider the indicated buffers and timing restrictions to be sufficient to minimize effects on threatened and endangered species.

CDPR-4

The reviewer's opinion is noted. However, the opinion is at variance with federal and state law, which permit take under specific circumstances.

CDPR-5

Requests for the indicated information should be directed to PALCO in Scotia, California.

CDPR-6

The reviewer misinterprets the statements concerning management within MMCAs. The Draft EIS/EIR and Draft HCP/SYP indicate specifically that such actions would occur only if requested by the federal and state agencies and that these requests would occur only if there were an opportunity to enhance habitat.

CDPR-7

The agencies identified in the Draft EIS/EIR will be involved in watershed analysis, including NMFS, FWS, CDFG, CDF, and NCRWQCB. As indicated in the Draft EIS/EIR, the watershed analysis process evaluates site-specific potentials to affect water quality and aquatic habitat from timber operations and associated activities. Issues related to the local geology, climate, and other pertinent issues will be addressed.

CDPR-8

These issues are addressed in the Draft EIS/EIR in Section 3.6.

CDPR-9

All components of mass wasting were considered in the Draft EIS/EIR. It is unclear what "risk analysis" the comment is referring to, but if it is with respect to watershed analysis, the answer is yes.

CDPR-10

The comment provides no scientific information to justify its request for these specific RMZ widths. Consequently, the comment cannot be responded to. RMZ issues are discussed throughout sections 3.4, 3.6, 3.7, and 3.8 of the Draft EIS/EIR.

CDPR-11

It is acknowledged that, without consideration of AB 1986, the Class I prescriptions are somewhat complicated. However, with AB 1986 these prescriptions are more straightforward and more easily implemented and monitored.

CDPR-12

Agencies will review new roads when the roads involve potential construction in mass wasting areas. The agencies do not consider it necessary to evaluate all new roads in and of themselves. However, the agencies will be evaluating all submitted THPs and can comment on roads at that time. CDMG will continue to be involved in THP review. California State Parks and Recreation, as a Review Team Member in the THP review process; however, can submit comments on any THP during this review process and its comments will be responded to by CDF. NMFS will have geologists review individual THPs as considered necessary.

CDPR-13

This comment is not understandable.

CDPR-14

Roads will be inspected by qualified individuals with appropriate experience in forestry-related operations. Imminent failures are treated when identified.

CDPR-15

The comment provides no reason for the request, and the agencies do not agree that a certified engineering geologist would be appropriate for the functions associated with a registered geologist in the document.

CDPR-16

With the implementation of AB 1986, the bands referred to in this comment no longer apply. Please refer to Appendix P of the Final EIS/EIR for the Aquatics Conservation Plan. Note that all wood removed from the road prism will be left on site.

CDPR-17

This comment is not understandable.

CDPR-18

Opinion noted. However, the reviewer gives no reason for making this request. Consequently, no detailed response can be provided.

CDPR-19

It is not understandable what the relationship is between seismicity and size of detention ponds. Geologic structure is considered with respect to quarry stability.

CDPR-20

The comment provides no information to justify its suggested buffer width. The Draft EIS/EIR evaluates the effects of buffers on wetlands and considers them adequate within the overall context of the HCP.

Please refer also to the revised Aquatic Conservation Plan in Appendix P.

CE-1

The comments on past PALCO THPs are noted. Also see responses to IFR-4 and ET-12.

CE-2

This comment confuses the Forest Practice Rule language for ownerships where a sustained yield plan has not been submitted (14CCR Sec. 913.11(a)(1)) with requirements where an SYP has been submitted (913.11(b)(3)). In the latter case, the established level of maximum sustained production must "... support the production level of those high timber products the landowner selects while at the same time: ... giving consideration to recreation, range and forage, regional economic vitality, employment and aesthetic enjoyment." In this case, consideration must be given to the impacts of selected maximum sustained production criteria on regional economic and employment issues. These issues are addressed in Section 3.13 of the EIS/EIR.

CE-3

In addition to requirements of the Forest Practice Rules currently applied to THPs, the HCP/SYP includes protection measures that will further reduce impacts to water quality and to fish and wildlife habitat. These are described in several locations in the Draft HCP/SYP and in Sections 3.4 and 3.8 of the EIS/EIR.

CE-4

The proposed HCP/SYP does rely on a strategy similar to zero net discharge to prevent further damage to other uses as referenced in Appendix P, Section 3 (3) 2. See response to comment EB-2 for discussion of cumulative impacts.

CE-5

The agencies believe that the habitat classifications provided by PALCO are the best available for their property, and although the classifications have not been field-verified, the agencies believe that the habitat data are adequate for analytical purposes. The crosswalk established from PALCO data was needed in order to match the WHR habitat classification scheme.

CE-6

The Final EIS/EIR addresses road-related issues, including mass wasting and surface erosion in Section 3.6.2.3, Roads. Section 3.6.3 analyzes the effects of PALCO's management with respect to the increase in road construction on PALCO lands.

CE-8

Refer to Section 3.10 in the Draft EIS/EIR for an extensive analysis of the impacts of the proposed HCP on unlisted species, including amphibians and reptiles. See response to ALA-34.

CET-1

The discussion of herbicides in the Draft EIS/EIR is not intended as a formal risk assessment. The literature review is intended to give a general overview of the range of active ingredients, their chemical characteristics, and environmental effects as setting for the discussion of the potential impact on the environment, particularly on covered species. The lead agencies acknowledge the potential toxicity of herbicides to non-plant systems. Based on the record, regulatory authorities permit the use of these chemicals in forestry in Humboldt County. With regard to covered species, the agencies have determined that there is insufficient information the record to support issuance of a 50-year Incidental Take Permit. Refer to the response to the U.S. EPA and general response C-42. PALCO has submitted an environmental risk assessment as part of its comments. See comment 4273 PL1 PALCO, pp. 66 through 167, "Environmental Risk Assessment of Herbicide Use on Forest Lands of the Pacific Lumber Co., Scotia California", Dean G. Thompson, Ph.D., Nov. 13, 1998.

CET-2

Comment noted. In the analysis of potential for incidental take of covered species, a risk analysis will need to be performed linking application method to probable exposure and consequential harm to covered species. The potential for groundwater impact is clearly greater for atrazine than for any other herbicides used by PALCO. This perspective is confirmed by the risk analysis submitted by PALCO (D.G. Thompson, op. cit.). In terms of widespread exposure, however, the cumulative application rate in forestry is significantly lower in a given watershed than in conventional agriculture due to the application one and occasionally two years out of a 40-year rotation. In a regulatory context, atrazine is not recognized as a human carcinogen and is not included in the listing of Chemicals Known to the State to Cause Cancer or Reproductive Toxicity pursuant Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

CET-3 through CET-9

Please refer to the response CET-1. The ecological factors listed, such as animal ingestion of foliage, mycorrhizal fungi, and food chain effects, will be taken into account in any consideration of extending coverage to protected species. The EIS/EIR does not undertake an assessment of risk to the general human population; factors such as human ingestion from berry picking and worker safety are taken into account in the general regulatory process that establishes the conditions under which herbicides may be used in forestry on PALCO land. None of the conditions identified by the commentor or by other comments on the Draft EIS EIR show that those general regulatory conditions are not sufficiently protective for applications here.

COF-1

Comment noted. Reducing public controversy over PALCO's management of its timberlands, particularly the Headwaters Forest and Elk Head Springs Forest, is one of the stated project purposes.

COF-2

Your concern for the area's economic future is noted. The agencies' assessment of future timber supplies from PALCO lands and associated economic effects were reported in Draft EIS/EIR Chapters 3.9 and 3.13.

COF-3

The agencies believe the establishment of streamside buffers in addition to modification of other forest management practices are necessary to protect aquatic resources, which benefit all citizens. We disagree with your comment that the proposed action would remove thousands of acres of prime timberland from production and would likely create serious impacts on rural and urban development to all of California. To begin, the proposed streamside buffers proposed in the HCP apply only to timberland. A discussion of potential effects of the buffers, if applied throughout California's agricultural, rural, and urban landscapes, would be outside of the scope of this EIS/EIR. In addition, AB 1986 Section 6, as amended August 31, 1998, states that, "The provisions of this act shall not, in any way, be construed to create any precedent or requirement that would be applicable to any other future timber harvest plan, sustained yield plan, habitat conservation plan, or to otherwise restrict or prohibit any other activity affecting forest resources that is currently permitted under state law other than those plans or activities that are subject to the requirements of this act." As such, the HCP and its streamside buffers apply only to PALCO's timberlands in Humboldt County.

COH-1

The potential effects on the local economy are discussed in Section 3.13 of the Draft EIS/EIR. Additionally, the comment is noted.

CRWQCB-1

Opinion noted.

CRWQCB-2

See responses to GEC-38 and III-RF-3. In particular, refer to Appendix P of the Final EIS/EIR. Appendix P details the wet weather road restrictions.

CRWQCB-3

Your comment is noted. In addition, see responses III-RF-3, DRM-34, DJK-17, IFR-20 and NADCE-3.

CRWQCB-4

See responses to NADCE-3 and ET-12. The Final HCP/SYP requires the Disturbance Index of 20 percent to be applied at the hydrologic unit level, with restrictions on operations in circumstances where the level is currently exceeded or where it is close to the threshold.

CRWQCB-5

The Final HCP/SYP includes additional mitigation and protection of Class I, II and III watercourses by expansion of or additions to no-cut buffers proposed in the Draft HCP/SYP. Refer to the responses to CAG-29, CAG-53, and CAG-54.

CRWQCB-6

See response to DRM-38.

CRWQCB-7

Based on public comment and FESA and CESA issuance criteria, the Aquatics Conservation Plan of the HCP (Appendix P of the Final EIS/EIR) states that the provision in the Draft HCP/SYP that called for the agencies to analyze whether changes are warranted in the PALCO HCP each time another private landowner's HCP is approved with "less restrictive" prescriptions will not be part of the Final HCP/SYP.

CRWQCB-8

Comment noted. The Draft EIS/EIR provides a discussion of riparian function in Section 3.7.4.1. With regard to "undisturbed corridors", please refer to the responses to CAG-29, CAG-53, and CAG-54.

CRWQCB-9

This comment is addressed in the responses to CAG-29, CAG-53, and CAG-54.

CRWQCB-10

See comments to CAG-44 and DRM-1

CT-1

We agree. With implementation of watershed analysis, future habitat improvement projects are expected to be more effective as areas of past impacts are located. In addition, future land use activities are expected to increase the quality of instream habitat, thus limiting habitat improvement projects to restoring habitat degraded from past impacts.

CT-2

The approach for instream effectiveness monitoring will be described in the section "Aquatic Monitoring" in the Final HCP/SYP as well as Final EIS/EIR. Effectiveness monitoring will be designed to test mechanistic hypotheses through which inferences will be made regarding the effectiveness of mitigations, including those that involve instream habitat improvements. The details on instream effectiveness monitoring will be developed for each hydrologic unit during the watershed analysis process. These will include what will be sampled and when, where and how sampling and analysis of results will occur. The instream effectiveness monitoring program design will be peer reviewed by local scientist and experts and receive final approval by the NMFS.

CT-3

See response to CT-2. Details regarding where and when biological inventories will occur and what methods will employed, will be determined in conjunction with watershed analysis. Similar to instream monitoring, the sampling activities will be driven by clear statements of purpose and objectives.

CT-5

Comments noted. The uncertainty over implementation of the activities described in the excerpts of the Draft HCP/SYP presented in the comment will be resolved in the monitoring plans to be developed for each hydrologic unit as part of the watershed analysis process. Current monitoring and other activities such as instream habitat improvement, evaluation of fish abundance, and distribution in relation to instream structures and others proposed in the Draft HCP/SYP and referenced in the comment will be reviewed and as appropriate revised during the watershed assessment process. Refer to the responses to CAG-48, CT-2, and CT-13 regarding the Final HCP/SYP monitoring framework. The Wildlife Agencies concur that the responsible agencies should promote management strategies that ultimately will obviate the need to

"restore" and "improve" and that these strategies should implemented in a timely and appropriate manner. We also concur that those designing the effectiveness monitoring approach for instream habitat improvement work must consider the broader context of management regimes in the watershed and their effects on instream conditions.

CT-6

PALCO's fish rearing program is also intended to serve educational purposes. This is discussed in the Draft HCP/SYP in Vol. IV, Part D, Sec. 1.1.6.

CT-7

Fish rearing is no longer covered under the HCP. Incidental takings of coho as part of the rearing program are covered under a separate federal 10(a) 1(A) permit.

CT-8

We agree. See the response to ALA-32.

CT-9

Point is noted. Fish rearing facilities are no longer a covered activity under the PALCO Incidental Take Permit.

CT-10

Fish rearing facilities are no longer a covered activity under the PALCO Incidental Take Permit.

CT-11

Fish rearing facilities are no longer a covered activity under the PALCO Incidental Take Permit. Point is noted concerning no chinook salmon in Graham Gulch. We agree that fish abundance data are more valuable than presence/absence data. Unfortunately, these data are largely lacking from the plan area.

CT-12

Your comment is correct. The in-stream habitat improvement is an ongoing activity, and it is not being proposed as aquatic mitigation.

CT-13

The Draft HCP/SYP discusses monitoring of fish abundance in Volume IV, Part D, Section 2.2. Section 1.1.5 also discusses biological inventories and monitoring in conjunction with instream habitat improvement work. The Final EIS/EIR will provide additional details on this activity. See responses to CT-2 and CT-3.

The comment regarding the effectiveness of fish rearing facilities is noted. Fish rearing facilities will not be included among the covered activities of the incidental take permit for the HCP/SYP. This will be reflected in the Final EIS/EIR and HCP/SYP.

CT-14

Point noted concerning no chinook salmon in Graham Gulch. We agree that fish abundance data are more valuable than presence absence data. Unfortunately, these data are largely lacking from the plan area.

CT-16

Your comment is noted. Also see responses to CT-12 and FS-6.

CT-17

Opinion noted. The Draft HCP/SYP and the Final HCP/SYP emphasize aquatic conservation measures pertaining to constraints on timber operations on hillslopes and RMZs. Instream habitat improvement work supplements these measures by helping to recruit habitat sooner than would be the case by relying on these measures alone. The commentor does not provide support for the inference that instream habitat improvement would be used for "mitigating for the destruction of habitat." See the response to CT-13 regarding fish rearing facilities.

CTETAL-1

NMFS expects to designate final critical habitat for the Southern Oregon Northern California coho ESU in February 1999. This effort has taken longer than anticipated because NMFS Southwest Region, which includes California, has been coordinating with NMFS Northwest Region, which includes Washington, Oregon, and Idaho, to develop consistent critical habitat designations for listed salmonid ESUs on the west coast. NMFS conducted public hearings in northern California pursuant to its proposed critical habitat for the SONCC ESU and reexamined its proposal on the basis of numerous comments received as well as further internal discussions.

NMFS also expects to issue its final rule interpreting "harm" to listed species in the near future. NMFS published a notice of proposed rule on May 1, 1998 (63 FR 24148). NMFS is essentially adopting the same interpretation already used by FWS (50 CFR 17.3). That regulation interprets "harm" to include the modification of habitat that actually kills or injures a listed species. The United States Supreme Court upheld the definition in Babbitt v. Sweet Home Chapter (1995) 515 U.S. 687. Even without the final regulation, however, NMFS interprets "harm" to include habitat modification resulting in death or injury to listed species.

NMFS does not currently intend to release guidelines for salmonid take avoidance during timber operations. Instead, NMFS is working with the CDFG and the California Department of Forestry to revise Forest Practice Rules pursuant to a memorandum of agreement (MOA) executed between NMFS and the State of California in March 1998. The MOA was part of NMFS' decision not to list two steelhead ESUs in northern California (see 62 FR 43937, August 18, 1997). NMFS regards the revision of Forest Practice Rules as a more significant priority with potentially greater benefits to salmonid populations throughout California than the release of unenforceable guidelines.

NMFS has not yet prepared a coho recovery plan, but plans to establish recovery teams for listed coho in 1999. NMFS recently engaged in stream surveys in northern California to gain a better understanding of salmonid presence/absence and population sizes. NMFS disagrees that the HCP cannot be approved given the current state of knowledge regarding coho salmon. NMFS is relying on the best scientific information available that, although incomplete, indicates that the aquatic component of the HCP's Operating Conservation Program will, over time, improve habitat conditions on PALCO's lands sufficient to support all life stages of salmonids and will help to achieve the long-term survival of the coho ESU.

CTETAL-2

See responses to SF-18, PM-7, and CAF-7.

CTETAL-3

The economic consideration of the HCP has focused primarily on employment in the timber industry. Because the HCP will also improve habitat conditions for unlisted salmonids such as steelhead, it is reasonable to expect that benefits will result in the sportfishing industry.

CTETAL-4

See response to SSC-4.

CTETAL-5

Comments noted. The watershed analysis procedure will identify the impact mechanisms for each watershed (i.e. Bear Creek). Recent events in the Bear Creek watershed will be incorporated into the watershed analysis. If sediment and/or temperature are identified as impacting aquatic habitat, appropriate prescriptive measures will be approved by the agencies. As part of this, all data will be reviewed by the agencies. For further detail on the watershed analysis process, refer to Draft EIS/EIR Volume IV, Part D, Section 1.2.9.

CTETAL-6

Based on public comments and agency issuance criteria, additional mitigation measures have been added to the Control of Sediment from Roads and Other Sources component of the Aquatic Species Conservation Plan, Final EIS/EIR, Appendix P. Language defining a trained observer is not specified, but the process for determining sediment sources and the control of sediment from roads is rigorous (Draft HCP/SYP, Volume II, Part O; Weaver and Hagans, 1994). The process includes not only field determinations, but air photo analysis as well. It will be evident if the trained observer is not qualified to complete the inventory, based on the air photo work and the field data forms. The agencies will be involved in the sediment source reduction process as part of watershed analysis and will be able to collaborate on sediment source reduction inventories, analysis, prioritization, and treatments.

CTETAL-7

The HCP has been modified and now generally prohibits road construction and reconstruction during the wet weather period (October 15-June 1), subject to limited exceptions. Road construction or reconstruction during the wet weather period cannot result in a visible increase in turbidity in any drainage facility, construction/reconstruction site or road surface, any of which drain directly to a Class I, II, or III watercourse. These and the other road construction prescriptions should eliminate or greatly reduce adverse impacts to water quality.

CTETAL-8

Comment noted. We do not agree that the aquatic measures in the Draft HCP/SYP would not provide over time for recovery of coho and other salmonids. Refer to Section 3.7.4 of the Draft EIS/EIR for discussion of the effects of the proposed RMZs and evaluation of alternatives envisioned by the EIS/EIR. The Final HCP/SYP provides additional protection of Class III watercourses. Refer to the response to ALA-28. The Final HCP/SYP allows harvest within the restricted harvest bands along Class I and II watercourses to enhance and facilitate riparian function based on watershed analysis. Refer to Volume IV, Part D, Section 1.2.2.2 and 1.2.2.3 in the Draft HCP/SYP. Finally, the HCP does propose continuation of in-stream habitat restoration work. Refer to Volume IV, Part D, Section 1.1.5, 1.2.5 and 1.3.4 of the Draft HCP/SYP regarding in-stream habitat improvements.

CTETAL-9

The aquatic conservation strategy of the Final HCP/SYP and EIS/EIR (see Appendix P) does not distinguish between “cold-water” refugia and degraded stream systems. All streams are to be afforded equivalent protection to mitigate the effects of management activities until watershed analysis provides watershed-specific prescriptions. The intent of the aquatic conservation strategy is to maintain cold-water conditions

where they occur and also to allow recovery of habitat where coho salmon historically and currently exist. The effectiveness of the considered alternatives was evaluated in the Draft EIS/EIR with regard to water temperature in Section 3.8 and with regard to riparian function in Section 3.7.

CTETAL-10

See the responses to DRM-38 and CAG-16. In addition, gravel mining is covered under the incidental take authority in the U.S. Army Corps of Engineers' biological opinion until December 31, 1999. The agency commits to work with PALCO to process an amendment to the HCP over the next year to include gravel mining as a covered activity.

CTETAL-11

New agency-proposed mitigation would prohibit harvest and road construction on mass wasting areas of concern, defined as areas of extreme, very high, and high mass wasting hazards, inner gorges, headwall swales, and unstable areas including those within the riparian management zones on Class I, II, and III watercourses until watershed analysis.

CTETAL-12

See response to comment CTETAL-11.

DAVID BASTON -1

The Draft EIS/EIR does not assume that replacing old-growth forests or residual with second-growth forests will have the same habitat capacity. The sections in Chapter 3 of the Draft EIS/EIR discuss these effects.

DB-2

Detailed discussions of food web dynamics are not necessary to describe the likely effects of timber harvest. Issues related to changes in litter, sunlight, sediment, and herbicides are discussed. The Draft EIS/EIR not only examined individual components of the ecosystem but also analyzed the aggregate synergistic effects of the components. See, for example, pages 3.4-29 and 3.6-18 and associated discussions in Chapter 3.

DB-3

Refer to Section 3.10 of the Draft EIS/EIR for analysis of impacts to all threatened and endangered species (whose populations the Fish and Wildlife Service considers at risk enough to designate with federal status). Also refer to the revised list of species proposed for coverage, and additional species survey and monitoring requirements described in Appendix P of the Final EIS/EIR. The watershed analysis process and effectiveness, trends, and compliance monitoring programs will provide further information on more local species and habitat status, and will help determine the effectiveness of current management methods for protecting and restoring habitat conditions. New management approaches can be developed and implemented as needed to address shortcomings in management methods used in HCP.

DB-4

Even with application of herbicides and the delayed growth of shrubs, the duff layer is not completely destroyed and the soil does not simply erode unchecked with direct delivery to streams. In addition, there are a variety of erosion control measures that minimize or prevent delivery of eroded soil. The indicated measures are not deemed necessary by the regulating agencies with respect to application.

DB-5

The agencies acknowledge the potential ecosystem effects of herbicides and the potential for secondary or indirect impact on covered species. Because of insufficient analysis of these and other effects, the agencies do not intend to extend the Incidental Take Permit to cover herbicide use. The permit may be amended later if sufficient information supports inclusion of herbicide use.

DB-6

All pre-emergent herbicides need some soil residual activity to extend the herbicidal action over the period when weed species will germinate. Ideally, such pre-emergent herbicides have low water solubility so that the chemical will remain near the service of the soil where it may have the greatest effect on germinating weeds. The risk to the environment, and particularly the covered species, will depend on the balance between rate of biodegradation and mobility in the soil.

DB-7

The discussion of aerial application of herbicides in the EIS/EIR is relevant because the potential for direct application of herbicide spray to watercourses is far greater from aerial application than from ground application from individuals using backpack spray equipment. Although PALCO does not conduct aerial spraying, the data on the relative lack of impact of aerial spraying support the conclusion that the ground application will have no significant effect.

Rain or fog drip can wash foliar-applied herbicide from the target plant onto other vegetation or the ground. Precipitation has less effect on the frill method or on basal applications. Foliar application during precipitation is contrary to regulation and to good practice. Herbicide washed too soon from the target species will not accomplish sufficient control and will require subsequent, costly re-treatment. The specific potential of fog drip in the coastal conifer community will need to be evaluated if an amendment of the Incidental Take Permit is to be processed to cover herbicide use.

DB-8

Laboratory test methods to detect chlorinated organic compounds such as 2,4-D and triclopyr are quite sensitive and the level of detection is quite low, particularly in water. Laboratory tests conducted for PALCO by North Coast Laboratories, Ltd., Arcata, in 1998 reported limits of detection for glyphosate at 5.0 micrograms per liter (5 parts per billion [ppb]), Garlon at 0.10 micrograms per liter (0.1 ppb), and atrazine at 0.50 micrograms per liter (0.5 ppb).

The commentor is correct that analysis is more difficult in soil or on organic material and a laboratory will correct for incomplete sample recovery by measuring the recovery of a known quantity added as a “spike” to the sample. Adequate provision for such monitoring must be included in a supplemental analysis to allow incidental take of covered species. LC 50 or similar toxicity data provides only one perspective on potential environmental effects, since herbicides can act as far lower levels than are needed for overt toxicity. At present, the only water quality criteria that have been set for this area are the standards for drinking water as a beneficial use in the Basin Plan. So far, monitoring of surface waters has not shown detectable levels of herbicides. Incidental take coverage may require establishment of water quality criteria different from and possibly lower than the criteria currently referenced in the Basin Plan.

DB-9

The chemical formulation of herbicides used in forestry and in general agriculture is usually the same; however, the target species, the method of application, the amount of chemical used per acre, and the

frequency of application are far different. In general agriculture, herbicides are usually applied to the entire crop area, whereas in forestry, the applicator selects the target and need not cover the entire treatment site. In a typical 40-year rotation for intensive forestry, any individual site is treated with herbicides only once or occasionally twice. Compare this with general agricultural use where herbicides may be applied two or three times in each year. All of this means that the chemical input to a forestry site is substantially less than the amount used in general agriculture.

DB-10

The Basin Plan adopted by the North Coast Regional Water Quality Control Board sets lower limits for drinking water for atrazine than the levels the commentor cites for environmental effects. The incidental take coverage of herbicide use will include establishing standards based on ecological considerations and presumably will include monitoring provisions for breakdown or metabolite products.

DB-11

Any condition such as saturated soil or undisturbed soil that contributes to overland runoff will increase the likelihood that herbicides will be mobilized from their site of application and may reach a watercourse. The major focus of the HCP is aquatic protection by minimization of sediment movement from logging areas into the creeks. Any incidental take coverage of herbicides would include an evaluation of the effectiveness of the RMZs as buffers to herbicide movement.

DDM-1

Comment noted.

DDM-2

Comment noted.

DF-1

Many parts of this comment deal with unsubstantiated allegations about Charles Hurwitz and the state and federal negotiators that developed the original Headwaters agreement, and are not relevant to HCP and EIS/EIR analyses. Therefore do not warrant a response. However, the comment also raises concerns that critical evaluation and public involvement have not been a part of the subsequent development of the HCP and EIS/EIR.

With respect to critical evaluation, it is important to note that the HCP itself contains hundreds of pages of scientific analysis that a reader can use to assess the likely impacts of the HCP. In addition, key elements of the marbled murrelet strategy received peer review by members of a Blue Ribbon Panel convened expressly to help develop a science-based approach to protection of this species. The aquatic strategy was developed over a period of 18 months by a team of scientists from both PALCO and a variety of state and federal natural resource agencies, and was therefore subject to extensive critical evaluation. Finally, it is worth noting that many of the public comments received on the HCP and EIS/EIR were prepared by outside scientists, who freely expressed their opinions about the scientific validity of the HCP.

The public has been provided full opportunity to provide input into the proposed Headwaters Forest transaction and HCP between the government and MAXXAM is concluded.

DF-2

The commentor contends that because of court findings in Marbled Murrelet v. PL, anything PL claims is based on science cannot be trusted. However, this comment ignores the role that outside agency biologists

have played in developing and analyzing the HCP. That is, PL did not develop the HCP in isolation, then present it to the agencies and the public claiming it represented the best available science. Instead, PL worked with agency biologists over a period of years to develop an HCP strategy that both the company and the government agreed conformed to the best available science. Thus, it is the agencies and PL that are making the claim of best available science.

See also response to DF-1 as it deals with the question of critical evaluation of the HCP.

DF-3

The HCP requires monitoring and adaptive management throughout the life of the HCP. Through monitoring the company must "prove" that fish and wildlife habitat conditions are improving on its ownership. That is, they must prove that the HCP works. If it doesn't work, PL is required to modify its management measures to further protect fish and wildlife. Thus, contrary to the commentor's contentions, the HCP does not give the company an unlimited license to operate under the initial management prescriptions outlined in the HCP.

DF-4

The FWS and NMFS agree. While PALCO may envision the Headwaters Grove federal/state acquisition lands as mitigation, the FWS and NMFS do not and will not consider these lands as mitigation in making their decision regarding permit issuance. See response to PL-6

DF-5

Refer to Section 3.9 in the Draft EIS/EIR for a discussion of impacts to old-growth Douglas-fir through the permit period. Refer also to Appendix P for revised acreage figures of old growth and residual habitats.

DF-6

Please see Section 3.16 (Visual Resources) in the Final EIS/EIR. The EIS/EIR concludes that the visual effects resulting from timber harvest on PALCO lands would be consistent with the visual effects of timber harvest on other private timber lands in Humboldt County. The underlying concept is that because the CDF approves timber harvest on private lands and has approved large-scale timber harvest in Humboldt County, then it follows that the state finds acceptable the visual effects of large-scale timber harvest such as that which would occur on PALCO lands.

DF-7

The agencies disagree that PALCO would be under less scrutiny with issuance of an ITP. The Draft and Final EIS/EIR provide information on monitoring requirements. Additionally, a variety of federal and state agency personnel will be involved in watershed analysis and THP review, and will evaluate the monitoring data. In addition, an independent on-site monitor will be present to review individual THPs.

DF-8

Some reduction in PL's workforce is expected, both in response to reduced levels of timber harvest in future decades, and as a result of likely increases in technology and automation in the company's operations. However, PL will remain one of the largest private employers in Humboldt County, contributing over $150 million to the local economy. In addition, some of the funds received from the Headwaters Agreement could be used to purchase additional timberlands, which could be used to help maintain higher employment levels in future decades.

DF-9

Figure 3.6-3 Geomorphic Features Map of the Final EIS/EIR displays the CDMG mass wasting features on PALCO lands. If the Redway slide is not represented, it is possibly due to the absence of a slide when the area was mapped.

DF-10 BL

Erosion hazards are addressed in Section 3.6 of the Final EIS/EIR. Erosion hazard potential and mass wasting features are different, though not mutually exclusive.

DF-11

Thank you for the information concerning distribution of fish on PALCO lands. The information will be considered in future monitoring, watershed analysis, and THP development. It should be noted that the resource agencies consider all stream classes (i.e., I, II, and III) as either directly or indirectly important to coho salmon and other salmonid species. Therefore, measures and prescriptions were developed for all classes of streams and for riparian and upslope activities. The intent of these measures and prescriptions is to initiate a trend in aquatic, riparian, and upslope habitat that will lead to properly functioning aquatic habitat conditions over the period of the ITP.

DH-1

Comment noted. This information has been added to the Final EIS/EIR.

DH-2

Comment noted. The range description has been revised in the Final EIS/EIR.

DH-3

This statement is intended only to be a brief summary of threats to the species, not an exhaustive list. The agencies believe that the summary is appropriate in the context of this proposed action.

DH-4

The statement in the Draft EIS/EIR was intended to qualify the amount of research that has been published on the northwestern pond turtle, compared to species such as the spotted owl.

DH-5

The Final EIS/EIR has been revised to emphasize the importance of terrestrial habitats to northwestern pond turtle populations.

DH-6

We agree that terrestrial habitats play a more significant role in pond turtle biology than described in the Draft EIS/EIR. We disagree, however, about the inclusion of all habitat types which support pond turtle populations in the description of priority habitat for that species. As defined on page 3.10-19 of the Draft EIS/EIR, priority habitats are used in this analysis as an indicator of those areas with the greatest impact on the viability of this species, rather than an exhaustive list of all areas where it may occur.

DH-7

We disagree. Please see our response to DH-6.

DH-8

The Final EIS/EIR has been revised to clarify that sentence.

DH-9

The Draft EIS/EIR adequately addresses the issue of nest site distance by taking a conservative approach, identifying a usual nest site distance further from water (650 feet) than referenced by the commentor (181.5 feet). The implications of this nest site distance for the species in light of the proposed project are addressed in Section 3.10.2, Environmental Effects.

DH-10

The Final EIS/EIR has been revised to clarify the description of nesting habitat for this species.

DH-11

This information has been added to the Final EIS/EIR.

DH-12

Sources for the data describing known and suspected occurrences of wildlife habitats and species of concern are discussed on page 3.10-19 of the Draft EIS/EIR. Also, PALCO has not conducted any surveys specific to this species. Observations are incidental only.

DH-13

See response to DH-6.

DH-14

It is not clear from the comment what discrepancy in stream miles is being referred to. See response to DH-6 for a discussion of priority habitats. The value of the proposed RMZs for this species is discussed in Section 3.10.2, Environmental Effects.

DH-15

The Final EIS/EIR has been revised to include Jennings and Hayes' 1994 recommendations, as well as additional activities that may threaten populations of foothill yellow-legged frogs.

DH-16

The Final EIS/EIR has been revised to clarify the habitat associations of this species.

DH-17 and DH-18

The Final EIS/EIR and Final HCP will address the range of the northwestern pond turtle on page 3.10-40.

DH-19

The Draft EIS/EIR accurately associates northwestern pond turtles with stream habitats, and discusses the effects of the HCP on those habitats and associated turtle populations. The Final EIS/EIR and Final HCP will reflect this assessment.

DH-20

See response to DH-19.

DH-21

See response to DH-14.

DH-22

Potential impacts of the HCP/SYP are discussed on page 3.10-121 of the Draft EIS/EIR. The Final EIS/EIR and Final HCP will reflect this assessment.

DH-23

See responses to DH-14 and DH-22.

DH-24

See response to DH-22.

DH-25

More detailed adaptive management plans for this and other species are presented in the Final EIS/EIR and Final HCP.

DH-26

See response to DH-15.

DH-27

See response to DH-16.

DH-28

See response to DH-15.

DH-29

This issue is addressed on page 3.10-120 of the Draft EIS/EIR. The Final EIS/EIR and Final HCP will reflect this assessment.

DH-30

Potential impacts to this species outside of the wetted channel are addressed on page 3.10-120 of the Draft EIS/EIR. The Final EIS/EIR and Final HCP will reflect this assessment.

DH-31

The current range and distribution of this species is addressed on page 3.10-120 of the Draft EIS/EIR. The Final EIS/EIR and Final HCP will reflect this assessment.

DJK-1

The requirement imposed on an applicant and the federal wildlife agencies under § 7(d) of FESA to refrain from making an irreversible or irretrievable commitment of resources that would have the effect of foreclosing alternatives to the proposed action necessary to avoid jeopardy to any threatened or endangered species applies once formal consultation has been initiated. The FWS and NMFS are currently conducting formal consultation under § 7 on the proposed HCP and ITPs. Formal consultation was initiated on November 16, 1998. Neither PALCO nor the wildlife agencies have made any irreversible or irretrievable

commitment of resources that would foreclose alternatives to the proposed HCP and ITPs necessary to avoid jeopardy to any Covered Species during this time frame.

See response to comments JBBDS-1 and BRC-1 and BRC-2 regarding PALCO's history of state law violations.

DJK-2

Comment noted. Details of and controls on monitoring are discussed in the Final EIS/EIR.

DJK-3

Comment noted. Genetic assessments are beyond the scope of the HCP/SYP. As part of its monitoring program, PALCO has agreed to monitor fish abundance and population trends at various locations throughout its ownership.

DJK-4

Comments and opinions noted. The Wildlife Agencies do not agree with the commentor's conclusion that the adaptive management approach described in the Draft HCP/SYP "is not sufficient to keep the Northern California /Oregon coastal Evolutionarily Significant Unit of Coho Salmon from 'jeopardy' of extinction." The basis for this conclusion is not presented in the comment. Note that the Final HCP/SYP presents a revised and improved approach for adaptive management compared to what the draft of this document presented. The approach directly links adaptive management to the watershed analysis and monitoring approaches described in the Final HCP/SYP. Refer to the response to GP-17.

DJK-5

The aquatic strategy prescriptions presented in the Final HCP/SYP will be applied throughout the PALCO ownership until such time they are modified for each hydrologic unit based on the findings of watershed analysis. The approach directly links adaptive management to the watershed analysis and monitoring approaches described in the Final HCP/SYP. Refer to the response to GP-17. Any possible risks associated with elements of the aquatic strategy will be necessarily limited by the proportion of the ownership with stands that currently have timber commercial-sized to which the strategy will be applied. The Draft EIS/EIR evaluated the alternatives considered in detail, including the Proposed Action/Proposed Project alternative and found that aquatic strategy under this alternative is sufficient to protect riparian and aquatic habitat. Refer to Sections 3.4, 3.7, and 3.8 of the Draft HCP/SYP.

DJK-6

See responses to LMR-16, III-RF-3, and DRM-34.

DJK-7

The wildlife agencies disagree. If these activities are to be carried out at all, they must involve the direct participation and rely on the resources of PALCO. The planning, design, implementation, and monitoring of all of these activities will involve the oversight, approval, and periodic review of the NMFS and other state and federal agencies. Habitat inventories and assessment of roads and other sediment sources will occur in conjunction with watershed analysis, which will receive the oversight and input from the agencies. Biological inventories will be conducted as part of monitoring, the design of which must receive the wildlife agencies' approval. Habitat enhancement projects will be the subject to CDFG Fish and Game Code Sec. 1603 agreements. Fish rearing activities will be subject to state and federal permits.

DJK-8

Comment is noted. PALCO has agreed to conduct watershed analysis on all covered lands within five years of issuance of an incidental take permit.

DJK-9

Comment is noted. See the response to ALA-32.

DJK-10

Comment noted. Sections 3.7.4.1, 3.7.4.2 and 3.7.4.3 of the Draft EIS/EIR provide discussions of riparian function, the historical setting of the plan area, and evaluation of the alternatives. In addition, the effectiveness of the "buffer zone system" will be monitored. Refer to the responses to CAG-25 and CAG-48 regarding monitoring.

DJK-11

The Draft HCP/SYP and Draft EIS/EIR address the concerns pertaining to ground disturbance (including from skid trails and roads) within RMZs in Sections 3.6.2.2 (Surface Erosion), 3.6.2.3 (Roads), 3.7.4.1 (Riparian Function Criteria) and 3.8.6 (Mitigation). The Final HCP/SYP includes mitigation measures in addition to those presented in the draft documents to address concerns over potential sediment effects from ground-based operations within RMZs. Refer to the presentation of these measures under the following headings in the Final HCP/SYP (see Appendix P): "Road Stormproofing", "Road Construction, Reconstruction, and Improvement", "Road Maintenance", "Road Inspections", "Wet Weather Road Use Restrictions", and "Measures to Minimize Surface Erosion in Riparian Areas". Also refer to the measures that pertain to Class I, II and III watercourse RMZs. The latter includes mitigation measures that place limitations on new road construction within RMZs, and equipment exclusion except for permitted road crossings and skid trail crossings.

DJK-12

Based on public comments and agency issuance criteria, additional mitigation measures have been added to the Control of Sediment from Roads and Other Sources component of the Aquatic Species Conservation Plan, Final EIS/EIR, Appendix P. Many mitigation measures pertain to the reduction of road related sediment. In addition, roads will be located outside of riparian management zones (RMZ), except for RMZ crossings, which will be minimized.

DJK-13

The disturbance index will be used to constrain the extent of cutting in individual hydrologic units. For more detail on this approach, refer to the Final EIS/EIR, Appendix P. Sediment and temperature impacts will be addressed through the watershed analysis process, and appropriate prescriptive changes will be made.

DJK-14

Refer to discussions in Sections 3.6.2.2 (Surface Erosion), 3.7.4.1 (Riparian Function Criteria), 3.7.4.3 (Evaluation of the Alternatives) and 3.8.6 (Mitigation) of the Draft EIS/EIR for the basis of the RMZ prescriptions, including those that are to be applied to Class II watercourses. Additional discussion occurs in Volume IV, Part D, Section 1.3 of the Draft HCP/SYP. Note that the Final HCP/SYP includes added protection (e.g., wider "no cut" buffers) for Class II watercourses. See Appendix P of the Final EIS/EIR for a description of the additional mitigation measures.

DJK-15

Cumulative effects are also evaluated in the Draft EIS/EIR. In addition, see response to C-33.

DJK-16

The average values presented for each WAA represent a preliminary "coarse filter" to characterize baseline conditions. The discussion of water temperatures in Section 3.4 of the Draft EIS/EIR and information in Table 3.4-5 in this same section provide maximum weekly average temperature values for specific planning watersheds and streams throughout the PALCO ownership. Additional temperature data, including values for seven-day average high and high temperature are presented (in many cases, for more than one year) in the table labeled "Stream Monitoring" located in Volume II, Part F of the Draft HCP/SYP. This information will be used to inform participants of the watershed analysis process which streams currently appear to be impaired or at risk from adverse temperatures to the extent that additional baseline assessments will be warranted in the near term. Instream effectiveness and trend monitoring, the design of which will be determined for each hydrologic unit through watershed analysis, will provide additional information on temperature regimes.

DJK-17

The ranking system was developed to regulate activities when the amount of disturbance in any hydrologic unit exceeds a predetermined threshold (disturbance index value greater than or equal to 20%). If the calculated index is at or above 20%, the company will refrain from all activities with the highest disturbance ratings, 0.7 and above, and cannot increase the index value from one THP to another. If the index value is below 20%, no activities will be conducted that will increase the index in excess of the 20% upper limit.

To ensure that impacts to salmonids in Class I sub-basins are minimized, those Class I watersheds that have a disturbance index in excess of 20% will have various operation restrictions. These are discussed in greater detail in the Final EIS/EIR, Appendix P.

I-DMI-1

Comment noted. This has been corrected in the Final EIS/EIR. A new FREIGHTS model has been run, reflecting changes in mitigation between the Draft and the Final EIS/EIR. New average harvest-per-decade numbers were generated. These new numbers were used in the Final EIS/EIR to accurately portray the projected average harvest per decade over the 120-year life of the Sustained Yield Plan. The correct numbers are in units of thousand board feet (mbf). The List of Acronyms incorrectly defined mbf as million board feet, not thousand board feet. The Final EIS/EIR has been modified to correct this inaccurate definition. Though the calculations of average harvest per decade presented in Section 3.9 were incorrect, the presentation of total decade harvest volumes were correctly presented. In addition, the figures in Section 3.13 were correct. Please note that the figures in Section 3.9 are calculated as total harvest volume per decade and average harvest per decade. In contrast, the timber harvest figures in Section 3.13 are calculated as average annual harvest per decade in order to estimate potential changes to county revenues on an annual basis.

I-DMI-2

See response to I-DMI-1. The agencies do not agree that recirculation is warranted. The Draft EIS/EIR has undergone extensive public review and no errors such as those suggested have been noted.

I-DMI-3

This issue was identified in the Scoping Report (Appendix D, page 23) along with other scoping comments pertaining to visual resource impacts. Impacts to visual resources were described in detail in the Draft EIS/EIR, Chapter 3.16.

I-DMI-4

It is unfortunate that you had difficulty finding a printed copy of the Draft EIS/EIR. Copies of the document were sent to more than 50 public libraries, including Humboldt State University. We depend upon these institutions to make the copies available to the public. In addition, paper copies of the Draft EIS/EIR were available at certain government offices, and were available upon request from the U.S. Fish and Wildlife Service.

I-DMI-5

With respect to the FPRs and BOF guidance the constraints on LTSY are related to achieving a balance of harvest with growth over the long-term. The decision of how to accomplish this is up to the company. As indicated by the LTSY analysis the projected harvest is not in excess of growth if intensive management is implemented as intended. The action evaluated here is whether to issue an ITP and approve an SYP. The federal and state governments do not establish financial goals for private companies and consideration of such issues is beyond the scope of this environmental analysis.

I-DMI-6

The footnotes of Table 3.13-9 of the Final EIS/EIR have been changed to more accurately describe the figures in the table. While the forecast numbers in the table are an annual average over a decade, and the historic harvest volume figures represent an annual average over the previous decade, the historic employment figure for PALCO is the actual reported employment in 1996. We disagree with your conclusion that the employment figure actually represents peak employment.

Regarding the average historic harvest figure, 250,000 mbf per year over the past 10 years, this figure was obtained directly from PALCO. This type of information is proprietary and cannot be confirmed by an independent source. This estimated average annual harvest volume over the past 10 years is comparable to a projected average annual harvest per decade.

I-DMI-7

Comment noted. Through all of the analysis of potential effects on the social and economic environment, the project alternatives are compared to the No Action Alternative, Alternative 1. This alternative represents assumptions regarding existing conditions over time. It does not represent current conditions. Historic harvests as well as harvests proposed under the No Action Alternative are assumed to be conducted in compliance with all applicable laws. Any additional comparison of the alternatives to historic harvest and employment figures are presented only to illustrate how Alternative 1, the No Action Alternative, is different from current conditions. We believe this additional analysis is helpful to the reader and does not detract from comparison of the alternatives and the No Action Alternative, Alternative 1.

Regarding responses to the report presented as comment on the Draft EIS/EIR by the Siskiyou Forestry Consultants, please see the responses to comments from the Humboldt Watershed Council (HWC-1 through HWC-14).

I-DMI-8

Comment noted. We disagree that additional independent review of the economic analysis in the Draft EIS/EIR should be required prior to publication of the Final EIS/EIR. We believe the economic analysis presented in the Draft EIS/EIR is accurate and appropriate. Prior to publication, the text had been reviewed by senior economists at the U.S. Forest Service as well as the California Department of Forestry. The analytical methods are sound.

I-DMI-9

Please see responses for I-DMI-6 and I-DMI-7 above and I-DMI-10 and I-DMI-11 below.

I-DMI-10

We disagree with your conclusion that the job loss figures presented in the Draft EIS/EIR are meaningless because historic harvest levels cannot be continued into the future. To begin, historic harvest rates could continue into the future for some period of time, and this rate of harvesting might or might not result in a long-term sustainable rate of harvesting. Section 2.5.1 of the Draft EIS/EIR provides a detailed description of No Action Alternative, which by design incorporates harvest levels that would comply with PALCO's proposed SYP. As such, comparison of the No Action Alternative with the other four alternatives is appropriate.

I-DMI-11

We disagree. The tradeoff analysis suggested in this comment is overly simplified and ignores many of the potential social and economic effects that are presented in the Draft EIS/EIR. The evaluation of potential effects cannot be limited to weighing just the loss of PALCO workers against the proposed $480 million cost of protecting federally-listed species and critical habitat. Rather, complete analysis requires evaluation of all the potential social and economic impacts that would result from approval of a Final HCP/SYP and issuance of an Incidental Take Permit. And, although the potential financial impacts on the landowner are outside the scope of an EIS, they are taken into account in evaluating minimization and mitigation measures required of an applicant for an ITP under the ESA. The impacts of Alternative 4 would therefore include not only the loss of direct timber-related employment and income but also the loss of indirect employment and income, county timber-related revenue, and sales tax revenue, and the loss of income to PALCO. These effects would continue not just for the five years cited in the comment, but for decades. Over the long term, compensation for all of these costs would significantly exceed $480 million. As such, the Stewardship Plan could not be considered the most economically viable alternative.

II-DMI-1

The agencies consider that an adequate range of alternatives has been evaluated. See response to GEC-9. Section 2.4.4 discusses how components of the Headwaters Forest Stewardship Plan (Trees Foundation, 1997) was incorporated into Alternative 3. In addition, the commentor does not provide any information as to how implementation of the indicated plan for 63,000 acres would be most ecologically and economically viable alternative for the over 200,000 acres of PALCO ownership which is what the EIS/EIR must consider.

DMW-1

In discussing the implementation of AB 1986, the potential acquisition of other lands is indicated. However, whether or not any such funds would actually be available after the possible purchase of the Owl Creek tract is unknown. If such funds are available at that time, and PALCO is a willing seller, such a transaction would be possible. However, purchase of lands authorized by the California legislature does not require

evaluation in an EIR, and that purchase could proceed at any time funding and agreement existed. Additionally, Alternative 4 includes analysis of a 63,000-acre area that includes the area this comment refers to. As indicated in Section 2.3, the final decisions of the agencies may include components of different alternatives that are based on the analysis in the EIS/EIR.

DMW-2

As noted in the response to DMW-1, such acquisition could occur at any time funds were available and PALCO was a willing seller. In addition, the BLM was negotiating with PALCO with respect to access.

DMW-3

See response to DMW-1, that this area is analyzed as part of Alternative 4. As noted in Section 2.3, however, the agencies cannot unilaterally impose some components of the alternatives on PALCO without PALCO's consent. The Reserve design indicated in Alternative 2 is the land PALCO was willing to sell at the time of the original September 1996 agreement. Section 3.17 evaluated the recreational potential of the Headwaters Reserve.

DRM-1

Based on public comments and issuance criteria, the agencies have considered additional mitigation to be appropriate to reduce the risk of potential adverse effects. Details of this additional mitigation are presented in Appendix P of the Final EIS/EIR. The additional mitigation for headwater stream protection is to place RMZs along Class III streams. Refer to CAG-44 for a description. This additional mitigation would provide the following protection:

- Reducing the delivery of any fine sediment from overland flow near these streams
- Maintaining more LWD in Class III streams, thus reducing sediment transport and minimizing the potential for gullying in these channels
- Reducing the risk of mass wasting and the associated delivery of both coarse and fine sediment to downstream Class II and I streams.

In addition, watershed analysis results may determine that additional restrictions or less are appropriate.

DRM-2

In Section 3.6 of the Draft EIS/EIR, the shade and large woody debris riparian analyses based upon recent studies and the application of the prescriptions to those studies indicate that the prescriptions for perennial fish and non-fish bearing streams would be sufficient to maintain riparian function, except microclimate.

DRM-3

The Draft EIS/EIR addresses the landslide hazard mitigation in Section 3.6. Based upon further review, however, the agencies have proposed new mitigation that is subject to watershed analysis alteration. The new mitigation includes no harvest and no construction of new roads on mass wasting areas of extreme mass wasting hazard, very high mass wasting hazard, high mass wasting hazard, inner gorges, headwall swales, and unstable areas, including those within RMZs on Class I, II, and III streams until watershed analysis. In addition, the watershed analysis process will require NMFS and FWS to establish prescriptions for implementation upon the completion of the watershed analysis. Further details concerning the mass wasting avoidance strategy are presented in Appendix P of the Final EIS/EIR.

DRM-4

Following analyses performed for the Draft EIS/EIR and evaluation of comments and information provided on the draft document, additional standards and prescriptions have been included as part of the Final HCP/SYP. These are provided in Appendix P of the EIS. They are intended to provide additional measures and prescriptions needed to establish a trend toward properly functioning aquatic habitat conditions on PALCO lands; such a trend is needed as a component of recovery efforts for coho salmon in this ESU (see EIS/EIR section 3.8).

DRM-5

See response to DRM-38 and DRM-45.

DRM-6

The watershed analysis process shall be open for public comment. PALCO will present to the public what the company will be doing with respect to each watershed analysis. The goal of this interaction is to obtain public input on problems and priorities. Members of the public that have been technically trained may also participate in the technical analysis. Upon completion of each watershed analysis, PALCO will also present the results of the watershed analysis and justifications of methodologies and prescriptions.

1. The NMFS and FWS, in consultation with CDF, the North Coast Regional Water Quality Control Board, and CDFG, shall establish a peer review process to evaluate, on a spot check basis, the appropriateness of completed analyses and prescriptions that are developed through the watershed analysis process prior to the completion of the first watershed analysis.

DRM-7

Anticipated changes in the watershed analysis process include the following:

1. Using methods developed by Pacific Watershed Associates for assessing surface erosion from roads
2. Modifying the riparian module to reflect the growth characteristics of redwood trees
3. Modifying the hydrology module to address changes in peak flows due to canopy removal and rainfall interception losses.

Under the current framework as discussed in Vol. IV, Part D, Section 4, of the Draft HCP/SYP, the agencies will assist in and approve module modifications to the WDNR procedure. Also refer to DRM-45 for additional discussion of the watershed analysis process.

DRM-8

We concur with this point, and the Final HCP/SYP has been modified accordingly. The sediment assessment will occur in the listed watersheds over five years.

DRM-9

See response to GP-3.

DRM-10

See responses to LMR-12, LMR-15, CAF-5, and CAF-7.

DRM-11

The statement in the HCP that the aquatic properly functioning condition matrix does not constitute permit enforcement standards is correct. However, as stated in Section 3.8.3.1,Criteria for Evaluation, of the Draft EIS/EIR, the federal and state agencies has identified the conditions in the matrix as required for reasonably healthy aquatic habitat conditions for priority fish species. In this same section, under the heading "Thresholds of Significance," the Draft EIS/EIR also states that failure to provide improving aquatic habitat conditions or a properly functioning aquatic system over the term of the HCP constitutes a threshold of significance.

The criteria for aquatic properly functioning conditions have been used to characterize current conditions in any given watershed. Based on available information, and as acknowledged in the Draft HCP/SYP and the Draft EIS/EIR, aquatic habitats in many watersheds currently are not functioning properly. More complete assessments of instream and riparian habitat conducted during watershed analysis will clarify the extent to which and where this is the case. These habitat criteria, which may be modified over time as the result of effectiveness monitoring and other new information, will be used to guide decisions that will lead to prescriptions developed during watershed analysis for hydrologic units.

The aquatic properly functioning condition matrix has been, and continues to be, a key tool that NMFS uses to evaluate adequacy of mitigation. This should continue to be the case until more current information than on what the matrix is based becomes available.

DRM-12

The habitat goals of "1 pool every 6 bankfull channel widths" and "minimum pool area of greater than 20 percent" are taken from the aquatic properly functioning condition matrix found in Appendix K of the Draft EIS/EIR. The agencies that developed the matrix employed what they deemed was the best available information at the time. As indicated on the matrix, however, it is a "work in progress." The agencies will periodically review and revise as appropriate the targets for properly functioning conditions to reflect the findings of the most recent research.

We agree that the cited pool frequencies could correspond to those found in streams with "poor-quality habitat and very low wood loading." They could also, however, correspond to frequencies that occur in relatively pristine conditions. The targets are necessarily general given the wide range of conditions that occur even in systems unaffected by land use. We acknowledge, however, that Table 16, which is only a summary, omits elements of the aquatic properly functioning condition matrix, including different pool frequency targets for streams with gradients less than and more than three percent. The complete matrix in found in Volume IV, Part D, Section 6. Further, properly functioning conditions are indicated by all parameters considered as a whole, and not with regard to one or two of them. For example, the matrix not only presents targets for pool frequency, but for pool depth as well. In addition, the targeted pool frequencies are for mostly "(>=90%)" pools associated with LWD. As such, we do not agree that the targeted conditions "codify poor to mediocre habitat as the goal for channel condition".

Regarding the comments pertaining to observed pool frequencies for different channel types and gradients, again, the targeted conditions are necessarily general given the wide range of conditions. Even if a frequency of one pool per five to seven channel widths would be met even with no wood present, the target condition still requires that the pools be associated with wood and be of an appropriate depth (i.e., ">3 feet maximum depth"). Nevertheless, we agree the matrix could be improved by including additional targets for different types of channels. With future revisions of the matrix, additional channel-type- and gradient class-specific targets will likely be developed for pools formed by LWD that reflect properly functioning conditions in North Coast Region streams.

We agree that the size of woody debris can significantly affect its functionality in streams. The aquatic properly functioning condition matrix presented in Appendix K of the Draft EIS/EIR and the Draft HCP/SYP actually does include targets for not only wood volume, but also targets for quadratic mean length and diameter adjusted according to bankfull width. These latter targets were not included in Table 16, again, which is only a summary of the matrix.

DRM-13

Thank you for your comment. The agencies have defined the channel migration zone for the final HCP as the area adjacent to the stream constructed by the river in the present climate and inundated during periods of high flow. The floodplain is delineated by either the flood-prone area or the 100-year floodplain, whichever is greater (from Rosgen, 1996).

DRM-14

The Draft EIS/EIR analyzes the HCP buffer in Section 3.7. Buffers were evaluated relative to protection within the context of riparian management goals. For this analysis, the level of protection required to maintain or restore the aquatic system was the main goal. The riparian functions evaluated specifically include the following: shade, LWD recruitment, leaf and needle litter inputs, bank stability, sediment control, and microclimate. As part of the Draft EIS/EIR evaluation, these specific RMZ prescriptions were examined. The Final HCP/SYP and the Final EIS/EIR have expanded the 30-foot no-harvest band to 100 feet and have eliminated the limited entry zone. The Final EIS/EIR also evaluates the 100-foot, no-harvest band combined with the 70-foot, selective harvest band relative to protection of riparian function in Section 3.7. Your concern regarding the channel migrating outside of the no-harvest band is not founded since all RMZs are measured from the channel migration zone. No harvest is allowed within the no-harvest band for the same reasons outlined in your comment. In addition, see response to comment PH-22.

Included in Section 3.7 of the Draft and the Final EIS/EIRs is discussion regarding the watershed analysis. Additional discussion of watershed analysis can be found in Section 3.6 in the Draft and the Final EIS/EIRs. Additional language has been added in the Final HCP/SYP and the Final EIS/EIR to ensure that post-watershed analysis prescriptions maintain riparian function critical in providing a properly functioning aquatic system for fish. The minimum-protection, post-watershed analysis provides the means to maintain a functioning riparian system that minimizes risk to fish and the aquatic system. The targets for large tree recruitment and retention (i.e., the largest 18 trees per acre available in each harvest entry) and 40-inch-diameter-class, basal area distribution per acre dbh. Refer to Appendix P of the Final HCP/SYP for a discussion of tree and basal area retention and to the Final EIS/EIR for a discussion of riparian function criteria added as additional mitigation. In addition see response to comment PH-23.

DRM-15

Thank you for your comment. The Draft EIS/EIR presented a discussion on the limitations of the 10-foot no-harvest portion of the RMZ along Class II streams in Section 3.7 under Alternative 2, interim strategy. The Final HCP/SYP provides for 30-foot no-harvest buffers along all Class II watercourses, which should eliminate your concern regarding the interim strategy 10-foot no-harvest band. In addition, the selective entry band along Class II waters (30 to130 feet) limits the number of large trees harvested within the rest of the RMZ.

DRM-16

A discussion regarding the need for large woody debris is presented in Section 3.7 of the Draft EIS/EIR under the heading LWD Recruitment, which begins on page 3.7-60. In addition, based on public comments

and on FESA and CESA issuance criteria, the wildlife agencies consider that additional mitigation above that analyzed in the Draft EIS/EIR would be appropriate to reduce the risk of potential adverse effects. Details of this additional mitigation and the associated monitoring plan are presented in Appendix P of the Final EIS/EIR. Among other changes, the no-harvest buffers along Class I and Class II waters are expanded in the Final HCP/SYP to 100-feet and 30-feet-wide, respectively. These expanded no-harvest bands will maintain large tree, LWD recruitment potential where sufficient levels are already available, and will allow trees to grow larger in areas where this size class does not exist. Also, outside the no-harvest band, the Final HCP/SYP provides the means and targets for large tree recruitment and retention (i.e., the largest 18 trees per acre available in each harvest entry) and a target for diameter class basal area distribution per acre of trees up to 40 inches dbh. Refer to Volume IV, Part D, Section 1.2.2 of the Draft HCP/SYP (PALCO,1993) for a discussion of tree and basal area retention. See Section 3.7.4 of the Final EIS/EIR for a discussion of riparian function criteria.

DRM-17

Comment noted. The Final HCP/SYP includes additional mitigation measures to protect Class III watercourses. Refer to the response to ALA-28. With regard to concerns over "shade" along Class III watercourses, refer to the response to CAG-26.

DRM-18

The Draft EIS/EIR evaluates the effects of implementing the proposed RMZ prescriptions with respect to LWD (see sections 3.4, 3.6, and especially 3.7 and 3.8) and the agencies consider the level of information and anticipated trends in LWD to be adequate for Class I and Class II streams.

Predicting changes in fish population trends would be difficult and involve questionable assumptions. And, it is unlikely any "absolute" answers would be generated. Monitoring changes in fish population trends, aquatic habitat, and upslope conditions is a fundamental purpose of the various monitoring strategies in conjunction with watershed analysis. As trends are observed, appropriate modifications in timber harvest and related activities will occur.

DRM-19

Comments noted. We agree that modeling watershed sensitivity is difficult. See response to DRM-27.

DRM-20

See comment DRM-3.

DRM-21

We agree that the Disturbance Index (DI) is a simplified algorithm for assessing complex landscape-scale processes. The DI is intended as one part of an overall strategy to assess landscape-scale sensitivity, disturbance and potential impacts of timber harvest and related activities. For example, steep, landslide-prone slopes would be addressed through watershed analysis, not the DI.

DRM-22

We agree that conducting pebble counts alone would be inadequate for determining whether a stream is sediment loaded. The previous paragraph on the same page of the HCP reports that sediment samples have also been taken, which provides insights regarding whether a stream is "sediment loaded." Regardless, this section of the Draft HCP/SYP characterizes PALCO's current monitoring efforts. The Final HCP/SYP will describe a revised monitoring program. See response to CAG- 48.

We note the comment pertaining to the discussion of fine sediment. Section 3.8.2 of the Draft EIS/EIR substantiates that a wide range of sediment levels occurs in streams on PALCO lands. This is based on information collected during stream surveys by both PALCO and CDFG. Although the discussion of fine sediment does not include the effects of sediment discharge on spawning redds, this was discussed in under Section 3.8.2 of the Draft EIS/EIR. The contention that "discriminating salmon" could find good quality gravel in otherwise sediment-impaired streams does not obviate the HCP from needing to achieve over time properly functioning conditions with respect to channel conditions.

The recommendation for using "channel widths per pool" to evaluate pool frequency instead of "pools per mile" is noted, and we agree. This section to which the comment is directed discloses recently employed methods and data collected through monitoring on PALCO lands. The aquatic matrix for properly functioning conditions (shown in Appendix K of the Draft HCP/SYP), however, uses the metric of the "number of pools per mile equivalent to pool to pool spacing based on bankfull stream widths." The metrics currently employed during monitoring will be reviewed by the agencies and revised. This is discussed in response to CAG- 48.

DRM-23

Comment noted. A discussion of channel morphology can be found in Section 3.4.2.3. of the Draft EIS/EIR.

DRM-24

See comment DRM-3.

DRM-25

In order to more closely link the disturbance index with observed, in-stream parameters (i.e., temperature and fine sediment loading), the analysis scale has been reduced down to the hydrologic unit. By looking at individual hydrologic units, rather than larger watershed assessment areas (WAAs), it is anticipated that channel conditions will better reflect upslope management practices. Further reductions in analysis scale to individual Class I sub-basins are also provided for and are discussed in Appendix P of the Final EIS/EIR.

The disturbance index is not intended to be a stand-alone tool for guiding management activities. In addition, the mass wasting avoidance strategy (refer to the Final EIS/EIR, Section 3.6.3.1 and Appendix P, for further detail). Further, the watershed analysis process is intended to locate sensitive areas and prescribe appropriate management activities, if any, for these areas.

DRM-26

Section 3.8.5 of the final EIS/EIR discusses information on the current status of coho salmon populations in the vicinity of PALCO lands. References are provided, as available. However, even though populations have been recorded, the exact status of these populations is not clear and will need further evaluation as part of monitoring efforts included in the HCP/SYP.

DRM-27

Comments noted. The risk rating described in the Draft HCP is not used to guide management activities. Rather, it is replaced by the modified Disturbance Index (DI) and watershed analysis. In response to public comment, the DI has been modified to include roads and mass wasting features. Further limitations are place on timber harvest and related activities when the DI exceeds a pre-determined threshold value. These two processes will define watershed sensitivity and dictate appropriate management practices.

DRM-28

Point is noted. As noted in the Draft HCP/SYP (Volume II, Section H, Part 1.4), the Van Duzen WAA "existing data indicate that this WAA had the worst observed values for percent fines <0.84 mm, and <4.7 mm, and percent pools." Further, the percent pools for the Van Duzen WAA are categorized as low, as discussed in Section 1.2 of Volume II, Section H, of the Draft HCP/SYP. Finally, as discussed in Volume II, Section H, Part 1.4.5, "data on habitat conditions and fish abundance in the WAA are not complete. Consequently, it is clear that additional information on habitat and fish abundance needs to be collected, either by PL or the state."

DRM-29

This issue is discussed in the Draft EIS/EIR in Section 3.8.

DRM-30

The Draft EIS/EIR does not consider watershed analysis as a mitigation measure but rather as a means of refining the mitigation measures included in the proposed mitigation. However, the further determination of whether or not effects related to grazing occur and addressing those with mitigation measures is appropriate, because the agencies are disclosing to the public and decision makers how the process will work.

DRM-31

See responses to LMR-12, LMR-15, CAF-5, and CAF-7.

DRM-32

The existing condition of PALCO lands is discussed in the Draft EIS/EIR as well as the anticipated rates of recovery (see Sections 3.4, 3.6, 3.7, and 3.8). With respect to watershed analysis, see response to DRM-6.

DRM-32

In many cases, the measures implemented by PL may take several years or decades for the benefits to coho populations are recognized. The anticipated effects of the measures are discussed in the Final EIR/EIS in Sections 3.4 through 3.9.

Point noted regarding the watershed analysis process. According to Vol. IV Part D Sec. 4 of the Draft HCP/SYP, "federal and state agencies have the option to participate in the process at any stage." The agencies shall review the watershed analysis and shall establish the prescriptions for implementation upon the completion of a watershed analysis. Peer review is required if any Pacific Lumber or agency member of the watershed analysis team disagrees with the prescriptions recommended by the analysis team.

DRM-33

As noted in the Draft HCP/SYP and the Draft EIS/EIR, the Washington State watershed analysis process was to be modified for use on the PALCO ownership. Consequently, rather than undermining the credibility of the watershed analysis process as claimed by the commentor, the inclusion of sediment budgets indicates how the process will be strengthened.

PALCO will conduct sediment source assessments as part of the watershed analysis. This consists of a mass wasting component and a surface erosion component similar to those described in the Washington State process. Modifications will be made for road-related sediment delivery, where the Pacific Watershed Associates methodology will be used.

DRM-34

Based on public comments and issuance criteria, PALCO will assess the existing road network and associated sediment sources on its lands either within five years as part of watershed analysis or within five years of the planned stormproofing. Inventories will be updated within five years of the actual stormproofing. All roads will be stormproofed to the standards identified in Weaver and Hagans (1994) within the first 20 years of the Plan, at a minimum rate of 750 miles per decade and 75 miles per year. Sediment sources must be included as a part of watershed analysis, which must be completed within five years. See responses DRM-8 and LMR-16.

DRM-35

Comment noted. The agencies will actively participate in the review of the required CMZ mapping to be completed by individuals who have training and experience in fluvial geomorphology. An individual with a "degree" in fluvial geomorphology is not required.

DRM-36

See the response to CAF-5. When geologic determinations on road construction are called for, the mass wasting avoidance strategy in the Final EIS/EIR, Appendix P, states that evaluation shall be accomplished by qualified professional geologists, including but not limited to, certified engineering geologists licensed by the state of California.

DRM-37

The findings of the trend monitoring activities carried out in the recent past by PALCO and the CDFG have been summarized and are presented in Section 3.8.2 of the Draft EIS/EIR, in Table 8 of Volume I of the Draft HCP/SYP and in Volume II Part H of the Draft HCP/SYP. Also refer to the responses to CAG-28, CAF-4, CT-2, and CT-3.

DRM-38

Limits placed on the range of possible restrictions include only riparian management zones. No prescriptive limitations are placed on areas of mass wasting, surface erosion hazard, and road construction. Areas of high, very high, and extreme mass wasting hazard, for example, can further the extent of streamside protection. The watershed analysis process is intended to provide the agencies with several management options to address aquatic resource concerns. Vol. IV, Part D, Sec. 4, of the Draft HCP/SYP states that "the final determination to proceed with prescriptions, developed as a result of watershed analysis, is retained by the permitting agencies."

Watershed analyses "will subsequently be reviewed and updated as needed so that they remain current for the life of the permit." Modifications to the watershed procedure are subject to the review and approval of the agencies. According to Vol. IV, Part D, Sec. 4, of the Draft HCP/SYP, "federal and state agencies have the option to participate in the process at any stage." In addition, see the response to DRM-45.

DRM-39

Comment noted. See responses to DRM-38, TNL-17, ME-4, and CAG-16.

DRM-40

Opinion is noted. The agencies will maintain an important role in helping to design PALCO's monitoring program. Their participation in the watershed analysis process will help ensure that prescriptions developed

through this process will be informed by the findings of monitoring and will be effective in providing protection of aquatic resources.

DRM-41

Thank you for your comments. An analysis of LWD effect on channel stability is presented in Section 3.7.

DRM-42

We agree. See Section 3.7.4.1, Streambank Stability, and Section 3.7.4.3, Streambank Stability in both the Draft and the Final EIS/EIRs. The evaluation of streambank stability in these sections was based on the widths of the respective RMZs and activities allowed within the buffer that may affect root strength and, thus, streambank integrity.

DRM-43

Thank you for your comment. Based on public comments and issuance criteria, the agencies consider the additional mitigation presented in Appendix P of the Final EIS/EIR to be appropriate to reduce the risk of potential adverse effects from mass wasting.

DRM-44

Comment is noted. Refer to response to DRM-45.

DRM-45

During watershed analyses, the best available information will be used to craft prescriptions that will be based on ongoing biological inventories, the results of monitoring, and assessments of conditions in each hydrologic unit. What metrics will be monitored in each hydrologic unit will vary and are not predetermined. Monitoring approaches proposed by PALCO will be reviewed by the agencies and will not be implemented until they have received the agencies' approval. Further discussion of how the monitoring program will be developed with agency oversight is presented in the response to CAG-48.

The comment incorrectly infers that use of new understandings of forest and aquatic ecosystems gained during the life of the HCP will not be allowed to modify the elements of the plan. During the life of the HCP, science will no doubt add to and refine our knowledge of the habitat requirements of aquatic species, impact mechanisms, and mitigation measures. Agency biologists will employ these insights when reviewing proposals for prescriptions developed during the watershed analysis.

Consultation between PALCO and the agencies will occur in various contexts. If a "changed circumstance" occurs, (described in Volume IV, Part H, of the Draft HCP/SYP and Appendix P of the Final HCP/SYP) watershed analysis will be initiated to assess the effected area; this may lead to modifications of prescriptions. In the absence of perturbations causing "changed circumstances," PALCO and the agencies would participate in watershed analysis at least once every five years. This would provide another context in which to modify prescriptions or develop new prescriptions. In either event, the agencies would give final approval of prescriptions.

DRM-46

Point noted. Based on public comment and FESA and CESA issuance criteria, the mass wasting avoidance strategy has been strengthened, see Appendix P, Final EIS/EIR. The mass wasting areas of concern now include those areas rated as extreme, very high, and high. These areas all receive the same no-harvest prescription prior to watershed analysis.

The landslide hazard rating which is one component of the analysis in the Draft EIS/EIR, would be supplemented by more-detailed field review during THP preparation and watershed analysis.

DWC-1

Comment noted. In addition, the threshold of significance is to achieve properly functioning aquatic habitat across PALCO's ownership over time so that stream habitat disturbance is similar to natural conditions described in the comment.

DWC-1

Comments noted. The agencies agree that coho salmon abundance may be influenced by limiting factors at one or more specific life history stages.

We also agree with the comments that anadromous salmonids (i.e. coho) evolved in a dynamic environment. The Draft EIS/EIR, Section 3.6 discusses some of the dynamic aspects of the landscape in the Plan area.

DWC-2

Though compensation as described can occur, it is the purpose of an approved ITP to achieve over time a properly functioning aquatic habitat so that any returning coho salmon has appropriate habitat. In addition, the ESA prohibition against take (including harassing or killing) applies to all life stages of an organism.

DWC-3

Comment noted. The Draft EIS/EIR discusses these issues in sections 3.4 and 3.8. Although salmon can tolerate a wide range of temperatures, the goal of an approved HCP would be to attain a properly functioning aquatic habitat that achieves target conditions, including stream temperatures.

DWC-4

Comment noted. The summer fog belt influences stream temperatures.

DWC-5

This point is discussed in the Draft EIS/EIR in Section 3.8.

DWC-6

Comment noted. The HCP/SYP restricts road construction on steep, erodible hillslopes.

DWC-7

The issues related to salmon decline are discussed in the Draft EIS/EIR in Section 3.8.

DWC-8

Your opinion is noted.

DWC-9

Comment noted. See response to LMR-16.

DWC-10

Comments and opinions on RMZ widths and effectiveness noted. These issues are discussed in the Draft EIS/EIR in Section 3.8.1. FEMAT does envision adjustments to buffer widths on a site-specific basis through

watershed analysis, and does not preclude application of adaptive management. Note that RMZs are intended to provide multiple functions; providing shade and LWD recruitment are but two of them. Refer to the response to IFR-11. Opinion regarding the role of old growth in relation to coho salmon habitat is noted.

DWC-11

Comment noted. This issue is discussed in the Draft EIS/EIR in Sections 3.4, 3.6, 3.7, and 3.8. See response to CAG-54.

DWC-12

Your comment is noted.

DWC-13

Comment noted.

DWC-14

Your comment/opinion is noted. See response to LMR-15.

DWC-15

Comments noted. In response to public comments and permit issuance criteria, additional mitigations are expected to further benefit coho salmon habitat.

EB-1

Please see response to BRC-1, BRC-2, ALA-135, and JBBDS-1.

EB-2

Cumulative impacts are addressed individually for each of the major resources in Section 3 of the Draft EIS/EIR and in Volume III, Part H of the Draft HCP/SYP. Mitigation measures proposed in the HCP/SYP are expected to achieve, over time, the target conditions. Assessment of cumulative impacts in the Final HCP/SYP will include a description of assessment areas, information about past and future projects and other requirements of the Forest Practice Rules, use of the disturbance index described in the HCP/SYP to give an overview of watershed impacts and limitations on the amount of watershed area that can be disturbed at any one time, and an assessment of interactions between landscape and management factors. Cumulative impacts will be further addressed as part of watershed analysis that the HCP/SYP requires to be conducted within 5 years.

EB-3

The Draft EIS/EIR addresses water quality concerns in Section 3.4. The agencies believe that the mitigation of the HCP and the mitigation required for timber management by the CDF listing of Freshwater Creek and Elk River as cumulatively impacted by sediment will improve water quality in the Freshwater Creek and Elk River watersheds.

EB-4

The potential effects on Class III streams and downstream habitats and water quality are addressed in sections 3.4, 3.6, 3.7, and 3.8 of the Draft EIS. No specific information is provided to support the need for one site potential tree protection on these streams. The Final EIS/EIR, however, does reconsider Class III streams.

EB-5

The Draft EIS/EIR evaluates the effects on these species under the various alternatives and various prescriptions.

EB-6

See response to ALA-114.

ELF-1

Section 10(a)(1)(B) of the FESA describes issuance criteria that must be satisfied before an incidental take permit can be issued: 1) the taking will be incidental to an otherwise lawful activity; 2) the impacts will be minimized and mitigated to the maximum extent practicable; 3) adequate funding will be provided; 4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species; 5) and other necessary measures are met. The FWS will determine whether these criteria are met in its Findings and Recommendations (under preparation).

The Draft HCP has been substantially improved by additional take minimization and mitigation measures as a result of public comments and agency concerns. The additional measures directly address PALCO's obligation to mitigate the impacts of take to the maximum extent practicable and insure that the Covered Activities will not appreciably reduce the likelihood of the survival and recovery of the Covered Species in the wild under Section 10(a)(2)(B)(ii) and (iv) and fully mitigate the impacts of take of the Covered Species under Section 2081 of CESA.

The FESA also requires that the permit application and associated documents be made available to the public for review and comment. The draft documents have been circulated to the public and have been revised, as appropriate, in response to comments. The Final HCP (see Appendix P) is indicative of how the agencies responded to comments.

ELF-2

The foundation of sound, politically unbiased natural resource management is credible, objective science. The Final HCP is based on the best available scientific information and has been reviewed by qualified scientists from outside the agencies. For some threatened or endangered species, such as the marbled murrelet, there some degree of uncertainty about population sizes and rates of population change. In such cases, the HCP proposes a conservative approach to habitat management. **[True??]**

ELF-3

The wildlife agencies believe that the proposed HCP addresses the issues identified in this comment. The management objectives are based upon existing population data from PALCO and other landscapes, conservation measures have been upgraded to provided greater protection than proposed in the Draft HCP, rigorous monitoring is included and a comprehensive adaptive management program is described. Also refer to the responses to ABF-6, ABF-7, ABF-8, ABF-9, ABF-13, ABF-14, ABF-17, ABF-22, PC-7, PC-8, PC-12 , PC-15, ALA-23, ALA-24, ALA-71, JLK-3, and JLK-8.

ELF-4

See response to comment ALA-12. The comment does not specifically identify the alternatives rejected or the alternatives preferred by the commentor. Nonetheless, a general response may be offered. Final EIS/EIR Appendix P, Section E, contains a detailed examination of the alternatives considered and why they were not selected, in part as follows:

A broad range of impact avoidance, mitigation, and conservation strategies were proposed and considered in the course of preparing this Plan, including variations on the LTSY projections and HCP strategies.

Four primary alternatives are summarized here: No Take; Selective Harvest; Expanded (61,000-acre) Headwaters Reserve; and Higher Midterm Timber Production.

1. Take Avoidance

Under this alternative, activities in the Plan Area would be conducted in a manner to avoid take of any federally listed, state-listed, or state candidate species. Since no take would occur, PALCO would not need or obtain ITPs from the FWS, NMFS, or CDFG. PALCO would not be obligated to implement measures to minimize and mitigate the effects of take. Consequently, the Headwaters Reserve would not be established and the Plan would not be implemented. This alternative was rejected because it would not provide the following environmental benefits associated with the Plan as proposed:

1. Protection of the Headwaters Reserve, including buffer areas around the old growth forest within the Reserve, in perpetuity;

2. Protection of the MMCAs and associated internal buffer areas;

3. Implementation of a set of comprehensive, inter-related habitat conservation strategies for terrestrial and aquatic species in the Plan Area; and

4. Implementation of various conservation measures for non-listed Covered Species.

This alternative also was rejected because of its potential negative effects, including:

1. Fragmentation of second growth and residual stands adjacent to old growth areas, with potential for resulting in indirect impacts to old growth habitat areas through potential increased predation on marbled murrelets; and

2. Continued economic uncertainty regarding the amount of harvest that might be expected from the PALCO property in the future and the resulting adverse economic impact to the economy of Humboldt County.

2. Selective Harvest

Under this alternative, the SYP elements of the Plan as proposed would be altered to eliminate clear-cutting and salvage logging in the Plan Area. Stands would be subject to selective harvest every 20 years, with a timber stand target of late seral forest conditions (CWHR 6). The maximum yearly harvest would be 2 percent of the timber inventory. In addition, a minimum of 20 percent of the property would have to be in late seral habitat. Two sub-alternatives for RMZs also were considered:

- Expansive riparian buffers maintained for the term of the ITPs, and
- Expansive riparian buffers as interim measures, with final buffers being determined using a Washington Department of Natural Resources (DNR)-style watershed analysis.

This alternative was not selected because a selective harvest strategy would require extensive road construction. It would limit PALCO's ability to use best silvicultural practices to manage its forests. The net improvement in aquatic protection over that in the proposed Plan is uncertain but is probably limited. The alternative would also have a significant negative economic impact on PALCO. With respect to economic impacts, the wide riparian buffers alone would render unharvestable more than 50 percent of PALCO's ownership. (Map 36 in Volume V illustrates the application of the buffers to the Plan Area.)

3. Expanded Headwaters Reserve

Under this alternative, a 61,000-acre reserve would be established instead of the 7,500-acre reserve contemplated in the Headwaters Agreement. The approximate design of the reserve would be a large circle encompassing the six redwood groves (Allen Creek, Shaw Creek, Bell-Lawrence, Right 9, Owl Creek, Elkhead Springs) and the Headwaters tract and buffer. Outside of the reserve, the remainder of PALCO's property would be managed in the same manner as proposed in this Plan.

Approximately 30 percent of PALCO's holdings in the Plan Area would become part of the reserve, include stands with significant amounts of high quality old growth timber. PALCO is unwilling to commit such a large amount of land to habitat without compensation, and neither FESA nor CESA requires such a commitment. The only method of creating the preserve, then, is through condemnation or voluntary sale. Neither the federal nor state governments has demonstrated that funds are available to acquire the reserve; and California voters have turned down ballot measures aimed at acquiring this property. The acquisition amount would far exceed any conservation acquisition undertaken by the federal and state governments since the enactment of the Land and Water Conservation Fund. In the absence of available funds for acquisition of the land, this alternative is not practicable.

4. Increased Midterm Production

This alternative was developed to determine the possible upper range of timber production on PALCO's lands. Under this alternative, higher harvest levels would be allowed during the midterm of the ITPs. Riparian buffers would be 125 feet for Class I streams and 75 feet for Class II streams, with extensive timber harvest allowed within these zones. Limits on harvesting would be set by existing FPRs. No MMCAs would be established; however, the Headwaters transactions would be completed. This alternative was rejected primarily because of the inherent conflicts between the timber production goals of the approach and ITP requirements to minimize as well as mitigate effects on listed species.

Alternatives are also discussed in Section 2.3, 2.4, and 2.5 of the EIS/EIR.

ELF-5

The ESA authorizes the Secretaries of Interior and Commerce to issue permits that allow for the taking of listed species incidental to carrying out otherwise lawful activities, provided that an applicant for an incidental take permit, among other requirements, prepares a conservation plan and ensures that adequate funding for the plan will be provided. To issue an ITP, the FWS and NMFS must be assured the applicant will adequately fund implementation of the HCP. The Secretaries may also require other assurances that the plan will be implemented. The Final HCP provides the necessary assurances that these conditions will be met. See response to JBBDS-1 and Section H, Funding in the HCP (Appendix P).

Funding for project implementation is generally not a subject to be analyzed pursuant to NEPA or CEQA. NEPA and CEQA require that the EIS/EIR assess the impact of a project on the natural and physical environment and on the relationship of people with that environment (see Public Resources Code, sec. 21100; see also 40 CFR sec. 1508.14).

ELF-6

See response to ALA-71

ELF-7

See response to JBBDS-1 and SCE-96.

ELF-8

The Section 10(a)(1)(B) issuance standard, as related to recovery, states that proposed incidental take will "not appreciably reduce the likelihood of survival and recovery of the species in the wild". The FWS will make this determination through the internal Section 7 consultation that it will conduct on the Section (a) permit applications. During the consultation process, the FWS will use the best scientific information available, including information from the HCP, the EIS/EIR, and the SYP to make a final determination as to whether proposed incidental take will appreciably reduce the likelihood of survival and recovery of the covered species in the wild. The HCP and EIS/EIR describe the impact that would result from such taking, but the FWS and NMFS will make an independent finding in this regard, as well as a finding of whether the taking would result in jeopardy.

ELF-9

The Final HCP contains measures for avoiding impacts to listed plants, and the Biological Opinion will cover impacts to Federally-listed plants.

ELF-10

The Final HCP will establish a minimum population level that is several times larger than the level recommended for the area by the draft Northern Spotted Owl Recovery Plan. Pending completion of the Biological Opinion, it is doubtful that such a strategy could be determined to constitute jeopardy to the species across its entire range.

ELF-11

In analyzing the potential for adverse cumulative effects from implementation of the HCP, all reasonable efforts were made to identify and assess the direct, indirect, and combined effects on northern spotted owl and other aspects of the environment. The HCP strategy is structured so that take is directed generally toward single and non-nesting pairs and the population on the ownership will be closely monitored to facilitate adjustments to the conservation measures as necessary to maintain population size and productivity of NSOs.

ELF-12

See response to SCE-14.

ELF-13

The agencies believe the description of the No Action/No Project alternative is correct. The No Action/No Project alternative rests on the premise that without a permit, PALCO would not be able to conduct forest management activities (including timber harvest in certain areas of the ownership) that would result in take of listed species. EIS/EIR Section 2.5.1 describes the assumptions the state and federal agencies used in attempting to assess how environmental conditions might change under PALCO management if the company did not have take authorization.

The Headwaters Forest acquisition is a separate transaction but is related to issuance of the federal ITPs and approval of a SYP pursuant to the September 1996 Agreement among PALCO and the federal and California state governments, Public Law 105-83 and AB 1986.

ELF-14

Comment noted. See response to ALA-112. The plan response to the broad array of changed circumstances identified in the draft HCP is immediate watershed analysis of the affected area. That analysis will factor in

the changed physical conditions of the landscape and result in site specific prescriptions tailored to those conditions.

ELF-15

The Draft EIS/EIR acknowledges the likelihood of windthrow along the edges of stands, especially windthrow caused by timber management (Section 3.9.1.2). The Draft EIS/EIR includes specific mention of the risk to stream buffers from wind, and it rates the alternatives on risk of windthrow (Section 3.9.2.1).

ELF-16

The Final EIS/EIR addresses the issue of landslides along all stream types in Section 3.6.3.1, Timber Harvest-Related Mass Wasting, and in Section 3.6.3.2, Road-related Mass Wasting.

ELF-17

The Final EIS/EIR addresses direct and indirect effects to stream hydrology from the SYP in Section 3.4.3.2, Water Quantity Effects.

ELF-18

Regarding oil spills and other impacts occurring outside the project area, see response to comment HC-11.

ELF-19

The comment's author has apparently misinterpreted the changed circumstance provision in Volume IV, Part H of the draft HCP, which addresses the listing of a new species. That section requires that the company modify the Covered Activities as directed by the wildlife agencies if the agencies determine that such activities would result in take, jeopardy, or adverse modification of any designated critical habitat of a newly listed species and the ITP has not been amended to include the newly listed species. The changed circumstance provision does not, as the comment suggests, restrict mitigation in any future ITP to those measures specified in the current HCP. The agencies believe it is appropriate and reasonable to work cooperatively with the company and to take into account the existing conservation and mitigation measures already provided under the ITP in determining what additional measures may be needed to amend the permit to include a newly listed species. A final determination of what modifications to the Covered Activities must be made to avoid take, jeopardy, or adverse modification of designated critical habitat, as well as the determination of those measures necessary to meet FESA § 10 and CESA § 2081(b) permit issuance criteria, rest with the applicable wildlife agency.

ELF-20

The comment's author has apparently misinterpreted the changed circumstance provision that addresses the suspension, revocation, or relinquishment of one of the federal ITPs. The wildlife agencies agree that the prohibitions of § 9 of the FESA automatically apply to any listed fish or wildlife species covered by the suspended, revoked or relinquished federal ITP. The changed circumstance provision is intended to ensure that PALCO's operations under the federal ITP that has not been suspended, revoked or relinquished are carried out in a manner that complies with all FESA statutory and regulatory requirements. Under the provision, PALCO is required to modify the Covered Activities as directed by the wildlife agencies to ensure such activities do not result in take, jeopardy or adverse modification of any designated critical habitat of a fish and wildlife or plant species included in the suspended, revoked or relinquished permit until the suspended permit is reinstated or, in the case of a listed fish or wildlife species, PALCO obtains a new permit covering the affected listed species.

The federal wildlife agencies are not required to obtain PALCO's consent to such modifications to the Covered Activities. The federal wildlife agencies believe that allowing PALCO to invoke the alternative dispute resolution process provided at § 9.2 of the IA is appropriate so long as the final determination of what modifications are necessary to the Covered Activities remains with the agencies. It is also appropriate for the agencies to commit to work with PALCO to minimize the impacts of such modifications to the Covered Activities consistent with the statutory and regulatory requirements of FESA. The procedures identified in this section do not, as the comment suggests, address the factors identified in 50 C.F.R. §§ 13.27 and 13.28 that may trigger a permit suspension or revocation; rather they address the agency and company's responsibilities to comply with the ESA in the event of a suspension or revocation.

The comment's author states that the changed circumstances provision conflicts with 50 C.F.R. § 13.23(b), which the comment's author argues prohibits the FWS from restricting its future authority to modify an incidental take permit. The FWS and NMFS have not restricted their authority to require modifications to the Covered Activities under this changed circumstance provision. The purpose of the provision is to expressly permit the wildlife agencies to require modifications to the Covered Activities as necessary to comply with applicable law. However, as a general matter, section § 13.23(b) must be interpreted in a manner consistent with the No Surprises rule codified in relevant part at 50 C.F.R. § 17.22(b)(5) and 17.32(b)(5). Accordingly, § 7.2.1 of the IA has been modified to clarify that the FWS will interpret its authority under 50 C.F.R. § 13.23(b) to amend the ITP consistent with the No Surprises regulation at 50 C.F.R § 17.22(b)(5). However, because the No Surprises rule applies to species included in a valid ITP that is being fully implemented, the rule would not apply to the changed circumstance of a suspended, revoked or relinquished ITP because species included in a suspended, revoked or relinquished ITP are by definition not included in a valid ITP.

ELF-21

See response to SCE-11, item H, SCE-23 and SCE- 107. Recital L is simply a statement of the company's reasons for entering into the IA and accepting the ITPs should they be issued. The statement does not relate to the permit issuance criteria provided under § 10 of FESA.

ELF-22

Comment noted. The requirements of § 7 of FESA are appropriately discussed in the biological opinion issued by the FWS and NMFS regarding the proposed ITPs. The FWS and NMFS disagree that unlisted species may not be included in ITPs. The list of species for which coverage is requested by PALCO is identified at Volume 1, page 7 of the Draft HCP/SYP. The FWS and NMFS believe it is appropriate to encourage private landowners to provide conservation measures for unlisted species as well as listed species to reduce the chances that such species will require the protection of the FESA in the future. To be included as a covered species, sufficient information about the species and its habitat requirements must be currently available to the agencies, adequate conservation measures for the unlisted species must be provided under the HCP's Operating Conservation Program, and the permit issuance criteria must be met for the species. Further, with respect to all Covered Species, listed and unlisted, all activities undertaken pursuant to the IA, the HCP/SYP, or the ITPs must be in compliance with all applicable federal and state laws and regulations, including §2081 of CESA and §§ 7 and 10 of FESA, both at the time of permit issuance and throughout the permit term. See § 10.16 of the IA.

Determinations of whether or not to include unlisted species as covered species under an ITP are made on a case by case basis. After further review of public comments, the treatment of the proposed covered species in the Draft HCP, and other available information, the FWS and CDFG have determined that the following 19 species will not be covered under the ITPs: double-crested cormorant, great blue heron, great egret, snowy

egret, black-crowned night heron, osprey, golden eagle, sharp-shinned hawk, Cooper's hawk, goshawk, ferruginous hawk, burrowing owl, yellow warbler, yellow-breasted chat, Humboldt marten, Pacific lamprey, Vaux's swift, pileated woodpecker, and purple martin.

In the past, CDFG has included unlisted species under take management authorizations pursuant to Section 2081 of CESA. In 1997, CESA was amended. Section 2081 was amended to explicitly authorize CDFG, pursuant to Section 2081(b), to authorize the incidental take of threatened and endangered species, and candidates for such listing, through the issuance of permits that meet specific issuance criteria. Amendments also required CDFG to adopt regulations to aid in the implementation of Section 2081(b). Such regulations were adopted on December 30, 1998.

In its proposed regulations, CDFG included a specific provision that allowed applicants to request coverage of unlisted species in an ITP and provided that CDFG would cover unlisted species in an ITP so long as such species were treated as if they were currently listed and take of such species prior to listing, or designation for candidacy for listing, complied with all of the permit issuance criteria, including minimization and full mitigation of the impacts of the take of such species. CDFG believed the provision was appropriate because if there were insufficient information for CDFG to determine that impacts of taking an unlisted species would be minimized and fully mitigated, and that issuance of the ITP would not jeopardize the species' continued existence, an unlisted species could not be covered under the ITP. CDFG also believed that impacts to such species would be addressed most effectively prior to permit issuance when all of the impacts of take incidental to covered activities could be assessed, and minimization and mitigation requirements could be developed. Waiting for formal list to cover such species would likely result in take prior to listing that would otherwise have been minimized and fully mitigated because unlisted species that are not candidates for listing are not subject to any take minimization and mitigation requirements of CESA. Covering unlisted species would provide such species the immediate benefits of minimization and full mitigation requirements of CESA that would be required to be implemented from the time of permit issuance. These are benefits unlisted species would not otherwise receive until formal listing and post-listing permit coverage. Covering unlisted species prior to listing would help avoid the need for listing because it would provide early protection and more protection than would otherwise be legally required.

However, this specific provision of CDFG's proposal was not approved by the Office of Administrative Law (OAL). In its decision disapproving this part of the proposed regulations, dated January 6, 1999, and identified as OAL File: 98-1113-08, OAL stated that it could not allow CDFG to create an authorization for the take of unlisted species pursuant to Section 2081(b) and (c). Given this decision, CDFG has not determined whether or how to treat unlisted species under the State Permit or the IA. Thus, specific provisions in the IA regarding coverage of unlisted species are being reviewed and may be subject to change.

ELF-23

Comment noted. Section 3.1.4 of the IA (renumbered to 3.1.5) provides that no increase in take beyond that authorized in the ITPs will be authorized without a permit amendment. All permit amendments are required to meet all applicable statutory and regulatory requirements, including NEPA, CEQA , sections 7 and 10 of FESA and § 2081(b) of CESA. The assurances provided to the permittee under the No Surprises rule and the IA apply to the current HCP and ITPs. They do not apply to any future amendments of the ITPs.

ELF- 24

Comment noted. See response to SCE-10 and Section H of the HCP.

ELF-25

Comment noted. See response to SCE-103. Section 3.4.2 has been renumbered 3.4.3 in the final IA.

ELF-26

Comment noted. See response to SCE-11, item H, SCE-23 and SCE- 107. See Section 3.20.1 of the EIS/EIR.

ELF-27

Comment noted. See response to ELF-22.

ELF-28

Comment noted. See response to GEC-103. The comment does not provide any support for the assertion that the HCP/SYP will have a detrimental effect on Covered Species protected by the Migratory Bird Treaty Act (MBTA). The FWS is not authorizing take of any species under the Bald and Golden Eagle Protection Act (BGEPA). For the reasons stated above with respect to MBTA species, the FWS will not refer the incidental take of a bald eagle for prosecution under the BGEPA if such take is in compliance with the terms and conditions of the FWS ITP.

ELF-29

Sections 6.1.3, 6.14 and 6.16 accurately reflect the provisions of the No Surprises rule codified at 50 C.F.R. §§ 17.3, 17.22(b)(5) and (b)(6), 17.32(b)(5) and (b)(6), 222.3 and 222.22. The comment author's objections are appropriately directed at the No Surprises rule itself rather than the cited provisions of the IA. An extensive public review period was provided prior to promulgation of the No Surprises rule, and responses to the commentor's assertions are included in the supplementary information section of the No Surprises rule published at 63 Fed. Reg. 8859-70 (February 23, 1998).

The FWS and NMFS are not violating their FESA § 7 or § 10 responsibilities by assuring PALCO that additional conservation and mitigation measures will not be required of the company without the company's consent. This assurance is provided pursuant to the No Surprises rule and is consistent with the agencies' responsibilities under §§ 7 and 10. The IA at § 10.16 makes clear that all covered activities under the federal and state ITPs must be in compliance with applicable federal and state law, including §§ 7 and 10 of the FESA and § 2081(c) of CESA. The FWS and NMFS have a continuing duty under § 7 of the FESA to avoid jeopardy to listed species resulting from Covered Activities under the ITPs. Nothing in the No Surprises rule or § 6.1.6 of the IA abrogates that duty. With regard to the resources available to the agencies to address unforeseen circumstances, see response to SCE-137.

ELF-30

See response to comment ELF-22.

ELF-31

The commentor apparently misinterprets Section 6.2.2 of the IA. This provision does not unlawfully restrict CDFG's ability to require future mitigation for uncovered species that become listed or candidates for listing upon an application by PALCO for coverage of such species under an ITP. Section 6.2.2 does not restrict or limit CDFG's responsibility to ensure that coverage of such species complies with the permit issuance criteria set forth in CESA or that the requirements of other applicable statues and regulations, including CEQA are met. This provision merely requires CDFG to consider, in determining whether further conservation or mitigation measures beyond those provided pursuant to the HCP are required in order to issue such ITP, the conservation and mitigation measures provided pursuant to the HCP, and to cooperate

with PALCO to minimize, to the greatest extent possible, adverse impacts of the listing or candidacy for listing of such species on the covered activities consistent with the requirements of Section 2081(b).

ELF-32

Comment noted. CDFG agrees that it has statutory and common law public trust responsibilities. However, nothing in CESA or any other provision of state law prohibits CDFG from providing "No Surprises"-like assurances in appropriate circumstances. See response to comment SCE-15-(I).

ELF-33

Comment noted. The wildlife agencies have determined that many of the species under Fish and Game Code §§ 3503, 3503.5, 3505, and 3511 will not be covered under the ITPs. These species include: double-crested cormorant, great blue heron, great egret, black-crowned night heron, osprey, golden eagle, sharp-shinned hawk, Cooper's hawk, goshawk, ferruginous hawk, and burrowing owl.

The IA has been modified to delete the findings at Section 6.2.6. This section of the IA now provides that to the extent permitted by law, CDFG agrees not to refer for prosecution any alleged take of birds of prey and/or destruction of its nest or eggs, so long as PALCO complies with the terms and conditions of the state ITP, the HCP, including the conservation and management measures provided under the HCP's Operating Conservation Program for birds of prey, and the IA.

The IA has also been modified to delete references to fully protected species under Fish and Game Code §§ 4700, 5050, and 5515, as coverage was not requested for such species.

The author of the comment has apparently misinterpreted Section 6.2.5(c) of the IA. This section does not limit CDFG's ability to comply with any future law authorizing incidental take of fully protected species. This section provides that if a future law authorizes CDFG to issue a permit allowing incidental take of fully protected species, CDFG may, at its own discretion and if appropriate, amend the existing ITP or issue a new ITP to authorize take of such species under the same terms and conditions as the ITP only to the extent permitted by law. CDFG could only authorize such take consistent with such future law and any other applicable law.

ELF-34

Comment noted. CDFG has determined that it will not provide take authority pursuant to the NCCP Act.

ELF-35

Comment noted. Section 6.3 of the IA does not unlawfully restrict the federal and state governments' future exercise of regulatory powers. The provision recognizes that the impacts of take of the Covered Species resulting from the Covered Activities on PALCO lands has been fully analyzed and is intended to be fully addressed by the conservation and management measures provided under the HCP's Operating Conservation Program. If such take is in the future required to be analyzed again and mitigation imposed pursuant to application of one of the enumerated federal or state statutes (i.e., NEPA, CEQA, the federal Water Pollution Control Act, Porter Cologne Act), § 6.3 of the IA provides that the mitigation then required by the FWS, NMFS and CDFG will "to the maximum extent permitted by law" conform to the mitigation already provided for such take under the HCP. Nothing in this section prohibits the wildlife agencies from considering all available scientific information in subsequent reviews under these statutes or from requiring different mitigation or minimization measures where new information compels such measures.

ELF 36

There is no comment numbered ELF-36.

ELF-37

Please see response to comment ELF-35.

ELF-38

Comment noted. The commentor provides no support for legal conclusion that § 7 of the IA is inconsistent with 50 CFR §13.23(b). That section refers to FWS' right to amend a permit for cause upon a finding of necessity. Section 7 of the IA addresses minor modifications to the HCP as well as permit amendments proposed by PALCO. Section 7.1 requires that any modifications to the HCP that would result in operations significantly different from those analyzed in connection with the original HCP, adverse effects on the environment that are new or significantly different from those analyzed in the original HCP or additional take not analyzed in connection with the original HCP be processed as amendments to the ITPs. Se also responses to SCE-140, SCE-147, and ELF-20.

ELF-39

Comment noted. The comment provides no support for the legal conclusion that § 8.2 of the IA "appears to be inconsistent with 50 C.F.R. §§ 13.27 and 13.28." Section 8.2 expressly provides that FWS and NMFS may suspend the permit for cause in accordance with regulations in force at the time of the suspension or revocation. 50 C.F.R. §§ 13.27 and 13.28 are the regulations that currently govern FWS suspension and revocation of ITPs.

ELF-40

Comment noted. The FWS and NMFS are not waiving future mitigation requirements pursuant to § 8.5 of the IA. That section requires that notwithstanding early relinquishment or revocation of the ITPs, PALCO must fully mitigate for the impacts of all past take that occurred under the permits in accordance with the conservation and management provisions of the HCP's Operating Conservation Program. The agencies agree that once the ITPs are revoked or relinquished, no further take of any covered species would be authorized and the prohibitions of § 9 of FESA would again apply to all of PALCO's activities. Section 8.5 does not provide otherwise.

ELF-41

The agencies believe the EIR/EIS has addressed direct, indirect, and cumulative impacts, and identified significant impacts and mitigation measures in compliance with the standards enumerated in this comment.

ELF-42

The EIS/EIR states that "concerns have been reduced" by implementation of the Forest Plan, which the agencies consider a very reasonable statement considering the large area that has been set aside. Also, see responses to Alan Franklin and Peter Carlson. The EIS/EIR notes that in the redwood region the species was present in large numbers and in high densities, at the time of listing, following decades of intensive timber management. Therefore, it would take very substantial effects to constitute significant effects on this species at the scale of the listed range. In addition, the HCP has been revised as presented in Appendix P so that statistical uncertainties are reduced. The agencies do not consider that there is insufficient information to make a decision. All relevant information has been considered in the evaluation in the EIS/EIR and Section 3 at page 3-2 also discusses available information. The commentor is incorrect in stating that simply because

the proposed action has the largest effect in any given category that it is by definition significant. The statement referred to is a statement of fact that discloses effects to the public and the decision maker. The agencies disagree that the EIS/EIR does not objectively and fairly consider cumulative effects to northern spotted owls.

ELF-43

While it is not possible to know what specific lands PALCO may acquire or sell during the term of the proposed ITPs, under the HCP and IA only lands within one mile of PALCO's current ownership may become covered lands without a permit amendment, and all lands sold by PALCO must continue to be protected consistent with the HCP. The agencies have assessed the impacts of adjacent land acquisitions at section 3.21 of the Draft EIS/EIR and Final EIS/EIR.

ELF-44

The EIS/EIR described the changed circumstances enumerated in the HCP and included these in the environmental effects analysis under the various impact topic areas. The changed circumstances included all reasonably foreseeable changes and described how they would be addressed. By definition, unforeseen circumstances are not foreseen; that is, they are beyond what is reasonably foreseeable. Thus any discussion of what could constitute an unforeseen event, and any description of how the company or the agencies would address any unforeseen event, would be highly speculative and therefore has been appropriately excluded from the environmental analysis.

EPA-1

Refer to responses to DRM-25 and DJK-17 for scales of analysis for cumulative effects. Further detail on this approach is provided in the Final EIS/EIR, Appendix P.

EPA-2

See responses to LMR-12, LMR-15, LMR-19, CAF-5, CAF-6, CAF-7, and DRM-25.

EPA-3

The Final HCP/SYP and the Final EIS/EIR incorporate the provisions of AB1986, including those that pertain to increases in Class I and II RMZ protection. With regard to Class III protection, refer to the response to CAG-44.

EPA-4

The Draft EIS/EIR addresses the HCP Road Assessment Plan in Section 3.6.3.2. The assessment plan is outlined in detail in Section 3.6.3.2, and the effects of implementation are also addressed. The Draft EIS/EIR discusses the fact that the HCP does not address older roads. The Draft EIS/EIR states "no specific provisions for decommissioning older, problem roads that are chronic contributors of sediment" are addressed (p.3.6-41 Draft EIS/EIR). Also see responses to LMR-16, III-RF-3 and GEC-38.

EPA-5

These sites would be addressed as part of the road assessment inventory.

EPA-6

Monitoring and adaptive management are addressed more fully in the Final EIS/EIR and will also be addressed in the implementing agreement if permits are issued.

EPA-7 and EPA-17

The wildlife agencies are aware and concerned about PALCO's compliance problems with Forest Practice Rules and CDF's recent decision to temporarily suspend the company's timber harvesting license. The HCP and the IA contain provisions to facilitate compliance and that apply remedies to deter violations. The HCP now requires more extensive monitoring to ensure compliance with mitigation measures. This includes a third party to be funded at PALCO's expense to monitor activities on each THP. The monitor will be qualified in forestry and wildlife and fisheries biology and will notify the Wildlife Agencies immediately if PALCO deviates from the conservation and management measures required in the HCP. The monitor will report quarterly to the Wildlife Agencies regarding implementation and compliance by PALCO. The HCP's IA also allows the federal government to treat as a separate ESA violation the harvest of each merchantable tree (8" or greater in diameter) harvested in violation of the federal permit. The Services believe these and other measures contained in the HCP and the IA will deter violations. See response to BRC-1 and BRC-2.

The provision allowing PALCO to seek monetary damages against the federal or state government has been removed from the IA.

EPA-8

Comment is noted. The agencies will determine appropriate prescriptions formulated using baseline conditions as determined through the watershed analysis process. The effectiveness of prescriptive measures in attaining properly functioning conditions is addressed in the responses to CT-2, CAG-48, GP-15, and DRM-12.

EPA-9

Point is noted. As outlined in the Draft HCP/SYP, the agencies will work with PALCO and approve all prescriptive measures as a result of watershed analysis.

EPA-10

See responses to LMR-19, DJK-17, DRM-25, CAG-16, CAF-5, CAF-6, and CAF-7.

EPA-11

See responses to III-RF-3, LMR-16, and LMR-24.

EPA-12

See responses to GEC-38 and LMR-21.

EPA-13

See responses to CAF-5, CAF-6, CAF-7, CAF-8, LMR-12, LMR-15, CAG-16, MWSSG-3, and CAG-52.

EPA-14

See responses to CAG-44 and CAG-54. The Final HCP/SYP addresses the concerns expressed in this comment regarding Class II watercourse protection. Based on public comments and on FESA and CESA issuance criteria, the wildlife agencies consider that additional mitigation, beyond that analyzed in the Draft and Final EIS/EIR, would be appropriate to reduce the risk of potential adverse effects. Details of this additional mitigation and the associated monitoring plan are presented in Appendix P of the Final EIS/EIR.

Some of the additional mitigation includes the following: (1) Class II watercourse riparian management zones (RMZs) include 30-foot "no-harvest" bands within at least 130-foot-wide RMZs; (2) the Class II

watercourse RMZs will extend on steep slopes (greater than 50 percent) upslope to 400 feet; (3) beyond the no-harvest band within the RMZ, no more than 40 percent of the basal area can be harvested and no less than 240 square feet of basal area per acre must be retained in a prescribed diameter class distribution during each harvest entry. Harvest entries can occur not more than once every 20 years, and (4) On moderate slopes, an additional 40-foot-wide outer sediment filtration band will be established, within which downed wood will be retained and fire ignition will be prohibited. Further restrictions will apply to RMZs located in mass wasting areas of concern, where no harvest would be allowed prior to watershed analysis.

EPA-15

The provisions for large tree retention in the Draft HCP/SYP and the Draft EIS/EIR in the have been modified. The Final HCP/SYP includes expanded "no-cut" bands in the RMZs as required by AB1986. It also requires, as a "minimum sideboard", retention of the largest 18 trees per acre in Class I RMZs during each harvest entry if, as an outcome of watershed analysis, harvest in the 30- to 100-foot area would be prescribed. Thus, the intent of permanently marking large trees will be met. See Appendix P for a detailed description of these new mitigation measures.

EPA-16

We agree with the comments pertaining to monitoring. Refer to responses to CAG-25 and CAG-48.

EPA-17

See EPA-7.

EPA-18

The impaired water bodies and watersheds cumulatively impacted by sediment were noted and discussed in the Draft EIS/EIR.

EPA-19

The rationale for using the federal No Action assumptions as baseline for the environmental consequences discussion was stated on page 2-26 of the Draft EIS/EIR**.** Now that the provisions of AB 1986 have been incorporated into the HCP (see Alternative 2 in the Final EIS/EIR), appropriate tables have been modified.

EPA-19

Comment. However, the agencies consider the analysis to be adequate.

EPA-20

Comment noted. Please see responses to GEC-14.

EPA-21

Full integration and environmental analysis of AB 1986 was not appropriate at the time the DEIS/EIR was published because the applicant had not given any indication the provisions of AB 1986 would be adopted as part of the HCP [Now that]? the provisions of AB have been incorporated into the HCP (see Alternative 2 in FEIS), the environmental affects have been further evaluated

EPA-22

As noted in Section 2.3 of the Draft EIS/EIR, the agencies may include components of different alternatives in their final decisions. As noted in that section, however, the agencies cannot unilaterally impose some components of the alternatives on PALCO without PALCO's consent.

EPA-23

In the Draft EIS/EIR, Section 3.6.3.2, the Alternative 3 analysis assumes that the same number of roads would be constructed as for Alternative 2. In the Final EIS/EIR, however, Section 3.4.3.3. Water Quality Effects will more explicitly address the potential for increased road construction for Alternative 3, property-wide, selective harvest.

EPA-24

The agencies are open to exploring a debt for nature alternative acquisition approach if in the future it is determined to be legal and practicable.

EPA-25

The Draft EIS/EIR did analyze the impacts of proposed harvest on the priority habitats of various species at the watershed and planning area scales. The cumulative loss of old growth forest was considered a significant effect based primarily on the unique characteristics of and inability to replace these habitats and the substantial body of public opinion considering this loss significant. However, the Final HCP includes additional acreage in these habitats protected from harvest. As a result, less than two percent of uncut old growth will be harvested in the Southern Humboldt Bioregion. These stands consist of isolated patches of less than 90 acres with a high degree of edge, and are not regarded as critical for priority species such as the marbled murrelet. It is expected that impacts to species occupying those small lower quality stands will occur, but across the landscape are being minimized by the retention of higher quality stands. Refer to Appendix N for further discussion of this issue, and Appendix P for totals of old growth and residual stands retained in reserves.

EPA-26

Additional monitoring and mitigation measures have been incorporated in the revised Northern Spotted Owl plan. Please refer to Appendix P.

EPA-27

Additional information concerning the sufficiency of the HCP mitigation measures are addressed in the Final EIS/EIR as well as the FWS and NMFS biological opinion and Statement of Findings.

EPA-28

The key wildlife habitat zones focused within this HCP consist of the largest, most contiguous blocks of existing old growth, currently proposed as MMCAs and the Headwaters Reserve. These areas occur in primarily within the Yager WA. As a result of past management, the composition of habitat currently surrounding the MMCAs consists mainly of young growth. Because the landscape around and between the reserves is currently in younger seral conditions, there will be very little opportunity in that area of the ownership for harvest, with the exception of a few scattered remnant old growth stands over the next few decades (Figure 3.10-1). During that time, the re-growth of these stands should increase connectivity between the MMCAs. Once those stands develop into older seral stages they will be once again entered and are expected to be reduced again. However, by that time, connectivity provided by RMZs in this area is

expected to increase in quality, improving from current conditions. In other areas of the ownership, however, where no blocks of late seral or old growth habitats are proposed for retention, there will be a revolving pattern of connectivity that is expected to be provided primarily by RMZs and small areas retained for spotted owls.

EPA-29

Since there are currently no indications that such effects are occurring, the indicated timeframe is considered sufficient to address the issue.

EPA-30

These issues are addressed as indicated in Section 2.2.

EPA-31

This analysis and conclusion is provided in Section 3.7 as well as the indicated cumulative effects portion of that section.

EPA-32

The harvesting schedule proposed in the HCP/SYP is permitted as long as growth is balanced over time and the rolling 10 year average harvest does not exceed the LTSY. Calculation of LTSY is constrained by the disturbance index and other mitigation measures in the HCP/SYP to prevent cumulative impacts. In addition, the information and assessment requirements of the Forest Practice Rules for cumulative impacts must be met in the HCP/SYP or in THPs submitted under the HCP/SYP.

EPA-33

The agencies consider that the scientific evidence requested by this comment is contained in the various resources sections in the EIS/EIR and their respective analyses. Soil erosion can affect soil productivity and the attainment of maximum sustained timber production. However, soil productivity issues are addressed in Section 3.6 of the EIS/EIR, and the conclusion is that there would not be significant reductions in forest productivity. The comment provides no specific information with respect to that analysis that would change that conclusion.

EPA-34

Opinion noted.

EPA-35

See response to EPA-6.

EPA-36

As an introduction to the specific responses to EPA comments on herbicides, please refer to general response C-42 which summarizes the status of agency review of the issue of the environmental impact of herbicide use and the potential for take of protected species.

The agencies recognize EPA's Registration Standards and Re-Registration Eligibility Decision documents; the EIS/EIR text is modified to include reference to that EPA regulatory process.

EPA-37

The conclusion in the EIS/EIR is based in part on information provided by the North Coast Regional Water Quality Control Board and the limited water sampling data provided by PALCO which show no detection in streams of the herbicides being applied on PALCO land. The limits of detection in the laboratory tests were several hundred times lower than the levels used as drinking water standards and roughly a thousand times lower than the levels found in laboratories to affect aquatic animals. Laboratory tests conducted for PALCO by North Coast laboratories, Ltd., Arcata, in 1998 reported limits of detection for glyphosate at 5.0 micrograms per liter (5 parts per billion, ppb), Garlon 0.10 micrograms per liter (0.1 ppb), and atrazine 0.50 micrograms per liter (0.5 ppb). While the agencies recognize the inherent limitations of in-stream monitoring for land-applied pesticides, the lack of detection coupled with the selective means of application (non-aerial backpack) and the extensive registration history behind the herbicide formulations being used lead to the finding of no adverse effect on human health or trading water quality. The issue of longer-term persistence and bioaccumulation effects is relevant to possible future coverage of protected species under an Incidental Take Permit and will be addressed in sufficient detail if a request for an amendment is received.

EPA-38

Comment noted. Biodiversity and other indirect effects are relevant to possible future coverage of protected species under an Incidental Take Permit and will be addressed in sufficient detail if a request for an amendment is received.

EPA-39

The agencies have no estimate of the potential for take of covered species from the use of herbicides on PALCO ownership.

EPA-40

Any amendment to provide incidental take coverage for listed species will be on the basis of specific formulations and specific methods of application. This will allow the FWS and the NMFS to consider the environmental fate and effects of the active ingredient, "inert" ingredients, known contaminants, adjuvants, diluents such as diesel or other non-water mixtures, and other additives such as marker dyes.

Unmarked EPA Herbicide Item 6

Comment noted. The herbicides used are generally non-selective, as is typical in forestry or right-of-way applications. The use of Garlon which is active on dicots offers a marginal selectivity which would protect monocots (grasses and many wetlands species). In general, the only way that these broad spectrum herbicides can be applied so as to protect sensitive plan species is for a preliminary survey and flagging of sensitive areas. Because PALCO application is done using backpack sprayers rather than by air, it would be possible to avoid protected areas.

EPA-41

The agencies recognize EPA's Registration Standards and Re-Registration Eligibility Decision documents; the EIS/EIR text is modified to include reference to that EPA regulatory process.

EPA-42

The analysis in the EIS/EIR and the monitoring data collected by the North Coast Regional Water Quality Control Board and PALCO also included surface water monitoring.

EPA-43

Comment noted.

EPA-44

Any amendment to provide incidental take coverage for listed species will be on the basis of specific formulations and specific methods of application.

EPA-45

When atrazine is used alone as a pre-emergent herbicide, the label specifies that it be applied to the soil where it is activated by sufficient rainfall or irrigation to inhibit determination and growth of weeds. In forestry use, atrazine is tank mixed with a post-emergent herbicide such as Garlon or Roundup, and in this case it may be sprayed directly on established weeds and on the ground so that it accomplishes both the control of the vegetation present and a residual effect on seeds lasting for several seasons.

EPA-46

The application rates for the herbicides used by PALCO are given in Table 3.14-2. Those data reflect 1997 applications which did not include Oust -- the comparative data for Oust as a substitute for atrazine are given in the text.

EPA-47

PALCO at present does not use hexazinone and according to the Humboldt County Agriculture Department, hexazinone is unlikely to be used in a granular or broadcast form in redwood timber lands because of redwood's sensitivity to this herbicide. The recommendation for a Herbicide Use Plan is appreciated; PALCO would need to develop such a plan in order to support in the requested amendment of the Incidental Take Permit for herbicide coverage. PALCO has provided a preliminary risk assessment of herbicide use (see PALCO comments on the draft EIS/EIR, pp. 66 through 167, "Environmental Risk Assessment of Herbicide Use on Forest Lands of the Pacific Lumber Co., Scotia California", Dean G. Thompson, Ph.D., Nov. 13, 1998. This will need to be supplemented by more application-specific information and improved monitoring and reporting procedures.

EPA-48

The text has been modified as requested. The state of California has regulatory requirements which go beyond those established by the EPA: application must be based on a written recommendation by a state certified individual, applicators must report pesticides, quantities, and locations monthly to each county in which they operate, adjuvants as well as pesticides formulations themselves are registered, and there is a separate state registration process which is capable of considering more specific local information relevant to pesticide labeling.

EPA-49 and EPA-50

Comment noted. As a generalization, aerial application is more likely to result in pesticide reaching service waters than when it is applied with the backpack application method used on PALCO land. With backpack application, the single most important factor in limiting surface water contamination is the distance that application is set-back from the watercourse. The greater the buffer the less the likelihood of drift or surface runoff carrying herbicide into the stream.

EPA-51

Comment noted. The Regional Water Quality Control Boards Broad have broad powers to act to protect surface water from any threat to beneficial uses, including threats from herbicide application. The California Department of Pesticide Regulation determines the application restrictions that apply for each herbicide use and can consider local conditions. Those two regulatory agencies work with the county Agricultural Commission which is the primary reporting and enforcement agency.

EPA-52

PALCO has unpublished, additional surface water monitoring data. This information has not yet been reviewed by the North Coast Regional Water Quality Control Board, but was made available for use in the EIS/EIR.

EPA-53 and EPA-55

Refer to response EPA-37 for limits of detection. The limit of detection for sulfometuron methyl (Oust) is 1.0 ppb for the measurements made by Agriculture and Priority Pollutants Laboratories, Inc., Fresno California. The sampling protocols and laboratory methodologies used for the unpublished PALCO data have not been reviewed for adequacy; the work done in conjunction with the Regional Board was presumably reviewed by the Regional Board technical staff.

EPA-54

Comment noted. The difference in potential for off-site, off target impact between aerial and ground-based applications is substantial.

EPA-56 through EPA-58

Comments noted. The prior EPA Section 7 consultations did not pertain to the species subject to the PALCO HCP and proposed Incidental Take Permit. The agencies acknowledge the concern for potential impact to protected plant species. The PALCO risk assessment (D. G. Thompson) identified atrazine and 2,4-D as having relatively high-risk of the impact for aquatic species. The agencies have not completed a review of that risk assessment and hence are not prepared to issue incidental take coverage for herbicides on its basis. Any future request for an amendment for such coverage will be reviewed in the context of ongoing consultation between EPA and the wildlife agencies and between EPA and California EPA Department of Pesticide Regulation.

EPA-59

The reference text in section 3.14.4 refers to the permitting process under the state and federal Endangered Species Acts which is the subject of the EIS/EIR. The discussion in section 3.14.2.2 describes the overall regulatory setting for pesticide use in California.

EPA-60

The agencies do not intended to provide for incidental take of covered species as a result of herbicide use.

EPA-61 and EPA-62

Comment noted. Stream setback is an important protective mechanism and is used in the HCP to accomplish a wide range of aquatic species conservation objectives. Most of the drift studies, however, deal with aerial application and not to ground application. For ground application surface runoff and transport of sediment-bound herbicide may prove to be more important than drift of spray material during application.

Note that foliar treatment where a spray of the fine droplets is used to wet foliage is a relatively small proportion of PALCO's herbicide application. Basal bark, frill or post-clearcut pre-emergent applications have very little potential for drift.

EPA-63

Comment noted. Surface water test data from the PALCO area do not report pesticide degradation products.

EPA-64 and EPA-65

The referenced statements are a general introductory text. The objective in specifying a herbicide is that ideally the effect should be limited to target species. It is common for effects to go far

beyond target species including desirable crops species (in this case, redwood) or through toxicity or ecological effects to impact and species and this is acknowledged in the EIS/EIR.

EPA-66 and EPA-67

The importance of the glyphosate formulation is acknowledged. The omitted reference is "United States Environmental Protection Agency (EPA). 1997 b. Hazardous Substances Database (HSDB), online, Washington D.C."

EPA-68 through EPA-71

The agencies acknowledge the comments on atrazine. In parts of the country where atrazine is in widespread use in general agriculture, groundwater contamination is fairly frequent. The more severe incidences a human health problems are associated with water supply contamination and this is most common where a water supply well is insufficiently isolated from the surficial aquifer, as with a cracked well-head.

EPA-72 through EPA-74

The agencies acknowledge the comments on triclopyr. Formulation dependent effects would be taken into account in evaluation of potential Take of covered species. The ester and the acid forms differ in their rate of hydrolysis and in their immediate toxicity to aquatic species. The observations on tadpoles at 0.6 milligrams per liter (600 ppb) corresponds to field measurements from aerial application. The comparison between pond water concentrations and stream water concentrations would only be valid for a short period of time due to flow in the stream, as noted by the commentor.

EPA-75

Comment noted.

EPA-76

As with triclopyr, 2,4-D is an organic acid and the form in which is used affects its immediate toxicity and its rate of hydrolysis or degradation in environment. Any incidental take coverage would be based on a specific proposed formulation and method of application.

EPA-77

The draft EIS/EIR text is drawing a distinction between the projection of no effect based on available information and the concern that the available information is insufficient to allow a determination of the long-term and cumulative effects of herbicide use on covered species over the proposed 50-year term of the Incidental Take Permit. At present there is no detection of herbicides in surface water and the detection

limits of laboratory tests are low enough that the herbicides in use would be found if they were present at levels known to be significant for aquatic species. The agencies recognize the limitations of the available test data and the lack of agency review of the test protocol. The agencies recognize the need to take into account the specific conditions of the coastal conifer forest that may affect the persistence of herbicides and hence the long-term and cumulative presence in the watersheds on PALCO's ownership.

EPA-78

Text changes reflect EPA comment 37 and 38.

EPA-78

Comment noted.

EPA-79

Thank you for your comment. Table S-11 has been modified and should be easier to follow in the Final EIS/EIR. Tables 2.5-3b and 2.6-1 have been revised. These tables, as well as those in the remainder of the Draft EIS/EIR, were edited and proofed as time allowed when the document was published.

EPA-80

Comment noted. It is impractical to do this in the EIS/EIR. Consequently, data is placed in table.

EPA-81

The comment provides no information to support its statement that the last decade's harvest may not represent a sustainable ecosystem.

EPA-82

The proposed actions and alternatives do not preclude implementation of the indicated alternative actions.

EPA-83

It is not practicable to provide the suggested page references.

ET-1

The effects of PALCO's approximately 7.5 percent ownership of the entire Mattole River watershed (see Table 3.6-7) is evaluated in the Draft EIS/EIR. Overall landscape stability and mitigation effectiveness with respect to water quality, landslides, and aquatic habitat are evaluated in Sections 3.4, 3.6, and 3.8 of the Draft EIS/EIR. As described by the scientific literature and in the Draft EIS/EIR, commercial logging practices can dramatically increase sediment load in streams.

ET-2

Rezoning is a county issue and beyond the scope of this EIS/EIR. However, the various avoidance strategies evaluated in the Draft EIS/EIR have similar effects to the rezoning discussed in this comment.

ET-2

The TPZ designation is not a prerequisite for allowing timber harvesting. It is a designation for tax purposes only. The establishment of specific mitigations, including no-harvest set-asides to reduce or avoid significant adverse environmental impacts, does not require rezoning. The TPZ designation was established by the legislature's passage of the Z'berg-Warren-Keene Collier Forest Taxation Reform Act of 1976 (AB 1258) and

subsequent legislated amendments in 1977 and 1982. This Act and its amendments established the Timber Yield Tax Law and required counties to place certain lands into TPZs and to reduce the tax rate for land in TPZs. The 1982 amendment (AB 2552 - Sher) stated that timber operations can be expected to occur on lands zoned TPZ and gave CDF the stop-order measure to help prevent environmental damages from forest practice violations.

ET-3

The ecosystem interconnectedness alluded to in this comment is extensively discussed in the Draft EIS/EIR and is fundamental to SYP approval as indicated by the requirement to include issues of fish, wildlife, and watershed impacts (FPR 1091.1).

ET-4

The Habitat Conservation Plan evaluates the landscape as it will function over the period of the incidental take permit and the effects that the action will have on threatened and endangered species. Rehabilitation may be a component of mitigation in such a plan but it is not required for an incidental take permit to be issued. The effects of the proposed plan implementation (and the other alternatives) and their effects on species are considered with respect to the existing condition of the habitat.

ET-5

The agencies do not consider the Headwaters Reserve as mitigation for the effects of activities on PALCO's lands, although the reserve is considered in determining the overall effects on species. With respect to additional lands, only 25,000 acres would be covered, these would generally be a small percentage of the watersheds adjacent to PALCO ownership, and the Draft EIS/EIR evaluated the effects of these additional lands being managed under the prescriptions of the proposed HCP/SYP and determined that they would not have significant adverse effects.

ET-6

The indicated Douglas-fir old growth is owned by PALCO on lands designated as TPZ. The Draft EIS/EIR evaluates the effects of harvest of this area and considers the potential effects to be biologically less than significant, while recognizing that the loss of old- growth redwood and Douglas-fir forest is considered significant based primarily on the unique characteristics of, and the inability to replace, old-growth forest and the substantial body of public opinion that would consider the loss significant. Although additional data are always useful, the agencies consider the level of information available in the Draft HCP/SYP and the Draft EIS/EIR sufficient to inform the public and decision makers of environmental effects and to allow a reasoned decision.

ET-7

The commentor is correct that no murrelet surveys have been conducted on Taylor Peak, where approximately 750 acres of potentially suitable murrelet habitat exists. However, as stated in the Bear River Murrelet Study (Draft HCP IV-B-2), approximately 323 acres of potential murrelet habitat in the Mattole drainage (not necessarily on PALCO property) has been intensively surveyed. An additional 74 stations were surveyed along 4 transects as part of this study. Approximately 180 acres in "Stand A" (which is located on PALCO property on the north side of Long Ridge near Taylor Peak) were intensively surveyed with no detections in 1994. Only 13 detections have been recorded in the Mattole drainage, almost all of them in the southeastern part of the watershed, south of PALCO property. These results indicate that murrelets do not use potential habitat located in the area, which is almost exclusively old-growth Douglas-fir. Due to this and other studies (Paton and Ralph, 1988, 1990; Ralph et al., 1990; Hunter et al., 1997,1998), the best available

information suggests there is a very low probability that murrelets make use of Douglas-fir stands in the interior Douglas-fir dominated habitats. Furthermore, as stated in a letter from the CDFG to PALCO, dated April 12, 1995, the FWS and the state agreed that it was not necessary to continue surveys for murrelet presence within the boundaries of the Bear River Study Area.

ET-8

Please refer to Appendix P for a revised list of covered species and Appendix R for a summary of mitigation measures. For species remaining on the list, it is not assumed impacts will *not* occur. Patch sizes of late seral habitats will be reduced, and the distances between patches will be increased. The reductions of habitat quality and quantity will affect individuals using those habitats. However, further mitigation measures will be implemented, and will significantly improve upon current wildlife protection measures, providing habitat for these species or their prey that otherwise would not occur. Examples include additional acreage added onto MMCAs, riparian buffers, cull green tree retention, and various snag size and height retention requirements, as well as upslope snag retentions.

ET-9

The information from the Mattole Restoration Council and the Mattole Salmon Support Group was considered in the Draft EIS/EIR. Whether or not coho salmon presently occur in it, Sulphur Creek is considered a fish-bearing stream and would receive the same level of protection in either case.

ET-10

This species has been removed from the list of covered species in the Final HCP.

ET-11

See the modified Northern Spotted Owl Plan in Appendix P. Regarding "take," the FESA allows some individuals of species to be harmed or "taken" under an incidental take permit if, among other things, the permitted activity will not appreciably reduce the likelihood of survival and recovery of the species in the wild. The issuance of an incidental take permit allows the landowner to legally proceed with an activity that would otherwise result in the unlawful take of a listed species.

If PALCO receives an incidental take permit from the federal government, then incidental take that occurs consistent with the permit it is not a violation of the FESA. The ability to take threatened and endangered species while engaging in otherwise lawful activities is why PALCO is seeking an incidental take permit under the FESA.

ET-12

The conditions within the Mattole River watershed were considered in evaluating the potential effects of the proposed HCP/SYP and the other alternatives considered in the Draft EIS/EIR. The prescriptions considered will function in the Mattole similarly to other areas on PALCO ownership. In addition, the watershed analysis procedure that would be instituted under the proposed HCP/SYP would provide even more site-specific information to provide the same or additional protection.

CDF agrees that the cumulative effects analysis in the SYP has to include past projects and activities and feasible mitigation measures where significant impacts have been identified. This requirement must be complied with at the THP level if it is not addressed in the SYP (see 14 CCR 1091.5[c], 1091.6[d]).

ET-13

The agencies disagree that stream protection needs to meet FEMAT prescriptions in order to provide for protection of aquatic habitat and for an incidental take permit to be issued. The proposed RMZs have been extensively analyzed in the Draft EIS/EIR. Canopy protection has only a very minimal relationship to the timing of an ephemeral stream going dry. The potential effects of mass wasting from Class III streams are considered in the Draft and Final EIS/EIR. See response to GM-1.

FS-1

The agencies note the preference for Alternative 3 stated in the comment, although it should be noted the agencies cannot obligate the applicant to adopt any particular alternative. Based on public comments and FESA and CESA issuance criteria, the wildlife agencies have added mitigation to the Final HCP that they consider appropriate to reduce the risk of potential adverse effects. Details of the additional mitigation are presented in Appendix P of the Final EIS/EIR. The agencies will determine whether to make approvals and/or issue permits based on the merits of the Final HCP.

FS-2

The agencies do not consider the Headwaters Reserve to be mitigation. As part of the action, however, it is considered as part of the effects of an alternative. The indicated references were incorrect and not correctly edited. See response to PL-6.

FS-3

As noted in the response to comment FS-1, the Final HCP includes additional mitigation considered to reduce the risk of adverse impacts. We disagree that the plan would cause irreversible harm and that it includes no restoration. The mitigation included in the Final HCP consists of eliminating or reducing certain activities as well as engaging in restoration activities. For example, PALCO will eliminate logging in the largest and most biologically valuable late seral forest stands (the MMCAs) and will actively recruit snags and leave downed wood. The HCP includes a number of restoration actions such as road stormproofing, culvert replacement and improved road design in an effort to reduce sediment delivery to streams. Large basal-area buffers along streams will help ameliorate high stream temperatures through improved stream shade, and will provide for nutrient and large woody debris input.

FS-4

The agencies disagree. The applicant is the best suited to indicate financial circumstances. The ESA language of maximum extent practicable specifically means that such issues have to be considered.

FS-5

Comments noted. The Draft EIS/EIR discusses the potential effects of reducing riparian structure on dissolved oxygen and water temperature, which affect fish, invertebrates and other aquatic life. Refer to Section 3.8.2 of that document. The Final HCP/SYP provides for protection of Class I, II and III watercourses that is in addition to what was presented in the draft document. Refer to the response to ALA-28 and CAG-44. Note that Class III watercourses, by definition, do not afford habitat for aquatic life, including aquatic invertebrates.

FS-6

See the response to CAF-5. Based on public comments and permit issuance criteria, additional mitigation measures have been added to the aquatic strategy in the Final HCP/SYP and the Final EIS/EIR (Appendix

P) to better protect aquatic resources. In addition to the mass wasting avoidance strategy, Class III streams now have 30-foot, no-harvest buffers, in all but 2,175 acres of the total ownership. Anticipated effects of the HCP on aquatic habitat are presented in Table 3.8-8 of the Final EIS/EIR.

FS-7

Although it is reasonably foreseeable that the EPA will prescribe total maximum daily loads (TMDLs) for the area, EPA has yet to develop TMDL information to a degree that could be incorporated into an environmental analysis.

FS-8

The Draft EIS/EIR analyzing these issues and does not reach the same conclusion. In addition, the Final HCP proposes additional mitigation to further reduce potential effects. See also response LMR-16.

FS-9

These statements are the commentor's opinion and the commentor presents no scientific information or data to substantiate his statements or to contradict the extensive analyses in the EIS/EIR. Additionally, the EIS/EIR specifically addresses monitoring issues and a final monitoring plan will be in place to ensure implementation and effectiveness.

FS-10

Please refer to revised Aquatic Conservation Plan in Appendix P.

FS-11

These statements are the commentor's opinion and the commentor presents no scientific information or data to substantiate his statements or to contradict the extensive analyses in the EIS/EIR.

FS-12

The Draft EIS/EIR addresses the water temperature issues of groundwater recharge from harvested slopes and shading of stream for stream temperature control. Based upon the literature and a riparian analysis present in Section 3.6, the agencies believe that the buffers are adequate to provide the shade component required to maintain or improve stream temperature.

FS-13

Thank you for your comment. The Draft EIS/EIR assumes that all mitigation and applicable laws will be followed. The standards for turbidity are based on the existing water quality objectives of the North Coast Regional Water Quality Control Board Basin Plan. The implementation of the applicable laws does not require monitoring instruments for turbidity.

FS-14

These statements are the commentor's opinion and the commentor presents no scientific information or data to substantiate his statements or to contradict the analyses in the EIS/EIR.

See comments to CAG-44 and DRM-1.

FS-15

The agencies believe that the proposed HCP, through RMZs, MMCAs, the late seral prescription buffers, and other measures, preserves the most important stands of old growth remaining on the property, including almost all of the uncut old growth.

FS-16

Vegetation data that differentiates between upland and riparian old growth, or between various dbh classes of old growth, is not available. However, the agencies believe that the available data, which is able to differentiate between uncut and residual redwood and Douglas-fir old growth stands, as well as between old growth and late seral areas, is sufficient to analyze the impacts of the proposed HCP on covered species.

FS-17

These points are valid. However, data from the multi-species surveys provided only general information on communities within the project area. This information was not used when developing mitigation measures or analyzing effects on those species proposed for coverage.

FS-18

Regarding multi-species surveys, see response to comment ALA-94. Comments are noted pertaining to the issue of biodiversity. FREIGHTS modeling projects all age classes will continue to be represented throughout the ownership, but the composition of age classes will be in inverse proportion from current conditions, with the exception of Prairie and other non-timber vegetative types, during the life of the permit. Comments are noted pertaining to the issue of fire disturbance. The zone of California does not occur in an area of high fire returns such as found in the Klamath or Sierra Zones, therefore the proposed actions will not affect or increase the *likelihood* of fire occurring in the project area. However, it is agreed that the composition of vegetation can affect fire *behavior*. Regarding use of data layers, these were the best available to analyze, in a consistent manner, habitats at the scale of PALCO lands. Within those stands typed as late seral, it is expected there will be variations in size, age and structure.

FS-19

The effects of clearcutting prescriptions over such a large scale will be highly scrutinized during the critical monitoring component of this HCP, particularly with the Aquatic Conservation Plan whereby Implementation, Compliance, and Effectiveness monitoring will occur. See Appendix R for this information and Draft EIS/EIR Section 3.9-47 for the consequences of violation.

FS-20

See response to ALA-114.

FS-21

The comment indicates that the HCP/SYP does not plan to monitor the effects of management activities on physical and biotic characteristics of aquatic and terrestrial system. Section 2.9.1 of the Draft EIS/EIR, however, summarizes the monitoring activities proposed for the HCP/SYP and cites sections of the plan pertaining to monitoring. Refer to the response to CAG-48. Please see Appendix P for the updated compliance and effectiveness monitoring plan.

With regard to the comment about there being no "…intention to modify management activities outside of very limited windows…," note that the watershed analysis process that the HCP/SYP will employ does provide flexibility for developing prescriptions intended to reduce the potential for risks associated with

management practices. This flexibility will include development of prescriptions that would address observed problems associated with hillslope processes and activities such as mass wasting and road construction on a site-specific basis and would not be limited to modifications to stream buffers.

What is meant by the statement that the HCP/SYP "…does not contain any management standards that would be considered standard for a reasonably complete and science-based management plan…." is unclear. We agree with the statement that "Without the safeguard of adaptive management principles, it is unlikely that prescriptions set out in 1998 will accommodate all possible changes in stream and forest conditions and impacts on listed species…." No set of prescriptions could accommodate all possible changes, nor is this an appropriate goal for the HCP/SYP or for any other HCP. Nevertheless, the requirement of the plan for periodic watershed analysis and continuous monitoring to assess changes in conditions, and for adaptive management, will lead to revisions in prescriptions. These means for change to the plan will help to ensure that the aquatic conservation strategy of the HCP/SYP will remain current. Descriptions of the plan's approaches for watershed analysis, monitoring, and adaptive management will be revised, but they can currently be found in Volume IV, Part D, Section 1.2.9, of the Draft HCP/SYP; in Appendix G of the EIS/EIR; in Volume IV, Part D, Section 2.2, of the Draft HCP/SYP; in Section 2.9 of the Draft EIS/EIR; and in Volume IV, Part D, Section 2.3, of the Draft HCP/SYP. Also, refer to responses to CAG-48 and GP-17.

We do not agree with the conclusion that "…it is almost certain that the principles that guide logging and road building under this plan (addressed above) will cause one or more populations within the permitting area to go extinct." This conclusion is not substantiated. The concern expressed regarding an inferred absence of inclusion of adaptive management principles in the plan is addressed by the reference above and in responses to other comments (e.g., see the response to GP-17).

FS-22

See response to ALA-10.

FWC-1

Thank you for the information; it has been included in the Final EIS/EIR.

FWC-2

Thank you for the information; it has been included in the Final EIS/EIR.

FWC-3

Thank you for this information.

GEC-1

The Draft EIS/EIR presents site-specific information where site-specific information is available. The Draft EIS/EIR is, to a large extent, a programmatic document. The NEPA analysis supporting federal action ON the ITP is complete at a suitable level of detail. Necessary mitigation for incidental take will be based on prescribed analyses as applied in the field. The site specific analysis is, properly, deferred to future individual THPs, because state law uses THPs as the functional equivalent of EIRs on individual timber harvest areas to address impacts and mitigations for site-specific impacts.

The HCP/SYP applies to a landscape of over 210,000 acres, which includes 14 major river watersheds and hundreds of smaller tributary streams. There is no practical way that an environmental document for a project on this scale to consider in detail the site-specific conditions on all parts of such a large and locally varying landscape. The analysis does aggregate information to consider physical processes, such as mass

wasting, that take place across the landscape, rather than looking at each individual site where a landslide could occur.

As discussed in section 2.8, the HCP and associated SYP is essentially a proposed mitigation plan, and the effectiveness of that proposed mitigation must be evaluated in detail to determine its adequacy. The Draft EIS/EIR examines in detail the relative effectiveness of the varying mitigation measures to minimize the effects of timber harvesting and associated actions in the proposed action/proposed project, the no action/no project, and the other action alternatives. The analysis in the Draft EIS/EIR considers the proposed mitigations as they would be applied across the entire PALCO ownership and presents the effects of their application, and in particular shows how the application of these measures could reduce all impacts to less than significant. Further, the implementation of these measures and the means to monitor the company's compliance are spelled out in detail in the Operating Conservation Program and the draft Mitigation and Monitoring Plan, which are Appendix P and Appendix R, respectively, in this Final EIS/EIR. Any analyses that would occur in the future (e.g., watershed analysis) would increase the specificity and increase the effectiveness of protection over that analyzed in the Draft EIS/EIR. In addition, see response to GEC-97.

GEC-2

This comment represents the commentor's opinion, rather than fact. The agencies disagree with this evaluation. The EIS uses all readily available information on the resources, and provides enough specific information about each individual resource (e.g., murrelets, old-growth forest types) to support the conclusions of the EIS/EIR.

GEC-3

This comment represents the opinion of the commentor, rather than fact. The EIS/EIR conclusions were not developed independently of the analysis. The commentor provides no specific examples in this comment of how the conclusions conflict with the text of the analyses.

GEC-4

The criteria for significance were not developed to rationalize the findings of significance. Rather, they were chosen to provide standards against which to measure the effects of the alternatives. The EIS/EIR explains in Section 3.1-1 the basis under which the criteria for significance were developed. The significance criteria were developed prior to any analysis. If there were independent, quantitative criteria for significance for a particular resource impact (e.g., maximum weekly average water temperatures in streams that are critical to salmonids) (p. 3.14-4) then these significance criteria were used to determine significance thresholds. In cases where specific criteria do not exist, an attempt was made to define reasonable criteria that fit both the effects being evaluated and the scale of the analysis across the property.

GEC-5 and GEC-6

Letter misnumbered; there are no comments GEC-5 and GEC-6.

GEC-7

The agencies disagree with this comment and consider the thresholds of significance to be appropriate for the actions considered. Please see, also, the response to GEC-4.

GEC-8

The cumulative effects analysis considers other actions and land uses in the watersheds where PALCO has ownership and, where appropriate, Humboldt County or regionally. The cumulative effects analysis is

considered in an additive and synergistic manner. The Draft EIS/EIR analysis does not identify the effects of the alternatives as "proportionally minor." For aquatic related systems they identify that the actions will result in trends towards a properly functioning aquatic system, which results in improved conditions with respect to baseline conditions and with respect to projections under no action/no project alternative.

With respect to terrestrial habitats and associated species, the cumulative effects analysis focuses on LSH habitat fragmentation and connectivity over Humboldt County considering both non-federal and federal activities in the foreseeable future, and the effects in this area on marbled murrelets, northern spotted owls, and other late seral related species. The cumulative effects analysis necessarily considers past actions because the EIS describes the existing conditions under the environmental setting for each environmental factor. The existing conditions observed today are the result of both past human activities and past natural events. The existing condition is the starting point for considering the cumulative effects of the action alternatives and other non-federal and federal actions in the area.

GEC-9

The agencies disagree that the alternatives considered are limited and believe that a reasonable range of alternatives has been considered, pursuant to both NEPA and CEQA. In particular, the EIS/EIR considers alternatives which are capable of avoiding or substantially lessening any significant effects of the project, and sets forth an adequate range of alternatives to permit a reasoned choice.

As presented in Sections 2.3, 2.4, and 2.5, the alternatives were developed with respect to issues raised during the scoping process (see Appendix D). These include different harvesting schedules (Alternatives 3 and 4), different land bases (Alternatives 2, 3, and 4), a "FEMAT"-like scenario (Alternative 1), and a selective harvest scenario similar to a third-party forest certification (Alternative 4). The Draft EIS/EIR does not simply address the HCP and not deal with timber harvesting. All effects on the human environment are discussed with respect to the proposed action or its alternatives. Timber harvesting is the most fundamental action and its effects are considered throughout the Draft EIS/EIR as well as the effectiveness of proposed mitigation in reducing the effects of that timber harvesting and related activities such as road building.

GEC-10

The EIS/EIR describes and considers current conditions on PALCO's lands as part of the existing environmental baseline. The discussion of each environmental factor in the EIS/EIR includes a description of existing conditions. For example, the analysis of fish and aquatic habitat includes general characterizations of current limitations to productivity of aquatic resources in each of the watershed assessment areas on PALCO's lands and the EIS/EIR assumes that current habitat conditions do not fully meet requirements for priority fish species (3.8-31).

Similarly, both short- and long-term trends have been described and analyzed, consistent with NEPA and CEQA. The EIS/EIR and the Aquatics Conservation Plan of the HCP, for example, acknowledge that it will take decades to restore habitat conditions to a level where they function properly and it is therefore necessary to compare short-term and long-term effects. The EIS/EIR assumes that current aquatic habitat conditions might remain the same or become worse before they improve, primarily because of past and potential sediment influxes. It also notes that current populations of priority fish species in some or all portions of affected drainages could continue at low levels or decrease further, perhaps to levels that could not sustain the populations. Thresholds of significance for fish and aquatic habitat under each alternative are defined and shorter-term impacts have been evaluated in terms of whether they reach thresholds of significance independent of longer-term benefits. An example is found in the discussion of wet-weather road use and construction and the potential to exceed the threshold of significance for turbidity.

Enforcement of the ESAs take prohibition has been considered and is reflected in the federal description of the no-action alternative. As stated in the EIS/EIR, NMFS believes that existing Forest Practice Rules would need to be augmented to avoid take of coho salmon. This view is represented in terms of wide riparian buffers that NMFS considers as general take avoidance.

GEC-11

The commentor is incorrect that the EIS does not consider the impact of all of the actions contemplated under the proposed project. The EIS analyzes the effect of the SYP out to the term of the ITP (50 years) on timber harvest and yield and forest types (late seral habitat, old growth, and younger forest components). See, for example, Summary, and Sections 2.6, 3.9, 3.13. The SYP must, however, be renewed after 10 years according to state law (see p. I-10 of EIS/EIR). Other impacts (e.g., economic effects) are analyzed only out to the 10-year horizon, since carrying the analyses out further would be speculative.

With respect to evaluation of timber harvesting and HCP mitigation, see response to GEC-9. With respect to alternatives considered, see response to GEC-9. With respect to deferring analyses, see response to GEC-1. With respect to past impacts, see response to GEC-8. The agencies disagree that the Draft EIS/EIR does not identify significant effects and mitigate for them. The agencies consider that the document does provide sufficient information to meet CEQA and NEPA requirements. The potentially significant effects associated with timber harvesting, road construction, gravel mining, and other proposed activities are extensively presented in the various resource sections. The proposed mitigations are evaluated to determine their effectiveness in minimizing effects.

GEC-12

With respect to deferral of analyses, see GEC-1. For analyses such as watershed analysis, performance standards are no less protective than the minimum mitigation presented for the proposed action/proposed project.

Since the requirement for watershed analysis is new, and time-consuming to carry out, such analysis must be accomplished in the future. There is no way that this could have been completed prior to preparation of the current EIS/EIR. The interim (3-year) prescriptions for aquatic resources are included to insure that aquatic resources are adequately protected while watershed analysis is being carried out.

The population studies and effectiveness monitoring provisions of the HCP for marbled murrelet, northern spotted owl and other List A wildlife species (pp. 2-77 to 2-79) are not a deferral of mitigation, but are included to allow the plan to adjust its take provisions and protections in response to changing conditions of the respective wildlife populations.

Field inspections for rare and uncommon flora (p. 3.9-46) are appropriate to conduct at the time of THP formulation because their protection is required under THPs, the occurrence of such species keeps changing, and it would be impractical and not meaningful to survey the entire property for such species in conjunction with the present EIS/EIR. Site-specific surveys are necessarily part of planning for individual harvest sites rather than applicable at a programmatic level for the property as a whole.

With respect to cultural resources (page 3.15-17), the Draft EIS/EIR specifically states that “mitigation associated with PALCO lands must avoid, or provide for data recovery, for significant archeological and historic sites to reduce potential adverse effects to less than significant” (page 3.15-19). Site-specific surveys are necessarily part of planning for individual harvest sites rather than applicable at a programmatic level for the property as a whole.

GEC-13

With respect to environmental baseline, see response to GEC-10. In addition, this comment misrepresents the analysis in the Draft EIS/EIR. As noted in GEC-10, the environmental setting or environmental baseline is the existing condition. For example, the discussion of change in habitat fragmentation and connectivity over time in Section 3.10.1.2 (p. 3.10-26 through 3.10-34) addresses current conditions and p. S-22 and pp. 3.10-108 through 3.10-116 discuss change in conditions over time under each of the four principal alternatives. For all other environmental factors, effects are also considered with respect to the current condition, between alternatives, and over time.

The commentor is also incorrect in stating that there is no benefit to the HCP/SYP because the effects of the HCP/SYP over the term of the permit are compared with the extrapolation of current practices into the future. The correct interpretation of CEQA, as was incorporated into the analysis in the EIS/EIR, is to compare future conditions under the project with *both* existing conditions and the extrapolation of the status quo (i.e., current Forest Practice Rules, no permit) into the future. See, also, response to comment GEC-10 on this issue.

GEC-14

As noted on page 2-24 of the Draft EIS/EIR, CEQA does not require either a projection into the long-term that could be deemed speculative nor does it require a quantitative analysis of the no project alternative for comparison with other alternatives (14 C.C.R. 15126[d][4]). With regards to the long term, the Draft EIS/EIR specifically states that, in CDF's view, projection into the long-term future is too speculative to evaluate. However, the EIS/EIR does evaluate long-term conditions under the No Action/No Project alternative, as the federal version of that alternative. The federal version of the No Action/No Project alternative allows that alternative to be compared across the board with the other action alternatives, as in Tables S-1, S-3, S-4, S-5, S-6, 2.5-2, 2.6-1, 2.6-2, 3.9 (a-j) and accompanying text.

Also, the Draft EIS/EIR does discuss maintenance of existing conditions as a possible alternative; it specifically presents discussion of the maintenance of existing conditions with respect to the foreseeable future as the basis for the no project alternative. The maintenance of existing conditions *is* the continued application of the state FPRs under individual THPs. On page 2-24, the Draft EIS/EIR indicates that the no project alternative focuses on the near term based on individual THPs that would be evaluated on a case-by-case basis. Consequently, the Draft EIS/EIR correctly uses 14 C.C.R. 15126[d][4] with respect to restricting speculative impacts analysis in the long-term future.

GEC-15

See response to GEC-10.

GEC-16

The Draft EIS/EIR assesses the environmental effects of all project actions, including covered activities under the HCP/SYP and land acquisition and subsequent management. With respect to evaluation of timber harvesting and associated mitigation, see response to GEC-1 and GEC-9. In addition, the amount of acres harvested and effects by watershed and in total are the basic effects that are evaluated throughout the document. For example, Table 2.6-1, the comparison of alternatives table, lists suitable and possibly suitable murrelet habitat harvested within 10 years and 50 years and acres of northern spotted owl habitat harvested in these same time periods. Also, see Tables 3.3-3, 3.3-4, 3.6-6, 3.7-5, 3.4-7, 3.9-5, 3.9-6a to 3.9-6j, 3.9-7, 3.10-10, and Appendix N.

GEC-17

See response to GEC-4. CEQA Guidelines Appendix G significance criteria are general (e.g., "Substantially degrade water quality," "cause substantial flooding, erosion or siltation") and were used as starting points in determining the more focused and project-specific significance criteria developed for this EIS/EIR. Project- and species-specific significance criteria were determined as indicated in section 3.1 and the beginning of each resource effects section in chapter 3. Such a procedure is appropriate under CEQA and NEPA. CEQA section 15380 is simply a definition of rare, threatened and endangered species and contains no discussion of significance. CEQA section 15382 is simply a general definition of significant effect on the environment, which provides no guidance on how to develop or define thresholds of significance for specific parameters. The agencies do not agree that the thresholds are counter to environmental protection goals. With respect to the comment on wild and scenic rivers, the threshold effect is discussed in the effects section on page 3.18-2 but the definition was inadvertently left out under that heading on page 3.18-1. It will be added in the Final EIS/EIR.

Additionally, the identification of significant effects is consistent with the U.S. Fish and Wildlife Service NEPA procedures at 550 FW 3.3B(2) (comment incorrectly cited these procedures as part of the Code of Federal Regulations). The section in question relates to FWS guidance for determining whether to prepare an environmental impact statement and mirrors NEPA implementing regulations at 40 CFR 1508.27.

GEC-18

As noted in the response to GEC-8, the cumulative effects analyses explicitly consider the past actions as part of the baseline conditions from which current and reasonably foreseeable future impacts progress. The Draft EIS/EIR does not substitute a comparison of the project's effects with cumulative regional effects. Sections 3.2 and 3.6.6 present specific information on other projects (e.g., HCPs and THPs) and land uses that were considered in the cumulative effects analysis. The comment provides no specific information on projects that were not considered in the Draft EIR/EIR. The effects of the proposed action and other alternatives are specifically considered with respect to other actions and land uses within the watersheds where PALCO owns land. With respect to terrestrial habitats, the effects on PALCO's ownership are also compared with effects at a broader level (e.g., Humboldt County) (e.g., in Table S-5, and Section 3.6) The discussion the commentor refers to on pp. 3.10-157 through 161 does include quantitative information on the amount of late seral and old-growth habitats in Humboldt County and a broader three-county area, and the relative impact of loss of these habitats due to the project on regional habitat connectivity. (See also response to GEC-9). Consequently, the agencies disagree with the statement that there is no project plus cumulative effects analysis in the Draft EIS/EIR.

GEC-19

Since both analyses are presented in the Draft EIS/EIR, it is not necessary to present only one analysis.

GEC-20

The commentor misunderstands the text of the EIS/EIR. The discussion on page S-22 states that a large, contiguous patch of old-growth redwood would develop within the Headwaters Reserve as a result of the project, which would not be the case if the reserve were not established and logging were allowed to continue within this area under THPs, except where there were occupied murrelet sites. This difference is also discussed in Chapter 10 (p. 3.10-111). Thus, establishment of the reserve is not mitigation. However, the formation of a large patch of old growth that could not exist without establishing the large reserve is an effect which compensates for the late seral habitat outside the reserve, which would be lost even if the project were not implemented (No Action). Pages S-23, S-25, S-26, and 1-11 have no statements saying that

the Headwaters Reserve would be considered mitigation. Page S-25 (cultural resources) correctly describes the public acquisition of land as a potential benefit for undocumented historic and prehistoric resources. It does not state that it is mitigation. In addition, the Draft EIS/EIR does not consider the purchase of the Headwaters Forest by the federal and state governments as mitigation for activities on the remaining PALCO lands. Rather, the effects of its preservation are appropriately considered in the assessment of overall environmental effects. The commentor provides no specific references to where application of FPRs provides mitigation. The document does not assume consultations and monitoring measures in and of themselves would mitigate environmental effects; these measures are presented as a means to describe how the mitigation measures would be implemented and modified as necessary

GEC-21

The entire Draft EIS/EIR is a disclosure document, and the mitigation and avoidance of effects is discussed throughout the document.

GEC-22

The effects of AB 1986 are within the decision space provided by the analysis of the other alternatives evaluated within the Draft EIS/EIR and thus could be implemented on that basis (see page 2-4 of the Draft EIS/EIR). Additionally, the components of AB 1986 are not "piecemealed." The effects of implementing this legislative action are discussed and disclosed in each resource section of the document, in the summary discussions in chapter 2, and in the summary at the beginning of the document. The effects of AB 1986 are discussed in detail in these places. It should also be noted that at the time of the Draft EIS/EIR publication, PALCO had not adopted the provisions of AB 1986 as part of its HCP, and it was not known whether AB 1986 would be adopted by PALCO and, if so, how its provisions would translate to on-the-ground prescriptions. As such, AB 1986 was addressed appropriately in the Draft EIS/EIR.

GEC-23 and GEC-24

A full range of alternatives was developed and analyzed. Sections 2.3 and 2.4 of the EIS fully explore the development of project alternatives, and why certain alternatives suggested during the scoping process were not retained for detailed analysis. The comment provides no information on which issues identified during scoping were not reflected in alternative development. The comment provides no information as to why the alternatives are unreasonably limited. With respect to other silvicultural prescriptions, the alternatives vary from entirely selective harvest to high percentages of clearcutting. This range encompasses essentially the entire range of possible outcomes on the various PALCO landbases. The comment does not identify any variations in silvicultural prescription that could be added to the analysis. With respect to a FEMAT type alternative, the reviewer is directed to Alternatives 1 and 3 which specifically includes many of the FEMAT prescriptions. See also Response to Comment GEC-9.

GEC-25

Alternative 1 is not missing from Table 2.6-2. Thresholds of significance do not have to be identified for the no project alternative. Significance is determined by comparing the action alternatives to the no action alternative. Significance of effects cannot be determined by comparing the no action alternative to itself.

GEC-26

This comment incorrectly considers that no timber harvest is ever allowed anywhere near occupied marbled murrelet habitat. This assumption is not correct. FWS and CDFG have a variety of protocols and measures, including avoiding the nesting season, whereby timber harvest near occupied murrelet habitat can proceed. Consequently, the alternative analysis is correct and does not need to be modified.

GEC-27

Wetlands are easily avoided during road building; consequently, no wetlands are expected to be lost through fill comparable to a development project. The reviewer is also directed to Table 3.7-5.

GEC-28

The indicated discussion is presented in the section the comment references. The analysis (see Table S-1 and Table 2.6-1) shows that under the No Action alternative the amount of non-old-growth late seral habitat would decline by 25,000 acres due to permitted harvest. This area, which has been timberland for over a century, would continue to be used for this purpose regardless of whether the HCP/SYP is implemented.

In a regional context the loss of 40,000 acres of LSH is less than significant (see also Table S-4 for the regional context of loss of old growth). In addition, the set-asides in the MMCAs and 25,000 acres in the watercourse protection zones, plus the late seral retentions required for northern spotted owl, together make the impact of cutting the remaining acreage less than significant across the landscape. The large trees required to be left in the watercourse protection zones would continue to provide a continuity of natural vegetation that supports wildlife.

The loss of late seral habitat is also a temporary or cyclic impact, since harvested areas are reseeded or allowed to naturally revegetate from stumps or seeds, and eventually young forest and mid-seral stages will become late seral habitat if left unharvested.

GEC-29

The indicated discussion is presented in the section the comment references. See response to comment GEC-28.

GEC-30

See response to GEC-26. Again, the assumption is incorrect that any timber harvest in and of itself results in take. FPRs include 'no take' restrictions for marbled murrelet and northern spotted owls, yet timber harvest can occur with appropriate restrictions.

GEC-31

With respect to baseline, see response to GEC-10. With respect to Peter Moyle's comments, see responses to PM.

GEC-32

The comment is correct. The proposed action (which includes purchase of the Headwaters Forest), not the proposed HCP, is consistent with the marbled murrelet recovery plan because the proposed reserve would come into public ownership. The text has been modified in the final EIS/EIR.

GEC-33

The significance of the marbled murrelet impacts is that the murrelet is listed as a threatened species. The EIS did conclude (see, for example, Table 2.6-2, p. 2-51) that short-term impacts to the murrelet population could be significant. The greatest period of risk to the species is 10 to 30 years, and is considered short term according to the Recovery Plan. Long term, as defined by the Recovery Plan, is the period from 30 years to 50 years and beyond, during which the provisions of the HCP and other protections should result in recovery of the species. Also see response to GEC-10.

GEC-34

See Appendix P for the revised NSO Conservation Strategy. Also see response to comments by Alan Franklin, Joyce Kadoch, and Peter Carlson. Incidental take is expected to occur as a result of the action by the reduction of habitat within known home ranges and across the landscape, as well as by some potential noise disturbance. However, mitigation measures for this take are required in the conservation plan, including pre-THP surveys and seasonal restrictions around known nests.

GEC-35

See response to HC-1 and HC-2.

GEC-36

The discussion uses existing conditions as the baseline. Stream temperature would improve over the long-term because of the FEMAT buffer RMZs. In addition, the buffers would filter sediment from potential mass wasting. However, the lack of road management under this alternative would result in the current condition of road related sediment delivery to streams. The Draft EIS/EIR states sediment water quality parameters would not improve, that is over the short and long term.

GEC-37

See response to GEC-10 and GEC-36. With respect to George Pess' comments, see responses to GP.

GEC-38

Based on public comments and agency issuance criteria, additional mitigations have been added to the wet weather road use restrictions. The mitigation now states that all use of non-paved roads shall cease during periods when precipitation is sufficient to generate overland flow off the road or when it is capable of leaving the road. Please see Appendix P of the Final EIS/EIR for the Aquatics Conservation Plan, which contains more information on the control of sediment from roads and other sources.

GEC-39

With respect to thresholds of significance, see response to GEC-7. As discussed in section 3.4, 3.6, and 3.7 of the Draft EIS/EIR, the level of sedimentation and associated quality of habitat is expected to improve over the term of an ITP and contribute towards a properly functioning aquatic system. The moderate rating indicates that there is a level of risk associated with timber operations, but those risks have been evaluated with respect to the proposed mitigations and considered reasonable. With respect to David Montgomery's comments, see responses to DRM. The agencies disagree that the Draft EIS/EIR analysis is fatally flawed.

GEC-40

The Draft EIS/EIR contains extensive discussion of the significance thresholds and relates the effects of the proposed project and its incorporated mitigation to them. Consequently, these effects are discussed in detail with respect to NEPA and CEQA. In addition, see response to GEC-7.

GEC-41

This comment misinterprets the purpose of the referenced sections. As noted in the introduction to section 2.9, a mitigation monitoring plan must be adopted by a lead agency under Public Resources Code Section 21081.6. Note the terminology; it is a plan to monitor the mitigation. Consequently, the monitoring is not considered mitigation. With respect to the individual species, see section 3.10 of the Draft EIS/EIR.

GEC-42

The mills are assumed to operate whether or not an ITP permit or SYP are approved or not. Consequently, it does not require detailed analysis.

GEC-43

Dust effects from gravel mining are extremely minor compared to the transportation-related effects. Additionally, these effects have only minor changes associated with the proposed action. With respect to slash burning, the commentor is directed to Table 3.3-4, Annual Emissions from Slash/Broadcast Burning.

GEC-44

The agencies disagree and consider the analysis in the EIS/EIR to be appropriate.

GEC-45

As noted in the responses to GEC-8 and GEC-10, existing conditions are considered as the baseline. Consequently, the indicated sediment loads are considered as part of the baseline.

The information the commentor seeks can be inferred from data presented in various parts of the EIS/EIR. As is noted in Chapter 3.6 some of these watersheds are prone to mass wasting even in the absence of human activities; the proportional contribution to sediment loadings of logging relative to natural processes is not known. However, some information may be gleaned by comparing Table S-2, which summarizes the proportion of these basins where logging occurs and the proportion in PALCO ownership, and Tables 3.4-2 and 3.6-1, which together show the proportion of each of these basins that represent landslide features. Thus, for example, the Van Duzen basin is 189,000 acres (p. 3.4-9) and 25,000 acres are owned by PALCO (14 percent). Sixty-six percent of watershed is used for timber production and four percent of the watershed represents landslide features. Since 40 percent of the watershed is on PALCO land, this means that 1.6 percent of the landslide features are on PALCO land (i.e., four percent of 40 percent). The annual sediment budget from this basin is 51 million metric tons, of which 73 percent comes from hillslopes (Table 3.6-2). Therefore, the relative contribution of logging to mass wasting in this watershed is probably relatively high due to hillslope erosion and 66 percent timber use, but the contribution of this that is PALCO's is relatively small. The relatively high contribution of hillslope erosion to sediment loading has led to the increasingly stringent aquatic protection measures that are now part of the HCP.

GEC-46

As noted in section 1.8.1, the TMDL process is separate from the HCP and SYP process. Since a TMDL has not been developed for any of the streams on PALCO land by the appropriate agencies, there is no standard to comply with.

GEC-47

The indicated temperatures are part of the baseline conditions, which do reflect past logging practices adjacent to these streams. These conditions should be improved by riparian shading in the various alternatives compared to existing conditions as discussed in the effects analysis of the alternatives (see Sections 3.4, 3.7, and 3.8). Consequently, this information is used in evaluation of cumulative effects.

GEC-48

The information the commentor has asked for is not available for the WAAs and HUs in the project area. However, inferences from streams in other areas with similar geomorphology are valid and have been used in the analysis. The suggested level of information is not necessary to evaluate potential effects and provide

information to the decision maker and the public. The agencies consider the level of analysis adequate for these purposes.

GEC-49

As indicated by the discussion and references in the section commented on, No.

GEC-50

This is essentially the same question as in GEC-47. The requested information is exactly what is discussed in Section 3.4, 3.7, and 3.8. The stream temperatures on PALCO lands are discussed in these sections as well as in Table 3.4-4 and Table 3.4-5. The discussion and tables clearly evaluate temperatures in relationship to canopy closure which is directly related to timber harvest (except in natural openings).

GEC-51

The agencies consider this level of information sufficient. Information on existing monitoring is described in the EIS/EIR.

GEC-52

Past logging and its effects are extensively discussed in the Draft EIS/EIR. In particular, the reviewer is directed to sections 3.6.1.4 and 3.7.4.2.

GEC-53

The rationale for 1,000 feet (continuous) of aggradation/scour is based upon a segment of stream that is commonly and easily measured for biological and physical stream conditions (Washington Timber-Fish-Wildlife Ambient Monitoring Program Manual, July 1993). The analysis discloses the effects for each alternative on the aggradation/scour from the delivery of management related coarse sediment into streams.

GEC-54

See response to TNL-30.

GEC-55

The harvest rate by watershed is important to disclose impacts, as addressed on page 3.4-38. To clarify the effects, this paragraph will be placed under Alternative 2 discussion.

GEC-56

The page and section referred to (page 3.4-41, Section 3.4.3.3) is not an impact analysis, it is a general background discussion. Consequently, it would be inappropriate to place an impacts analysis at this location. However, the impacts the commentor refers to are discussed on pp. 3.4-42 through 3.4-50 and 3.4-57 through 3.4-58.

GEC-57

Grazing has been evaluated in the Draft EIS/EIR (e.g., see Sections 3.6.2.6 and 3.6.3.7). With respect to deferral of analyses, see response to GEC-1.

GEC-58

An estimation of sediment delivery to streams is impossible for this landscape level analysis. The baseline used is the applicable laws that protect beneficial uses and apply to the current management on the

landscape. The current water quality standards and the Basin Plan are the basis for determination of impact. The EIS/EIR must use existing laws as the basis for protecting beneficial uses. If the management of sediment is reasonable and controllable, the water quality standards are not violated.

GEC-59

The commentor misunderstands the passage referred to. This passage describes the process that would be used to respond to emergencies, in addition to all of the standard measures contained in the HCP to minimize the impacts of road construction and maintenance. An appropriate response to emergency conditions increases the efficacy of the mitigation as a whole, and is not a deferral to a future study.

GEC-60

The indicated effects are related to existing roads that have the potential to produce sediment whether they are used or not and whether an ITP or SYP is approved or not. Stopping logging would have no effect on whether the specific problems on existing roads would occur because the roads already exist and it is the roads, not the logging, that are causing the sedimentation problems described in this section of the EIS. The best mitigation for such impacts is the stormproofing and improvement plan discussed in the Draft EIS/EIR.

GEC-61

See response to GEC-12 and GEC-39.

GEC-62

See response to GEC-15.

GEC-63

See response to GEC-1. The indicated procedure is very specific and the mitigation is not deferred. In addition, the gravel mining component of PALCO's operations will not be included under the ITP.

GEC-64

See response to GEC-8, GEC-10, and GEC-28. Again, the commentor seems to believe that if the project (HCP/SYP) were not implemented, logging on these lands would cease entirely. This erroneous premise leads to the commentor's incorrect conclusion that the proposed HCP/SYP does not result in a beneficial effect. The effect is beneficial compared to what would occur in the absence of the project—continued logging with some form of stream buffers, but none of the additional measures contained in the HCP to reduce sediment.

GEC-65

The discussion on the referenced page indicates that the Mattole River is significantly impacted by sediment and excessive stream temperatures. That is why the TMDLs are being developed and why the additional HCP measures will apply.

GEC-66

The discussion referred to by the commentor is the general discussion under every section where Alternative 1 is discussed. The impact analysis is on the following page (3.5-10, 2nd column.)

GEC-67

See response to GEC-52.

GEC-68

The low abrasion resistance of the rocks in this area is addressed in sections 3.5 and 3.6.

GEC-69

The analysis and discussion is not in error. The amount of clay and its transport as wash load in a stream make its effects minor compared to silt and sand. Consequently, re-analysis is not necessary.

GEC-70

The comment is selectively quoting from the Draft EIS/EIR. The 100 foot buffers are discussed in both places. In addition, see response to GEC-69.

GEC-71

See response to GEC-1, GEC-8, GEC-9, and GEC-10.

GEC-72

Opinion noted. This is a general discussion of the appropriate FPR, not a determination of significance.

GEC-73

The threshold of significance used is an existing regulation. The means to avoid "unreasonable degradation" are contained in the language in the paragraph the commentor is referring to—specifically the retention of vegetation and soil bordering and covering wet areas. The THP process is described in Section 1.4.1. As noted there, CDF reviews THPs under a CEQA equivalent process and evaluates significant adverse effects. The wildlife agencies do not agree that the no net loss of acreage or function is an appropriate threshold. In addition, the comment does not reflect the discussion of CWA Section 404(f)(1) discussed on page 3.7-7 of the Draft EIS/EIR which indicates that construction and maintenance of forest roads are exempt from regulation when constructed and maintained in accordance with BMPs.

GEC-74

The EIS/EIR contains specific information about the number of acres out of the 200,000+ acres of the total property that are grazed—e.g., the South Rainbow Ranch (1800 acres) and the Chase Ranch (1250 acres) (p. 3.7-9). Therefore, the EIS does contain information regarding the scale of "localized significant effects" (1.5 percent of the total property). In addition, grazing is part of the historical use of these properties, and is not an essential part of the forestry activities under the HCP. Also, as stated on p. 3.7-9 of the EIS, "If watershed evaluations indicate that grazing is having an adverse effect on aquatic resources, additional mitigation measures....(which could include) 'ceasing all grazing activity' would be implemented."

GEC-75

See response to GEC-20.

GEC-76

While the shade requirement might not be met until late in the HCP, the proposed action will steadily improve shade conditions and, therefore, does not exceed the significance threshold.

GEC-77

As noted in the discussion of the no project alternative, the individual THP undergoes CEQA equivalent review and effects are reduced to less than significant. As noted in the discussion of no project, FPRS are not

simply applied, other issues such as the "coho considerations" and site-specific conditions are considered. Consequently, the provided analysis and language is appropriate. The additional aquatic protections incorporated into the Final HCP will improve LWD recruitment toward full potential recruitment.

GEC-78

See response to GEC-69.

GEC-79

The conclusions regarding significance for these riparian impacts are described in the referenced text as the "level of protection" given the various stream zones under the proposed action. The overall conclusion is of impacts that are less-than-significant to beneficial, as summarized in Table 2.6-2 and Table S-3.

GEC-80

See response to GEC-8.

GEC-81

Lack of mapping information of small Class III streams is standard in forested, mountainous terrain. Normal mapping techniques are inadequate to locate them and they are usually only found on the ground. This fact is also stated in the Draft EIS/EIR (e.g., on page 3.8-1). The lack of detailed knowledge of their location or exact estimates of the mileage is not necessary for disclosure of potential effects to the decision makers and the public. Class III streams are extensively discussed in Sections 3.4, 3.6, 3.7, and 3.8 of the Draft EIS/EIR. Consequently, the agencies consider that the potential effects related to them are adequately discussed.

GEC-82

Thank you. The number has been changed to 729.4.

GEC-83

The Draft EIS/EIR used a variety of data sources in addition to PALCO's data with respect to species distributions, water temperature, and other parameters, as shown in citations in the text and in the bibliography (Chapter 4). In addition, see page 3-2 of the Draft EIS/EIR under Available Information.

GEC-84

Because it is not possible to improve habitat instantaneously over hundreds of miles of stream system, the agencies consider it appropriate to institute prescriptions that will result in improvements in habitat. Large-scale habitat improvement can occur only with respect to the appropriate timescales of sediment movement and riparian zone tree regrowth. In general, the short-term effects that this comment refers to are the continuation of existing conditions which can be improved only by the types of prescriptions being proposed for Alternative 2 or for the other action alternatives. Consequently, the agencies consider the analysis to be appropriate. In addition, under all alternatives, environmental conditions would start improving because of the prescriptions implemented.

GEC-85

The residual effects of past logging are an existing condition not a result of the implementation of any action. If this suggestion were used as the threshold of significance any action would be significant and even the implementation of a complete prohibition of timber harvest coupled with a 100 percent stream restoration

and riparian enhancement program implemented within a few months would be insufficient to reduce the effects to less than significant. The agencies consider the trend toward a properly functioning aquatic system to be an appropriate method of evaluating the alternatives considered in this Draft EIS/EIR. See also responses to GEC-8, GEC-10, GEC-28 and GEC-64.

GEC-86

See response to GEC-8 and GEC-10.

GEC-87

The comment indicated that 10 years should not be considered short term when steelhead, for example, have 3- to 4-year life cycles. The 10 years refers to the time required for any habitat changes to be realized due to the period needed for vegetation to become reestablished, for additional measures and prescriptions for riparian areas and upslope activities to become effective, and for firm baseline conditions to be established for monitoring purposes. It is recognized that the very short life span of salmonids does not fit well with the time required for HCP/SYP measures to take effect. Therefore, there very well could be a lack of response by salmonid species for 10 years (as discussed in Section 3.8 in the Draft EIS/EIR). No changes or reanalysis occurred for the Final EIS/EIR because "short term" refers to the expected period for measures that affect habitat to start to become effective, and not to salmonid life cycles.

GEC-88

See responses to GEC-77, GEC-84 and GEC-85.

GEC-89

In the referenced table, LWD recruitment *is* included in the last column of the table.

GEC-90

See response to GEC-1.

GEC-91

See response to GEC-84 and GEC-85.

GEC-92

See responses to GEC-77, GEC-84 and GEC-85. The application of property-wide prescriptions, road improvement programs, watershed prioritization sequence, and site-specific watershed analysis all address this issue.

GEC-93

See response to GEC-10 and GEC-13.

GEC-94

See response to ALA-135. The Mitigation and Monitoring Plan (draft attached to Final EIS and final version to be completed prior to EIS/EIR certification) shows in detail how company compliance will be achieved, including penalties and remediation for non-compliance.

GEC-95

The term "sensitive," as used on p. 3.9.1.1 has a different meaning than the term "cumulatively impacted by sediment," as used on p. 3.4-15.

GEC-96

Please see response to comment GEC-18. See also the discussion in the Summary (p. S-16 through S-19, including Tables S-4 and S-5.

GEC-97

The comment asserts that recommending future surveys as mitigation for rare and uncommon flora and unspecified modifications to THPs does not ensure mitigation for these species, and is not considered mitigation under CEQA. The comment states that the EIS/EIR should either require avoidance and buffers after surveys, or should call out the impact as significant.

The comment is incorrect in stating that surveys are not considered mitigation under CEQA. The California Supreme Court has stated that "an agency's commitment to monitor the effects of its activities may be considered as evidence of mitigation." Laurel Heights Improvement Association of San Francisco, Inc., v. The Regents of the University of California (1988) 47 Cal.3d 376, 412. The court also declared:

"We also reject the argument that the commitment is not specific enough. We think it unreasonable to demand a commitment to take specific action based on unknown and as yet unknowable test results." Ibid.

Given the court's language, we believe it is not unreasonable, and that it is permitted, to defer specific mitigation measures to future THPs where surveys reveal the presence of rare and uncommon flora. The circumstances on the ground will guide the development of mitigation measures in the CDF CEQA functional equivalent program that analyzes each THP for possible significant effects and then develops mitigation measures customized to minimize those effects. The site-specific circumstances may suggest that mitigation measures other than those suggested in the comment may be more appropriate. The decision on that mitigation should be deferred until the facts are known.

GEC-98

CDF would closely monitor Alternatives 2 and 2a. This would require PALCO to recalculate LTSY and reduce harvests if harvest levels proved to be unsustainable. This process is described in Section 3.9.5.2.

GEC-99

Past effects of logging are taken into account in the cumulative effects analysis because they are reflected in the existing conditions of habitat fragmentation that are found on the property, as described on pp. 3.10-30 through 3.10-34. See also responses to comments GEC-8, GEC-52 and GEC-85.

GEC-100

This comment incorrectly identifies the range of edge effects reported in the literature. As described on pages 3.10-28 and 3.10-29 in the Draft EIS/EIR, edge effects generally vary between 150 and 1000 feet into a stand, depending on what factor is being considered. The Draft EIS/EIR considers a buffer of 400 feet to be a median distance that incorporates most major edge effects.

GEC-101

Comment noted. The mileage has been corrected.

GEC-102

See responses to comments by LSA Associates. Refer to Appendix P for revised list of species proposed for coverage.

GEC-103

This comment indicates that the Migratory Bird Treaty Act does not permit any take of birds under its purview. The HCP should describe how it will comply with the MBTA.

As stated in the HCP handbook, the FWS has concluded that under certain conditions, a section 10 permit for listed migratory birds is sufficient to relieve an HCP permittee from liability under the MBTA for those species covered by the HCP permit. For the MBTA, this is accomplished by having the HCP double as a Special Purpose Permit authorized under 50 CFR 21.27. However, the following conditions must be satisfied before these protections apply: 1) any species to be so treated with respect to the MBTA must also be listed under the ESA; and 2) the incidental take of any such species must be authorized, subject to applicable terms and conditions, under section 10(a)(1)(B) of the ESA. The FWS believes this approach is warranted because the permittee already would have agreed to a package of mitigation measures designed to minimize and mitigate the take of listed species of migratory birds to the maximum extent practicable.

For unlisted MBTA species, the FWS has prosecutorial discretion as to whether or not to prosecute an incidental take if such take is in compliance with an ESA section 10 permit.

GEC-104 and 105

The commentor appears to have a fundamental misunderstanding of the project; an HCP is itself mitigation for the impacts of take of listed species. Therefore, in contrast to an EIR, which examines a development project, it is impossible to analyze the impacts of the project "prior to" mitigation. Secondly, the EIS/EIR does analyze the impact "post-mitigation" since this is the definition of project implementation. Thirdly, the purpose of the document is not to analyze the impact of timber harvest on timberlands—which is the continuation of an already permitted activity. See also responses to comments GEC-1, GEC-8, GEC-10, GEC-28, GEC-64 and GEC-85.

As noted in the response to GEC-1, the EIS/EIR is evaluating both timber harvest and associated proposed mitigation. To analyze timber harvest with no consideration of the associated mitigation would make the document extremely long and cumbersome, would misrepresent the proposed action and the other alternatives, and would not enhance the EIS/EIR's disclosure of effects to the decision makers and the public.

With respect to the second part of the comment, the draft EIS/EIR does not state that minimizing effects cannot result in significant effects. It states that in the present analysis, that is the case. In addition, see response to GEC-17. The agencies disagree that the analysis understates the effects and consider the analysis to be compliant with CEQA.

GEC-106

See response to comments GEC-12, GEC-17, GEC-33 and GEC-35.

GEC-107

See response to comments GEC 12, GEC-17, GEC-28 and GEC-30.

GEC-108

See response to comments GEC-17 and GEC-28.

GEC-109

See responses to comments GEC-12, GEC-77, GEC-79 and GEC-84.

GEC-110

The commentor is incorrect. Table 3.10-10 (p. 3.10-96) shows that by the end of the permit period there will be more acres of LSH in patches of over 1,000 acres, a greater acreage of interior habitat under Alternative 2 than under Alternative 1. This agrees with the text discussion on p. 3.10-100 and elsewhere, where it is stated that the most valuable patches of LSH and interior forest for wildlife are the very large patches (e.g., greater than 1,000 acres.)

GEC-111

See response to GEC-14.

GEC-112

The conclusion does not have to be revised. The rationale for the conclusion is provided in the discussion in the subsequent discussion on p. 3.10-127 (2nd and 3rd paragraphs) and the discussion on p. 3.10-128.

GEC-113

The pages referenced do not match the comment. Additional mitigation and monitoring measures are proposed by the revised Northern Spotted Owl Conservation Plan (see Appendix P).

GEC-114

The commentor is incorrect. The analysis given in the text and summarized in Table 3.10-9 provides an adequate chain of logic to support the conclusion that the impacts are less than significant. See also responses to comments GEC-12, GEC-77, GEC-79 and GEC-84.

GEC-115

See response to comment GEC-17.

GEC-116

This species has been removed from the list of covered species in the Final HCP.

GEC-117

See response to GEC-17.

GEC-118

See response to GEC-8 and GEC-10.

GEC-119

The commentor is incorrect in the conclusion that "the base land use compatibility assessment is based solely on plan compliance." The issues of land use compatibility are also discussed (see last paragraph on p. 3.11-7 and first column on p. 3.11-9 for a discussion of land use compatibility issues with respect to Alternative 1, discussion on p. 3.11-10 and 3.11-11 with respect to the other alternatives, which also references the general discussion included under Alternative 1.)

GEC-120

The relationship of the project to all relevant plans and policies is addressed in the appropriate sections of the EIS/EIR (e.g., land use, Section 3, transportation, p. 3.12-14 through 3.12-16; cultural resources, p. 3.15-11 through 3.15-13.)

GEC-121

See response to GEC-8. The reviewer is also directed to Sections 3.2 and 3.6.6. The commentor's request to consider project plus cumulative land use impacts throughout the County and their effects on the County's land use policies is irrelevant to the project at hand. The logging activities of the project (and other logging-related land uses) are permitted land uses that do not require any change in the County General Plan or its policies. Therefore, there is no reason to discuss the conformance of these permitted uses with such plans and policies. With respect to the relationship of the project to other federal and state regulations and policies, these are discussed throughout the EIS/EIR where relevant.

GEC-122

This topic is addressed where appropriate in Section 3.11 of the Final EIS/EIR.

GEC-123

Comment noted. See response to GEC-17.

GEC-124

The comment addresses the perceived lack specificity in the assessment of PALCO traffic on the local road and street system. The background for the analysis, and the limitations of our approach, are included in the introduction to the section and in the discussion related to local street system mitigation. The basic reasons for the general nature of the traffic assessment are twofold:

1. The level of information related to the exact number of trips, routes of logging trucks and PALCO employees, time of day, and areas of trip generation is simply not known. Our approach involved creating a highly imprecise "average", or "typical", day for each of the two decades, based on the estimates of annual average harvest yield. The trip generation level for each alternative was then compared to the base year trip generation, and in all cases the alternatives generated fewer trips than the base year. Therefore, there is no reason to evaluate in detail the intersections and roadway segments. And, of course, the necessary data regarding specific intersections and routes is not available anyway

2. The Draft EIS/EIR includes a discussion of local roadway system mitigation, and cites the current policies and actions taken by CALTRANS and Humboldt County, through their permit process, related to access from logging roads to the public roadway system. This process provides for evaluation of safety and congestion concerns.

GEC-125

This comment correctly points out that the usual Passenger Car Equivalent (PCE) factor was not used in expressing the total number of trips generated by the PALCO alternatives. This was not done for the following reasons:

1. These factors range from 2 to 5, depending on the terrain and roadway configuration. Inasmuch as there is no precise information regarding routes traveled and roadway data for all possible routes, there is no practical way to apply these factors.

2. These factors are of real value only in calculating the Level of Service (LOS) for roadway segments and intersections. Inasmuch as there was no intention of performing these calculations, no purpose is served by applying the PCE factors to the heavy truck trips generated by the PALCO alternatives.

3. In examining the relationship between the PALCO alternatives and the calculated Base Year trip generation levels, as stated above, all of the alternatives generated fewer trips than the Base Year. It would not serve any useful purpose to factor all the trip generation levels to a higher level, when the basic relationship would remain the same. This is assuming that an "averaged" PCE factor could be derived by some estimation method.

GEC-126

The EIS analyzes physical changes resulting from the project in all relevant sections. The physical changes do not result from economic changes, but rather the other way around. Therefore, the commentor's comment is irrelevant.

GEC-127

Economic data differ from other types of data used in the analysis, for the reasons described on p. 3.13-21 of the Draft EIS/EIR (namely the relationship between supply, demand, and price, which depend on world market conditions and cannot be accurately predicted beyond the short term.) This is common economic knowledge; no sound economic analysis would attempt to speculate economic conditions out to a horizon of 50 years.

GEC-128

The agencies consider that this mitigation does reduce effects to less than significant. The reviewer is directed to State Responsibilities under Section 3.15.2.1.

GEC-129

This comment is incorrect. The statement of benefit directly relates to the fact that resources currently under private ownership would be placed into public ownership.

GEC-130

The analysis given in the EIR follows explicitly the methodology of the VQO analysis as a surrogate for the CEQA analysis under the FPRs, as described on p. 3.16-11 of the EIS/EIR. Therefore, the analysis in the EIS/EIR for the visual categories as given, is accurate and does not need to be revised.

GEC-131

See response to comment GEC-18.

GEC-132

The buffering of Grizzly Creek State Park, including a reserve on the east, south and west sides of the park from the timber harvest areas by at least 1/4 mile, would shield park users visually and from the noise of timber harvest activities occurring on PALCO lands; therefore, timber harvest activities would have little or no impact on the experience of park users.

GEC-133

Please see response to comment GEC-18.

GEC-134

See the discussion on p;. 3.18-2, which states that the Director of CDF is responsible for determining that harvest practices along the wild and scenic rivers be compatible with the objectives of special treatment areas, as well as the buffers surrounding Grizzly Creek State Park. This action would make the impacts to wild and scenic rivers less than significant. The 170-foot buffer surrounding the stream meander belt as a no-cut or selection cut zone on a Class I stream would also provide a level of protection of the scenic resource to river users along this stretch of the Eel River.

GEC-135

See response to GEC-134.

GEC-136

See response to GEC 134.

GEC-137

As indicated in the referenced section, the issues are also presented in other sections. As noted in section 3.13 Economic and Social Environment, the people effected by the various alternatives are PALCO employees who are among the highest paid workers in Humboldt County.

GEC-138

With respect to past logging impacts, see response to GEC-52 and GEC-8.

GEC-139

As discussed in sections 3.6.1.4 and 3.7.4.2 stream channel condition is the result of over 100 years of timber harvest and natural storm activity. Current conditions are not indicative of likely effects under current FPRs.

GEC-140

The effects on the landscape are extensively discussed throughout section 3.6. As noted in response to GEC-1 the conclusions are based on the effectiveness of mitigation measures. The agencies consider the analysis to be appropriate for determination of potential effects.

GEC-141

These indicated sections are summaries which highlight key points and not the complete set of prescriptions. See appendix E, Appendix 19 of the Draft HCP/SYP (PALCO 1998), and Weaver and Hagans (1994) for additional details. To be practicable, road standards must also allow for some level of flexibility in implementation which are addressed by review prior to implementation. In addition, see response to GEC-60 and GEC-21.

GEC-142

As noted in the footnote to Table 3.9-7, the FREIGHTS model overestimates the amount of tractor logging that can occur. Additionally, there is recovery of soil compaction between entries and not all areas are entered at the same time. CDF considers that tractor skid trials are also a necessary component of forestry operations and that some reduction in soil productivity is appropriate on such trails.

GEC-143

See response to GEC-142.

GEC-144

The commentor appears to have little knowledge of the actual economic conditions in Humboldt County and the degree to which the economy is dependent upon the timber industry. The timber industry is the major resource-based employment that supports other types of employment (e.g., service industries) in the county. It is unlikely that persons displaced from employment in the timber industry could find employment elsewhere in the county because by the economic multiplier effect, elimination of timber industry jobs would eliminate jobs in other employment sectors, and thus depress employment even beyond the initial jobs lost.

GEC-145

The potential lands are analyzed in the indicated section. All the adjacent watersheds have been considered in the Draft EIS/EIR and the conclusion is that 25,000 acres even in a single watershed, managed under the prescriptions associated with the HCP/SYP, would not have significant adverse effects. No future studies are proposed here. As stated on p. 3.20-1, the only analysis proposed is to determine that there are no unallowed circumstances in the acquired land such as the presence of old-growth habitat.

GEC-146

See response to GEC-12.

GEC-147

Additional discussion has been placed in the Final EIS/EIR.

GEC-148

This comment is incorrect. The herbicides will be applied on all PALCO lands at the approximate rate of harvest.

GEC-149

See response to GEC-18.

GEC-150

See response to GEC-12.

GM-1

The wildlife agencies agree that riparian buffers are essential for the survival and recovery of coho salmon and other listed species to be covered by the plan. The Wildlife Agencies regard the riparian buffers and the prescriptions that will be applied within them as sufficient for the needs of these species. Subject to subsequent modification by watershed analysis, Class I streams will be divided into two bands: a 100-foot no-harvest buffer and an outer band from 100 feet to 170 feet which restricts the harvest to single-tree selection, based on a basal area and tree retention requirements. Class II streams will be subject to a 30-foot no-harvest and an outer band from 30 feet to 130 feet that also applies single-tree selection, basal area and tree retention requirements. Class III streams will be subject to a 30-foot no-harvest buffer but during the first 5 years of the HCP, PALCO will be allowed to commercially thin 775 acres and to conduct some harvest on an additional 1,400 acres. All 2,175 acres will be subject to a 10-foot no-harvest buffer as well as other restrictions and any modifications that result from watershed analysis. Additional requirements that will

apply in class I, II and III buffers are described in the Final HCP and have been designed to address specific habitat conditions on PALCO's lands, pending the results of watershed analysis. The riparian buffers in the HCP address a smaller number of species than the 300' buffers applied to federal lands. FEMAT buffers are intended to address the needs of 199 species, including lichens and plants found within riparian corridors across 24 million acres. In contrast, the PALCO HCP has been designed for 17 aquatic and terrestrial species found on the company's 211,000 acres. The HCP applies the same principles and is consistent with the science upon which FEMAT is based. For example, the best available science indicates that essential aquatic habitat conditions are provided by a late seral forest within one tree height of streams. The HCP limits commercial harvest within the 170-foot buffer and applies measures that will ensure that the buffer will provide late seral forest conditions.

The Wildlife Agencies are also confident in the watershed analysis process that will be applied to the lands covered by the HCP. The analysis will follow the proven methodology that has been developed and used for forest lands in Washington State. The prescriptions that result from the watershed analysis process will tailor mitigation measures more closely to site-specific conditions on PALCO's lands but will be as protective as the pre-watershed analysis prescriptions. The Wildlife Agencies regard the maximum limits on watershed analysis (e.g., maximum 170-foot no-cut buffers on Class I streams) as conservative and biologically defensible. The State legislation that incorporated these limits (AB 1986) was based on a watershed analysis framework document prepared by NMFS and FWS (February 3, 1998). The state is not limiting the prescriptions of a federal HCP, but rather adopted the conclusions of federal biologists.

The watershed analysis process has been modified and PALCO will not be able to reject prescriptions established by the Wildlife Agencies. A peer review process will be used where either the Wildlife Agencies or PALCO disagrees with a recommended prescription proposed by the watershed analysis team. However, the Wildlife Agencies will have the authority to establish prescriptions they determine to be appropriate, subject to the limits developed by the federal biologists and adopted in the State legislation.

GM-2

See responses to CAF-5, CAF-6, CAF-7, LMR-12, LMR-15, and MWSSG-3.

GM-3

See response to DJK-12.

GM-4

See responses to DRM-34, GEC-38, CTETAL-6, LMR-16, and LMR-24.

GM-5

The cumulative effects component of the HCP (the disturbance index) has been modified to trigger change in management activities. The disturbance index, which will be calculated at the hydrologic unit scale, will account for management activities as well as roads and mass wasting events. If the 20 percent upper limit of the index is exceeded, PALCO will refrain from activities with the highest disturbance ratings and must conduct its activities in a manner that will lower the index to less than 20 percent. If the index is less than 20 percent, no activities will be conducted that will increase the index in excess of the 20 percent upper limit.

GM-6

The HCP's IA requires PALCO to submit every THP that includes Covered Lands to NMFS and FWS at least 30 days before state approval for review and comment and a finding as to whether the THP is consistent with the federal permits. CDF will incorporate all of the conservation and management measures of the

HCP's Operating Conservation Program that are relevant to the THP. The Wildlife Agencies believe this process will ensure that THPs approved by CDF are consistent with the HCP and the federal permits.

GM-7

See response to JBBDS-1, BRC-1 and BRC-2.

GM-8 and GM-9

The list of covered species and the number of covered activities have been reduced since publication of the Draft HCP. The Wildlife Agencies believe that the HCP adequately addresses the needs of the remaining unlisted covered species and that coverage can be provided under the incidental take permit at the time any of the covered species is listed. This approach is consistent with previous HCPs and with the Services' HCP Handbook.

The Services have determined that grazing will not be covered by the federal permits at this time. Similarly, gravel mining is not being covered but will continue to be authorized by an existing permit issued by the U.S. Army Corps of Engineers. Gravel mining may be included as a covered activities when additional information obtained and analysis has been conducted by NMFS and FWS.

II-GM-1

Comment noted. Also, see response to comments LRM.

GP-1

As indicated in the quote from the Draft HCP/SYP, existing quarries will be mapped at the time of watershed analysis so that their effects can be considered within that process and additional mitigation incorporated if necessary. The quote does not indicate that mapping quarries would be considered mitigation, but rather they would be mapped so as to be evaluated within the watershed analysis process.

GP-2

Individuals with qualifications similar to those outlined in this comment have been used for past analyses and will continue to be used. All watersheds will be evaluated for road improvements and watershed analysis will be instituted in all watersheds. The Final HCP/SYP calls for sediment evaluations of each watershed.

GP-3

The procedure of evaluating and maintaining the road system would be expected to minimize the potential effects of roads that are potentially unstable. Knowing where potentially unstable areas are will guide future maintenance and upgrading if signs of instability develop. The agencies consider that this level of attention to the road system will be adequate to reduce potential effects. See also responses to LMR-16, LMR-19, LMR-24, CTETAL-6, DRM-34, CAG-16, and CAF-6.

GP-4

Restorable streams are described in the Draft HCP/SYP in Volume IV, Part D, Section 1.2.2.2., page 31, as indicated in the FPRs at 916.2(a)(1). Culvert upgrading is a common circumstance where the restorable stream concept is used by CDFG. Watershed analysis will analyze and prescribe treatment for existing culverts with fish passage concerns. See response to IFR-14.

GP-5

See response to DRM-13.

GP-6

See response to GP-4.

GP-7

Comments and opinions noted. Refer to the responses to IFR-9, IFR-11 and IFR-17 regarding RMZ design. Employing the "actual site potential with each stream buffer" is not necessary from the onset as long as the initial prescriptions are deemed appropriate from the standpoint of allowing stream and riparian habitat on which the species depend to be maintained in or trend toward properly functioning conditions.

The Draft and Final EIS/EIRs evaluate the effectiveness of the riparian strategy offered to protect coho salmon and other aquatic species. Buffers were evaluated with regard to protection within the context of riparian management goals. For this analysis, the level of protection required to maintain the aquatic system was the main goal. The riparian functions evaluated specifically include: shade, LWD recruitment, leaf and needle litter inputs, bank stability, and sediment control, as well as microclimate. As part of the Draft EIS/EIR evaluation, these specific RMZ prescriptions were examined using the best available scientific information.

Note that 170 feet corresponds to a little more than the midpoint of the site index tree height range for redwood for Site Class II lands, which dominate PALCO's ownership. It would in some cases represent less than and in other cases more than the site index tree height for near-stream redwood stands. The target of "100 percent potential protection" is mismatched to the goals of the HCP, as is no "adverse effects on coho production".

Situations where active bank erosion occurs will be identified during timber harvest plan preparation and review and during watershed analysis, for which appropriate prescriptions will be developed.

GP-8

Comments and opinions noted. The Draft HCP/SYP does define size class distributions of tree basal area per acre to be retained. Refer to Table 4 in Volume IV, Part D, Section 1.2.2.2 of the Draft HCP/SYP. This is for the part of the Class I and II RMZs that would be subject to harvest entries. The "no-harvest" bands would provide additional potential LWD recruitment in areas closest to the streams. We do not agree that the number and sizes of trees to be retained would not be sufficient to create and maintain key habitat structures. Also refer to the response to IFR-11, IFR-15 and IFR-17.

GP-9

Comments and opinions noted. Refer to responses to GP-7, GP-8, IFR-11, IFR-15 and IFR-17.

GP-10

See response to DRM-1.

GP-11

The agencies acknowledge that riparian buffer prescriptions under watershed analysis commonly mirror state standard rules. However, this circumstance reflects that riparian standards are fairly well established and relatively protective. With the implementation of AB 1986, however, substantial class I and II buffers would be established as the wildlife agencies would determine final prescriptions. The agencies note that the most useful new information developed by watershed analysis is the identification of previously unknown mass wasting hazard zones. Although final prescriptions may not have years of scientific testing behind them, as noted, they do reflect best professional judgment. Identifying and then avoiding or mitigating with

respect to best professional judgment is an acceptable method of evaluating and reducing landslide hazard risk. Some level of partial cutting or maintenance of substantial understory may likely be an acceptable middle ground to deal with such circumstances.

GP-12

Comments noted. See responses to LMR 9, 11 and 31.

GP-13

The commentor indicates that some of the habitat condition goals set forth in the properly functioning aquatic habitat conditions matrix (Table 7, Volume IV, page 98 of the HCP) are not based upon, and in some cases, contradict the most recent scientific literature. Also, the commentor indicates that the matrix does not identify and take into account critical habitat types that limit freshwater coho production. Specific areas of comment include LWD volume, pool frequency, percent pool habitat and essential habitat.

The commentor indicated that the NMFS matrix (see Appendix K of the EIS/EIR) is more appropriate. The final HCP/SYP will incorporate the NMFS matrix which addresses LWD volume and pool habitat. Discussion on the NMFS matrix can be found in Section 3.8 of the EIS.

Off-channel habitat is identified by the commentor as essential habitat for rearing juvenile salmon. Although no specific measures are identified in the HCP/SYP nor the EIS for off-channel habitat, several mechanisms are available in the prescriptions of the final HCP/SYP for maintaining such habitat. First, no harvest is allowed within the channel migration zone (CMZ). In addition, no new roads (except possible stream crossings) will be allowed in the riparian management zones. This should protect existing and potential new off-channel habitat. Second, "no harvest" zones have been established in the final HCP for all stream classes (i.e., I, II, and III), which provide further protection for any existing or potential off-channel habitat. Third, the CMZ will need to be delineated during watershed analysis or prior to watershed analysis on a THP basis by a qualified fluvial geomorphologist. This will provide a clear definition of where RMZ prescriptions apply (i.e., starting at the edge of the CMZ).

GP-14

The goals presented in Table 7 of the Draft HCP/SYP reflect some but not all of the criteria found in the aquatic properly functioning condition matrix developed by state and federal agencies (presented in Appendix K of the Draft EIS/EIR). Regarding the question "What is the appropriateness of the assumptions made which define the habitat goals…?", the agencies have the role of establishing and periodically reviewing these criteria for properly functioning conditions to continually reflect the best available scientific information. Since the matrix is a "work in progress," the agencies will revise the matrix based on the findings of peer review and by other means. Note that "off-channel rearing habitat," an example of a "critical key habitat element" presented in the comment, is already in the matrix, albeit, the agencies will further define this and other elements. We agree that the monitoring plan will not likely answer the fundamental question as to the appropriateness of the identified goals, at least, not directly. Determining the appropriateness of these goals or criteria will continue to be the responsibility of the agencies, but not necessarily in the context of any given HCP monitoring program.

We agree that monitoring goals should be presented in the form of testable hypotheses. The Final HCP/SYP will include effectiveness and trend monitoring that will test mechanistic hypotheses.

We note the opinion that the goals identified in Table 7 will likely maintain stream conditions in a degraded state and result in significant effects. This opinion is not substantiated, nor are alternative goals presented to address this concern. As such, it cannot be used as a basis for amending the EIS/EIR or the HCP/SYP.

GP-15

We agree that the goals, as presented in the HCP/SYP, in the section pertaining to effectiveness monitoring, can and will be attained. Meeting these goals will be a necessary interim step, but will not necessarily be a sufficient one, for achieving properly functioning conditions. Attainment of these goals alone will not necessarily lead to an increase in coho habitat quality and population levels, but reasonably would be expected to prevent further degradation of coho habitat quality through management-triggered impact mechanisms involving LWD, water temperature, and sediment. Without first meeting these goals, however, increases in coho habitat quality and population levels likely would be precluded. Notwithstanding the goals presented in the HCP/SYP, the overriding goal established by the agencies for all HCPs, is for HCP implementation to achieve over time, properly functioning conditions.

The statement in the Draft HCP/SYP regarding the difficulty with monitoring and distinguishing between management-induced and natural sediment production is not refuted by the referenced methodologies employed by Washington state watershed analysis and Pacific Watershed Associates. Distinguishing between management-induced and natural sediment production, including from landsliding, surface erosion, and other mechanisms, is difficult where sediment rates are high. Nevertheless, we agree that this can be accomplished to the extent that management effects and mechanisms can be quantified and described.

One of the purposes of the follow-up study to occur five years after the baseline study is to gain insights on how management practices trigger landslides and other forms of erosion. Another purpose is to determine whether the rates of management-related landslides change after the HCP measures have been implemented. To detect change, one has to establish a baseline for the period prior to when the HCP is first implemented. Hence, for this purpose, the pre-HCP landslide regime serves as an appropriate baseline. We agree that continuation of current landslide and sediment production rates would result in significant adverse effects on coho.

GP-16

With respect to SYP approval, additional cumulative effects analysis is required by CDF for individual basins for THP approval. See response to comments LMR-33 and LMR-34**.** The Draft EIS/EIR contains additional discussion of cumulative effects which the agencies consider appropriate for evaluation of cumulative effects from the NEPA and CEQA perspective. Please also see responses to GEC-8 and GEC-18.

GP-16

The agencies consider the analysis to be adequate for NEPA and CEQA purposes. CDF, however, considers the cumulative effects analysis in the SYP to be insufficient to meet the needs for individual THP approval. Consequently, cumulative watershed effects will have to be addressed in individual THPs submitted if a SYP is approved, per FPR 1091.1(b). The draft EIS/EIR contains additional discussion of cumulative effects that the agencies consider appropriate for evaluation of cumulative effects from the NEPA and CEQA perspective. See the responses to GEC-8 and GEC-18.

GP-17

The comment regarding the lack of a clear link between science and management under the HCP lacks specificity to support changes to the Draft EIS/EIR and the Draft HCP/SYP. “Science” has been employed to develop the elements of aquatic conservation strategy and the criteria for aquatic properly functioning habitat conditions. Testable mechanistic hypotheses will be included in the monitoring plan, to provide the basis for feedback loops between management regimes and their effects. For further discussion, see the response to GP-14.

The agencies will continue to review and modify these indicators as insights are gained through science. The effectiveness of implementing elements of the aquatic conservation strategy will be monitored and, based on monitoring results, changes to the strategy will be put into effect.

We disagree with the inference that even if scientific information could indicate that management should be altered, clauses in the HCP would prevent this from happening. Especially because agencies will actively participate in the periodic review of monitoring results and in watershed analysis, the best available information will continue to be relied upon. Further, scientific information will likely change management, the extent of such changes would remain within the decision space established by the Final HCP/SYP.

We do not agree that limits on the ability for adaptive management to have an effect on what is implemented will likely result in maintenance of degraded conditions. The commentator does not provide support for this statement.

We agree that if the goals are not being met, the reasons for this would need to be investigated so that management could be changed. We do not agree, however, that there are no direct cause and effect links between resource conditions and management practices, at least not to the extent that reasonable working hypothesis could not be established and "tested" through adaptive management.

During watershed analysis, the best available information will be used to craft prescriptions that will be based on on-going results of monitoring and assessments of conditions in each hydrologic unit. What metrics will be monitored in each hydrologic unit will vary and are not predetermined. Monitoring approaches proposed by PALCO will be reviewed by the agencies and not be implemented until they have received the agencies' approval. Further discussion of how the monitoring program will be developed with agency oversight is presented in the response to CAG-48.

The commentor incorrectly infers that use of new understandings of forest and aquatic ecosystems gained during the life of the HCP will not be allowed to modify the elements of the plan. During the life of the HCP, science will no doubt add to and refine our knowledge of the habitat requirements of aquatic species, impact mechanisms, and mitigations. Agency biologists will employ these insights when reviewing proposals for prescriptions developed during the watershed analysis.

Consultation between PALCO and the agencies will occur in various contexts. If a "changed circumstance" occurs, (described in Volume IV, Part H of the Draft HCP/SYP and in amended for in the Final HCP/SYP, Appendix P) watershed analysis would be initiated to assess the effected area, which would lead to modifications of prescriptions. In the absence of perturbations causing "changed circumstances," PALCO and the agencies would participate in watershed analysis at least once every 5 years. This would provide another context in which prescriptions would be modified or new prescriptions would be developed. In either event, the agencies would be in the role of giving final approval of prescriptions.

HC-1

This comment describes perhaps the most important effect deriving from numerous concerns expressed by the commentors; i.e., that the combined effects and magnitude of the action on old growth and residual habitat imposed upon a remnant population that is believed to be in continued decline would be of a degree sufficient to exceed the statutory criteria for permit issuance. This issue will be addressed in considerable detail in the Biological Opinion prepared by the FWS. In summary, the agencies believe that such claims exaggerate the negative effect of the project, and that serious effects to regional and range-wide populations are unlikely to result. Even applying "worst-case" assumptions that make no adjustment for the relatively low quality of much of the habitat that will be harvested, the project will reduce the amount of marbled murrelet habitat in the southern Humboldt bioregion by less than 30 percent, of Marbled Murrelet

Conservation Zone 4 (MMCZ 4) by less than 5 percent, and of the entire listed range by less than one percent. Using more reasonable assumptions in the estimation of effects, the anticipated impacts will be a fraction of the above. Under the FESA and accompanying regulations, analysis of jeopardy is based on effects to the listed entity across its entire range, while recognizing the influence of effects on designated recovery units. When viewed in that scale, pending the completion of the biological opinion, it seems unlikely that the effect of this project would reach the threshold of an appreciable reduction in the likelihood of survival and recovery of the species.

In particular, this commentor relied on a "domino" projection to conclude that the impacts of the project could lead to loss of the entire southern Humboldt population, the complete loss of the population of Marbled Murrelet Conservation Zone 4, and therefore jeopardy to the survival and recovery of the entire listed range. The agencies do not believe this is a credible scenario, given the relatively low degree of effect and the widespread and thorough protections for habitat on federal lands under the Northwest Forest Plan throughout the listed range. Responses to individual comments that follow will address many of the component issues.

HC-2

Comment noted. As recognized in the draft and final EIS/EIR, there may be short term adverse impacts that are potentially significant. These impacts are expected to be minimized and fully mitigated over the 50-year permit term. In considering PALCO's application for an ITP, CDFG will consider all permit issuance criteria, including whether issuance of the permit will jeopardize the continued existence of the marbled murrelet in California. In accordance with CESA, this determination will be made based on the best scientific evidence and other information that is reasonably available.

Also see response to HC-1

HC-3

The agencies agree that the species may be in continued decline, and that it currently exists at a low level with limited reproductive success. We also agree with the commentor's general statement that the species can probably be sustained through the anticipated population "bottleneck" by adequate reproduction in certain parts of its current habitat. We also agree with the commentor's general suggestion that the population is susceptible to significant impacts during that period. However, because over 90 percent of the best quality habitat and 40 percent of the lower quality habitat in the bioregion will be in reserved status as a result of this action, the agencies do not believe this project will exacerbate the short-term bottleneck. Importantly, the commentor's concern for "the survival and recovery of [the southern Humboldt population]" is not the regulatory criteria for evaluation of the action, and as stated in response to HC-1, a "domino" effect to other parts of the range is unlikely.

HC-4

The commentor provides no reasoned basis for his estimated error rate of 25 percent. The estimate from the Draft HCP and Draft EIS of 17 to 23 percent of loss of nesting habitat was based on provisions that have been modified in the Final HCP, and on the attributed reasonable assumption that about 25 percent of the unsurveyed residual habitat would be occupied. The final HCP incorporates the protection of the Owl Creek MMCA mandated by AB1986 and increases the amount of old-growth and residual habitat in reserves by over 220 acres above the original proposal. Also, in 1998, surveys and stand examinations of portions of the previously unsurveyed residual determined that over one-third of the total unsurveyed residual is unoccupied or unsuitable. Additionally, over 2500 more acres of occupied habitat were documented in Humboldt Redwoods State Park. These changes would reduce the estimate of proportional effects by

increasing the acreage in reserve; and lend credence to our assumption that a minority of the unsurveyed residual is occupied.

HC-5

Regarding residual habitat, see response to KN-2

HC-6

Regarding residual habitat, see response to KN-3

HC-7

Regarding effects outside the HCP area, see response to HC-11

HC-8

The current distribution and population size were described in the Draft HCP and Draft EIS/EIR, and are considered as the baseline for the effects of the action. This subject is also addressed in more detail in the Biological Opinion. The commentor did not describe how the size and distribution of the population should have been further considered. The agencies believe the baseline has been adequately described and considered.

HC-9

See response to KN-15 .2

HC-10

The distribution of the marbled murrelet population in the southern Humboldt bioregion was described in the Draft HCP and Draft EIS/EIR based on detections reported from field surveys. The relative rates of detections provided in the Draft HCP were discussed in the Draft EIS/EIR and considered as corroboration of the agencies' view that occupancy of residual habitat occurs at a much lower level than in large uncut old-growth stands. In the Draft EIS/EIR, various methods of estimating effect assigned equal value to acres of occupied uncut old-growth on PALCO lands and in HRSP. The commentor did not describe how this information should have been further considered, and in the absence of further information, the agencies believe adequate consideration has been given to the subject.

HC-11

Effects of various environmental factors and human influences occurring outside the project area on murrelet populations, including oil spills, gill netting, and El Nino events, were discussed as part of the environmental baseline in the Draft HCP and Draft EIS/EIR. Effects of oil spills and El Nino events are also considered under the changed circumstances section of the final HCP. The commentor did not describe the importance of such effects or how such effects should be further accounted for in the HCP. Since the population effects of these events are not related to breeding habitat loss, no additional measures were deemed necessary by the agencies in response to the comment.

HC-12

Mitigation measures incorporated in the final HCP are intended to minimize and mitigate take to the maximum extent practicable. Certain operations in and near MMCAs will probably continue to be necessary, including those intended to protect other resources, such as storm-proofing roads. Activities with the potential to disturb murrelets will be evaluated in consultation with the agencies to ensure that the

effects to murrelets are minimized, in accordance with the statutory mandate to minimize the impact of take to the maximum extent practicable.

HC-13

The Draft HCP contained the results of population modeling that evaluated the potential impact of habitat removal on populations under various demographic parameters. Because so little is known about actual population parameters, this analysis was based on a wide range of estimates, and consequently, as shown in the record of the Scientific Panel, the conclusions were not strong enough to incorporate into management direction. This problem was fully discussed in the Draft EIS/EIR. It should perhaps be noted here that one conclusion of the modeling effort was that under highly pessimistic population performance parameters, the effects of the proposed timber harvest would be minimal, because the population would already be well below the carrying capacity of the breeding habitat. The commentor does not describe how this issue should be further considered, and the agencies believe consideration has been more than adequate.

HC-14

Regarding impacts on future populations, see response to HC-13

HC-15.1

Regarding the population bottleneck, see response to HC-3

HC-15.2

Regarding residual habitat, see response to KN-2 and KN-3

HC-15.3

The Draft EIS/EIR contended that the Draft HCP was largely consistent with the Recovery Plan, but several commentors have disagreed. In letters to the Fish and Wildlife Service dated November 30, 1998, and December 8, 1998, which are contained in the administrative record, the Recovery Team discussed several aspects of the Draft HCP and made recommendations for improving the plan. Generally, the Recovery Team recognized that the Draft HCP did a good job of retaining high quality habitat, recommended increased habitat retention, expressed concern over the rapid rate at which habitat would be removed, recommended more habitat prioritization and research, and recommended more efforts to reduce take during timber harvest. Notably, the Team expressly recognized that some degree of incidental take would be acceptable under the HCP.

To varying degrees, most of the Recovery Team's recommendations were addressed with increased mitigation in the Final HCP. Most notably, additional contiguous acreage will be added to the Owl Creek and Grizzly Creek MMCAs, take of murrelets in occupied stands authorized for harvest will be minimized by rating, prioritizing, and harvesting most of this habitat outside the breeding season, and increased funds will be made available for research. Additional mitigation related to other recommendations was not accomplished, primarily because the remaining old-growth timber volume available for harvest is not sufficient to meet the economic and logistical constraints of the applicant if the harvest is extended over many years. In this regard, the agencies found it appropriate and necessary to utilize the balancing of wildlife protection and economic interests described in the expressed Congressional intent regarding development of HCPs under the FESA. The agencies believe that the Final HCP is substantially in compliance with the recommendations of the Recovery Plan and the Recovery Team.

HC-15 .4

Regarding the population bottleneck, see response to HC-3. With respect to appreciable reduction, see response to HC-1.

HC-16

Additional specificity has been developed for the monitoring plan in the Final HCP, and amounts of funding have been specified. See Appendix P.

HC-17

The commentor's proposed strategy elements, while more protective of murrelets, would exceed the levels of protection that the agencies believe meet the statutory criteria for permit issuance, and would not provide the balancing of wildlife protection and economic development stated in the Congressional intent regarding development of HCPs under the FESA.

HC-18.1

Regarding consistency with the Recovery Plan, see response to HC-15.3

HC-18.2

The commentor's notion of "maximum extent practicable" mitigation far surpasses that expressed by the applicant in the Draft and Final HCPs, and would not take into account the Congressional goal of accommodating compatible economic development with wildlife protection.

HC-18.3

Regarding residual, see response to KN-2

HC-19.1

Regarding bottleneck, see response to HC-3

HC-19.2

Regarding extirpation, see response to HC-1

HC-19.3

Regarding impacts, see response to HC-1

HC-19.4

Regarding importance of impacts, see response to HC-1

HC-19.5

At the end of the HCP period, existing laws will apply. The option for habitat protection will have been retained for managers in that future time.

HC-19.6

The commentor's suggestion that only small numbers of murrelets will remain in the unharvested reserves, while significant numbers will be lost to harvest, is illogical. All available information suggests that the best habitat is uncut old-growth, and over 4,500 acres of that habitat (90 percent of the uncut old growth on the

property) are being retained through acquisition or 50 year set-asides. Of the known occupied residual on the property, 60 percent is being retained. Of the total residual on the property, 40 percent will be retained. Of the total uncut and residual habitat in the bioregion, less than 30 percent will be removed. The commentor offers no support for his conclusion. For further discussion of the extent of impacts, see response to HC-1.

HC-19.7

Regarding impacts, see response to HC-1

HC-19.8

Regarding mitigation to the maximum extent practicable, see response to HC-18.2

HC-20

Regarding impacts, see response to HC-1

HHW-1

The CDF stream classification system and the Forest Practice Rules based on that classification were the template used to develop the RMZ guidelines in the Draft HCP. This commentor and several others have raised well-supported issues about the efficacy of those rules in conserving populations of aquatic amphibians and reptiles in the forested coastal ecosystems of northwestern California. However, it is not an appropriate role of the agencies to use the environmental analysis process as a platform to challenge State forest regulatory policies. The management prescriptions in the Draft HCP are interim guidance to serve through the first five years of the plan. Longer-term guidance will come through the watershed analysis processes and the aquatic monitoring program.

HHW-2

The Final HCP includes additional riparian zone measures along Class III streams and more stringent mass wasting prevention measures on headwall and inner gorge features, many of which are situated in lower order stream reaches. The levels of protection in Class II and III reaches will be reviewed further in the watershed analysis processes. We also recognize there is considerable variation among individual stream reaches within a class, especially within Classes II and III, and anticipate that prescriptions will become more site-specific through the watershed analysis process.

HHW-3

We have noted this comment, but we also take into account that the adjacent selection-cut bands will ameliorate, to some unknown degree, the edge effects in the no-cut band in stream Classes I and II. Also see the response to GP-7 for a brief discussion of our preliminary estimates of canopy closure in the RMZ selection cutting regimes. In the Final HCP, there are provisions in the aquatic monitoring program for proposing and examining new issues.

HHW-4

Dr. Welsh examined the argument in Diller and Wallace (1996) that southern torrent salamander distribution is limited by stream gradient. He countered the argument with data from five replicates of sediment-impacted and unimpacted streams that showed no relationship between distribution and gradient. He reasoned that low-gradient stream reaches are more vulnerable to sedimentation and that the findings of Diller and Wallace are a consequence of prior land management practices. We have found other support for this view in the literature. Corn and Bury (1989) evaluated southern torrent salamander distributions in

streams adjacent to harvested and unharvested lands in western Oregon and found that distribution was limited by stream gradient only on the harvested streams. Aquatic prescriptions in the Final HCP and the watershed analysis process are intended to provide habitat without limitation as to stream gradient.

HHW-5

We have noted the following:

1. In one test, the search effort required to detect southern torrent salamanders on PALCO lands (Wroble and Waters, 1989) was approximately 14 times greater than that required in Prairie Creek Redwoods State Park (Welsh and Ollivier, unpublished data).

2. The same unpublished data by Welsh and Ollivier contradict the inference by Wroble and Waters (1989) that low detection rates on PALCO lands are attributable to unconsolidated parent geology. Both points will be examined carefully in the watershed analysis process. The aquatic prescriptions in the Final HCP are intended to provide habitat without regard to parent geology.

HHW-6

There is still some uncertainty how the proposed selection cutting regimes in riparian management zones will influence microclimates (e.g., see responses to HHW-3 and GP-7). We agree that population persistence is the most appropriate test of the long-term effectiveness of the proposed conservation measures. The aquatic monitoring program in the Final HCP is designed to entertain and evaluate proposals for new monitoring inquiries.

HHW-7

Please see responses to HHW-2 and HHW-34.

HHW-8

The Final HCP includes revised Class III RMZs (see HHW-2, above); and a more stringent mass wasting strategy to reduce sedimentation in all stream classes. Also see our response to HHW-34.

HHW-9

Please see our responses to HHW-2, 6, 8, and 34. Population and habitat-level considerations for aquatic amphibian and reptiles will figure heavily in the aquatic monitoring program and the watershed analysis process.

HHW-10

We agree. Also see our response to HHW-5.

HHW-11

The agencies currently consider the impacts of the proposed HCP to require Class III riparian buffers in order to be minimized to less than significant.

Please see our responses to HHW-2, 6, 8, and 34.

HHW-12

Comment noted.

HHW-13

See our response to HHW-2 for a discussion on channel protection measures in the Final HCP. Refining and improving the RMZ provisions will be a major focus of the watershed analysis process.

HHW-14

Please see our responses to HHW-2 and HHW-34.

HHW-15

Please see our response to HHW-9.

HHW-15.5

The comment is noted. This issue will be raised again through the watershed analysis processes, which are more site-specific in scope.

HHW-15.6

Please see our response to HHW-15.5, above.

HHW-16

Population-level investigations will be proposed as the aquatic monitoring program is developed. Also see our responses to HHW-2, 6, and 8.

HHW-17

The comment is noted. This issue will be raised again through the watershed analysis processes, which are more site-specific in scope.

HHW-18

See our response to HHW-2 for a discussion on channel protection measures in the Final HCP. Population-level investigations will be proposed as the aquatic monitoring program is developed. Also see our responses to HHW-2, 6, 8, and 34.

HHW-18.5

Population-level investigations will be proposed as the aquatic monitoring program is developed. Also see our responses to HHW-6, 7, 8, and 34.

HHW-19

The comment is noted. This issue will be raised again through the watershed analysis processes, which are more site-specific in scope.

HHW-20

The comment is noted. This issue will be raised again through the watershed analysis processes, which are more site-specific in scope. Also see our responses to HWW-1, 13, 15.5, and 34.

HHW-21

We agree on both major points. (1) The <18.4°C standard is questionable, especially in light of the thermal stress levels of the southern torrent salamander and the tailed frog. Also see the MWAT standards in the

April 29, 1997 document issued by the Deputy Director of CDFFP to Registered Professional Foresters (RPFs) titled "Coho Salmon Considerations for Timber Harvesting Under the California Forest Practice Rules." (2) The method used to compute MWAT is very important and the commentor demonstrates that flawed methods can lead to erroneous inferences about the thermal suitability of stream habitats for salmonids and aquatic amphibians. MWAT computation methods will be closely scrutinized in the aquatic monitoring program.

HHW-22

The agencies and PALCO strove to negotiate an HCP that would meet the needs of LSH-dependent species on the property.

HHW-23

The LSH levels will be closely reviewed in the watershed analysis process.

HHW-24

We are aware that there is a gap in PALCO's seral stage classification: that it does not take into account the lengthy transition from even-aged stands that are relatively young and weakly stratified (including PALCO's late-seral stage), to relatively old, complex, and highly stratified stands that would be considered old-growth. Monitoring efforts and agency considerations in the watershed analysis process will be focused on actual stand attributes.

HHW-25

Please see responses to EPA-5 and EPA-36 through EPA-77.

HHW-26

We agree. In the Final HCP/SYP and in the watershed analysis process, the agencies are incorporating additional monitoring measures for aquatic reptiles and amphibians–both at the habitat level and at the population level. Also see our responses to HWW-6, 7, 8, and 34.

HHW-27

Standards for monitoring tree abundance in RMZs are outlined in the Draft HCP, Volume IV, Part D, pages 33 and 36. Minor revisions of those standards are being considered and may be proposed as the monitoring program is further developed. To date, there are no standards or monitoring provisions for canopy closure. Protocols will be proposed and considered through the aquatic monitoring program. Also see our response to GP-7.

HHW-28

We agree with the importance of "trigger points" for management action. The monitoring elements in the Draft HCP should be considered as being in a draft stage. We received a substantial number of comments proposing new monitoring elements for aquatic amphibians and reptiles, both at the habitat and population levels. Trigger points are discussed in the Final HCP under the subsection titled "Application of Instream Effectiveness Monitoring" in the section titled "Aquatic Species Conservation Program."

HHW-29

We disagree with this assessment of Alternative 1 (No Action/No Project). It appears that this assessment follows from the description of the alternative in the Draft HCP, but does not consider the effects discussion

in the Draft EIS/EIR. What the Draft EIS/EIR makes clearer (see Section 3.7.4.3 and the preceding three tables) is that private forestland managers cannot simply revert to CFPR riparian guidelines if the "No Action" alternative is selected. On April 29, 1997, the Deputy Director of CDFFP issued a document to Registered Professional Foresters (RPFs) titled "Coho Salmon Considerations for Timber Harvesting Under the California Forest Practice Rules." While the guidelines in that document are intended for voluntary use, RPFs are advised that the CFPRs require the Director of CDFFP to disapprove THPs that would result in a "jeopardy" finding or "take" of a State or Federally listed species. Using the guidelines in the April 29 document (in Section 4.2.5, pages 31-34), the authors of the Draft EIS/EIR estimated ranges in RMZ widths for Class I through III streams and presented the results in Figures 3.7-3a-c. Widths ranged from 170 to 340 feet for Class Is, 85 to 170 feet for Class IIs and 50 to 100 feet for Class IIIs. Canopy closure requirements in those RMZs will vary site-specifically according to the maximum weekly average temperature (MWAT). From the standpoint of RMZ treatment, all of the alternatives are more similar than the comment indicates. However, since this is a "no action" alternative, other benefits would be lost; for example, provisions to limit mass wasting, and a program to "storm-proof" existing roads.

HHW-30 to HHW-32

See the response to HHW-29

HHW-33

Comment noted.

HHW-34

The most recent mitigation measures include minimum 30-foot no-cut buffers for Class III RMZs and strengthened provisions to reduce mass wasting, especially in headwall and inner gorge areas. We believe that these measures are a substantial improvement over those shown in the Draft HCP and Draft EIS/EIR. These and other provisions will be scrutinized carefully and refined through the watershed analysis process. Regarding your assessment of this alternative and comparisons between alternatives, please see our response to HHW-29.

HHW-35 to HHW-47

Please see our responses to HHW-34 and HHW-29.

HHW-48

See the response to HHW-1.

HHW-49

The agencies believe that the EIS/EIR presents a reasonable range of alternatives.

HHW-50 and HHW-51

Please see our responses to HHW-1 and HHW-2.

HHW-52

Please see the Draft EIS/EIR, Sections 3.9 and 3.10.

HWC-1

As noted in Chapter 1 of the Draft EIS/EIR (Section 1.3), ITP permits are issued under the Endangered Species Act, not the Northwest Forest Plan. With respect to monitoring, see Section 2.9 of the EIS/EIR.

HWC-2

See response to TAM-5.

HWC-3

The several elements of this comment are responded to as follows:

Item 1. Approximately 1,850 acres of rocked roads are not capable of forest management.

Response 1. Roads and landings can contribute to growing space in that while no stems occur on them, adjacent trees may use the overhead space for their crowns. The instructions for the inventory do not exclude roads or landings from sampling. If the inventory design does not exclude these features then it is statistically appropriate to include them in the forested land base.

Item 2. There are 358 acres of extreme mass wasting potential lands not available for harvest.

Response 2. Please see the response to HWC-9.

Item 3. There are 8,903 acres of very high mass wasting potential lands that must have reduced yield prescriptions. There are 1,782 acres of extreme soil erosion hazard lands that need to have modified prescriptions.

Response 3. Not all constraints are amenable to quantification in a harvest schedule. Some constraints are best handled through implementation due to their spatial nature or because insufficient data exists to accurately depict them in the model. As better data is collected and computer resources improve, these constraints can be quantified in future plans.

Item 4. The Class II watercourses are most probably underestimated (estimate of 10,000 additional acres). USGS maps underestimate Class II watercourses, as a comparison of THPs to USGS maps would show.

It is possible that Class II watercourses could be underestimated, and this would add uncertainty to the overall calculation of LTSY. However, any underestimate of Class II watercourse length would constitute only a small proportion of the overall ownership, and growth within the Class II RMZ can be counted toward LTSY, although the rate would be reduced compared to areas under more intensive management. Therefore, the effect of underestimating or overestimating Class II watercourse length would have only a slight effect on the final LTSY value.

HWC-4

The disturbance index calculation has been modified in the Final HCP/SYP. See Appendix P of the Final EIS/EIR.

HWC-5

An allowable cut effect is possible whenever future yields that were planned do not occur. It can also occur for other reasons such as property combinations where two properties have different stand ages. The effect of allowing only extensive growth projections was examined (see response to HWC-11) and found to cause about a 12 percent difference in LTSY and hence first period harvest. An agreement was made whereby proposed intensive forest management is subject to monitoring by CDF for the first five years of the plan (see Provisions for Monitoring Intensive Management Treatments, volume III, part G).

HWC-6

See response to TAM-4.

HWC-7

The LTSY contribution is mean annual increment (MAI) for even-aged stands. The table on page 45 of part C shows periodic annual increment just before regeneration and is not meant to represent the LTSY contribution.

HWC-8

It is true that there is only one LTSY projection for the selected alternative. The language has been changed to clarify this.

HWC-9

As better spatial data is made available regarding these attributes, it may be possible to incorporate such constraints in a harvest schedule. This depends on the size of the units relative to the resolution of the harvest schedule (minimum mapping unit) and the size of the harvest schedule. Currently, this will be handled as an implementation constraint rather than a strategic constraint. Please see the response to HWC-3.

HWC-10

Please see the response to JLD-5.

HWC-11

The difference between the extensive and intensive yields was estimated by running the harvest schedule both ways while keeping all other variables constant. The harvest schedule with intensive management (the selected alternative) was allowed to chose either extensive or intensive. The difference in the LTSYs , and hence first period harvests, was 11.7 percent. The primary difference was with the clearcut acreage. There was a major shift to longer rotations when intensive management was disallowed.

HWC-12

Please see the response to JDL-5.

HWC-13

Knowing that certain stands were thinned at some point in their life is not generally sufficient to calibrate an individual growth model. The intensive management yield streams were constructed based on assumed initial stand conditions. The attainment of these conditions in the short term will be a better check on the implementation of intensive yield assumptions.

HWC-14

The word “effective” is in reference to the initial stand conditions, not the eventual yield at the end of the rotation. The term annual LTSY is self-explanatory.

IFR-1

The anticipated effects of implementing the measures proposed in the HCP/SYP are discussed in the Final EIS/EIR in sections 3.4 through 3.9. Additional mitigations based on public comment and permit issuance criteria are also discussed in Appendix P of the Final EIS/EIR.

Correct, other anadromous fish species within the plan area are proposed for listing. It is anticipated that the aquatic measures will benefit these species also.

IFR-2

Section 3.8 of the Draft EIS/EIR reviews the condition of salmon populations on the general project area region. The present comment presents no information to support its claim that PALCO's timber operations are single-handedly responsible for the decline of all salmon on the north coast of California. As indicated in section 3.8, there are a wide variety of factors relating to salmon decline, including the condition of aquatic habitat, which are the result of 100 years of timber harvest (see sections 3.6.1.4 and 3.7.4.2). In particular, the comment completely ignores ocean conditions and the effect of drought on salmon populations. In addition, the return of salmon populations to levels that would revitalize the fishing industry in the region are well beyond the reasonably foreseeable future and would be highly speculative. Consequently, they do not require analysis in the Draft EIS/EIR.

IFR-3

See response to CAG-16.

IFR-4

CDF disagrees. According to the Forest Practice Rules, PALCO may cut more than they grow in any given decade. However, they must balance growth and harvest over time (see 14 CCR 913.11(b)), which PALCO does demonstrate in its harvest schedule model. CDF does not understand the reference to a "four year" decade, and therefore has no response.

IFR-5

CDF agrees that old-growth and residual old-growth would be harvested under this HCP/SYP. However, CDF disagrees that "much of this is along streams" and that "riparian old-growth forests" will be "sacrificed". The riparian protection buffers, especially given the additional provisions required under AB 1986, will not allow the liquidation of old-growth in these areas. On the contrary, CDF anticipates that late-seral conditions will increase in riparian areas during the life of the HCP. This is addressed in the EIS/EIR (Section 3-4).

IFR-6

See response to DRM-38.

IFR-7

See response to DRM-38 concerning maximum sideboards for riparian protection.

Based on public comments and permit issuance criteria, Class III watercourses have been afforded additional protection. Specific measures are discussed in the FEIS/EIR Appendix P.

Agency personnel shall review the watershed analysis and shall establish the prescriptions for implementation upon the completion of a watershed analysis. Peer review is required if any Pacific Lumber or agency member of the watershed analysis team disagrees with the prescriptions recommended by the analysis team. Watershed analyses "will subsequently be reviewed and updated as needed so that they remain current for the life of the permit." Modifications to the watershed procedure are subject to the review and approval of the agencies. According to Vol. IV Part D Sec. 4 of the Draft HCP/SYP, "federal and state agencies have the option to participate in the process at any stage." In addition, see response to DRM-45.

IFR-8

Comments noted. The Final HCP/SYP and the Final EIS/EIR provide protection of Class I, II and III watercourses that is in addition to what was presented in the drafts of these documents. Refer to the response to ALA-28, CAG-44 and CAG-55. The comment regarding mass wasting avoidance strategy is also noted; however, it does not present a basis for any changes. Nevertheless, the Final HCP/SYP and the Final EIS/EIR will present modifications to this strategy. Refer to the discussion under the heading Mass Wasting Avoidance Strategy in these documents.

IFR-9

Comments and opinions noted. The buffers described by the FEMAT report are intended to afford full protection of fish and other aquatic species (i.e., avoid direct "take"). The Final HCP/SYP and EIS/EIR assume a level of incidental "take" of coho salmon, but apply buffers that are one component of a comprehensive plan to provide for the long-term survival of coho and their habitat. Refer to the response to ALA-27 and a discussion of the modified buffers in the response to CAG-54. The effectiveness of the proposed buffers with respect to their biological and physical function is discussed in Section 3.7.4.1. of the Draft EIS/EIR. The potential for soil disturbance from timber operations in RMZs is addressed in the response to DJK-11.

IFR-10

Refer to the responses to ALA-28, CAG-44, and CAG-54. With regard to concerns over "shade" along Class III watercourses, refer to the response to CAG-26.

IFR-11

The RMZ widths are based on considerations of watershed input mechanisms to streams that relate to both biological and physical factors and how they interact to affect in-stream conditions. The widths are designed, among other objectives, to ensure an increasing potential for large woody debris inputs, to maintain or reduce water and air temperatures, to maintain stable or improving near- and in-stream habitat structure, to provide inputs of nutrients from riparian vegetation, to provide an effective filter strip to capture sediment transported by overland flow, and to ameliorate the potential effects of landslides. They are also designed in combination with the other components of the aquatic strategy that affect watershed inputs, including those that affect hillslope processes (surface and fluvial erosion, mass wasting, and hillslope hydrology).

The approach for selecting RMZ widths is also consistent with those employed during the development of other HCPs. These precedents help to inform what measures are practicable to provide for long-term survival of aquatic resources and restore ecosystem function to aquatic properly functioning conditions. One of these approaches has been to employ the concept of one site index tree height at age 100 as a starting point for designing buffer widths. This is a known quantity based on published empirical growth and yield tables for commercial coniferous species. During the development of the Draft HCP/SYP and the Draft EIS/EIR, this height was compared to the distances from streams within which the watershed input mechanisms referred to above have been documented in the literature to be the most at play. This comparison and analysis is presented in Volume IV Part D, Section 1.3.1. of the Draft HCP/SYP and in Sections 3.7.4.1, 3.7.4.2, and 3.7.4.3 of the Draft EIS/EIR. While employing the concept of one or more site potential tree heights to design stream-side buffers would likely achieve the goal of maintaining or eventually restoring aquatic properly functioning conditions, it is but one of many approaches to do so. Further, this is unlikely to be the most appropriate one considering the multiple objectives of the HCP/SYP.

Using horizontal distance as a measure of RMZ width is one way to ensure that RMZs can be adjusted for steepness of slope. The Final HCP/SYP and EIS/EIR provide for this adjustment by establishing two RMZ widths for each watercourse classification for two slope classes (i.e., less than 50 percent and greater than 50 percent slope). Not only does this address the interest of adjusting RMZ width for steepness, but it also 1) is consistent with the current practice under the California Forest Practice Rules, to which forestry personnel are trained, and 2) is readily enforceable.

The opinions and assertions expressed regarding the political basis of the forest practice rule stream buffers of various states and the need for one site potential tree height to fully meet all biological functions for stream ecosystems are noted. We agree that for most circumstances, wider RMZs provide greater protection of streams from the effects of landslides and other "upland impacts" than do narrower buffers.

IFR-12

We agree that relatively narrow RMZs are subject to greater "edge effects", including windthrow, than wider buffers. The extent of these effects, however, is influenced not only by buffer width, but also by density of vegetation and the degree of contrast between the buffer and the stands adjacent to the buffer. The Final HCP/SYP and EIS/EIR present RMZ mitigation measures that add to those in the draft documents that address concerns regarding depth-of-edge effects. Refer to the discussion of edge effects in Volume IV Part D, Section 1.3.1. of the Draft HCP/SYP and in Sections 3.7.4.1, 3.7.4.2, and 3.7.4.3 of the Draft EIS/EIR.

IFR-13

Comments and opinions noted. The Final HCP/SYP does not provide coverage for the use of herbicides and pesticides. The restrictions on yarding within RMZs are appropriately flexible given the wide range of conditions under which yarding must occur, as well as the need for safe timber operations. They also address the interest of avoiding ground disturbance where feasible while providing for measures to treat disturbed soil.

IFR-14

Based on public comments and FESA and CESA issuance criteria, additional mitigation measures have been added to the roads component of the Aquatic Species Conservation Plan, Final EIS/EIR, Appendix P. Roads shall be located outside of riparian management zones (RMZ) except for RMZ crossings, which shall be minimized. Also, for all new and reconstructed roads, structures over fish-bearing and restorable fish-bearing streams will be designed to provide for unimpeded fish passage. This could involve the use of bottomless or baffled culverts, bridges, or other such structures. Where culverts are used they will be installed at an appropriate gradient, will be sized to permit passage of a 100-year recurrence interval flood in Class I watercourses, and will contain downstream stormproofing of the stream bed to ensure that they are passable, and to prevent culvert "perching". Fish passage will be ensured by adhering to NMFS guidelines for culvert installation, or by agency review and approval of alternative installation measures.

IFR-15

The interest in providing for a continuing large tree recruitment potential is addressed by the mitigations presented in the Final HCP/SYP and Final EIS/EIR that add to those presented in the drafts of these documents. Eighteen of the largest trees per acre in Class I watercourse RMZs are to be retained at the time of each harvest entry should watershed analysis allow harvest within 30 to 100 feet of the watercourse. This obviates the need to permanently mark trees for retention. Also, the expanded "no-harvest" bands within the Class I, II and III watercourse RMZs provide additional assurances that large trees will be recruited.

IFR-16

The Final HCP/SYP prohibits harvest within the “no-harvest” bands until and unless watershed analysis determines that doing so would be appropriate for the purpose of enhancing riparian function. The biological criteria will be specific to each hydrologic unit subject to watershed analysis.

The Final HCP/SYP will prohibit harvest within the “no harvest” bands until and unless watershed analysis determines that doing so would be appropriate for the purpose of enhancing riparian function. The biological criteria will be specific to each hydrologic unit subject to watershed analysis.

IFR-17

Refer to Section 3.7.4.3 of the Draft EIS/EIR for analysis of large woody debris recruitment. The provision of basal area targets for each size class provides assurances of a well-distributed size class distribution of trees in the managed portion of the RMZs. Also, refer to the response to IFR-15, regarding the concern over large tree retention.

IFR-18

An alternative whose intent apparently is similar to that proposed in this comment (except that the Class I and II watercourse RMZ widths are less than those recommended in the comment) is presented in Section 2.5.4 of the Draft EIS/EIR. This alternative is compared to others in Section 2.6.1 and elsewhere in the same document. Also, refer to the responses to IFR-9 and IFR-11 regarding the use of a site potential tree height and IFR-15 regarding large tree retention.

IFR-19

Monitoring standards are incorporated in the monitoring plan in Appendix P of the Final EIS/EIR. Additionally, watershed analysis will evaluate issues such as those raised in this comment.

IFR-20

Road density is a component of the Disturbance Index and will be addressed as part of the cumulative effects analysis that will be required with each THP. See responses to NADCE-3, ET-12. III-RF-3, and DJK-17.

IFR-21

See responses to LMR-16, CTETAL-6 and DRM-34. Road decommissioning is one type of treatment that may be applied to roads after road inventory and assessment and watershed analysis.

IFR-22

The construction of new roads must meet FPR requirements and those presented in Weaver and Hagans (1994). Measures included in the Final HCP/SYP (see Appendix P) will be included in the Disturbance Index and in the cumulative effects assessment prepared as part of each THP. Also see responses to NADCE-3, ET-12, LMR-12, LMR-15, CAF-5, CAF-7, III-RF-3, DJK-17, LMR-16, and DRM-34.

IFR-23

Current Forest Practice Rules require culvert sizing for 50-year floods (14 CCR 923.4(f)). The Board of Forestry decided that the appropriate trade-off of cost against risk was to require culverts of that size. However, based on public comments and FESA and CESA issuance criteria, the wildlife agencies consider that additional mitigation above that analyzed in the Draft and Final EIS/EIR would be appropriate to reduce the risk of potential adverse effects. The additional measures, one of which is to require culverts sized

on Class I watercourses to pass a 100-year recurrence interval flood, would further reduce the impacts described in the Draft and Final EIS/EIR. Details of this additional mitigation and the associated monitoring plan are presented in Appendix P of the Final EIS/EIR.

With regard to fish passage, the wildlife agencies agree that culverts in Class I watercourse must be sized to ensure fish passage per the Forest Practice Rules (14 CCR 923.3(c)) and the Fish and Game Code (Sections 1601 and 1603).

IFR-24

The NMFS draft "coho salmon take avoidance guidelines" (1997) have not been officially released or published. PALCO's HCP is intended to satisfy incidental take permit issuance criteria, therefore standards will be different than any "take avoidance" guidelines. However, additional mitigation measures for wet weather hauling have been added to the Final EIS/EIR, and PALCO must abide by 14 CCR 923.4. See also response to GEC-38.

IFR-25

No specific impact is identified in this comment, and this issue is not subject to CDF regulation. PALCO will need to comply with existing law, and may be subject to enforcement action if a chemical spill causes a take of a listed species.

IFR-26

CDF agrees that helicopter logging is another method PALCO could use in its operations. However, helicopter logging is not free of its own potentially adverse impacts on the environment, including the effects of prop wash and noise on listed nesting birds such as the northern spotted owl or the marbled murrelet.

IFR-27

See Comment DMR-3.

IFR-28

The aquatic properly functioning condition matrix provides the “performance standards” to which the comment refers. For further discussion, refer to the responses to CT-2, CAG-48, GP-14, and DRM-11.

IFR-29

The intent of establishing TMDL standards presented in this comment is being met by the establishment of the aquatic properly functioning condition matrix (refer to Appendix K of the Draft HCP/SYP) as the HCP/SYP recovery goal for habitat. These will be revised as insights are gained through research. This matrix includes most of the parameters presented in the comment. “Performance standards,” however, for fish populations and “target numbers of wild spawning salmon and minimum escapements” have not been adopted. We agree that these are needed but have yet to be developed. The NMFS is currently developing biological indicators for recovery of salmon stocks.

We agree that the majority of streams on PALCO lands and on other ownerships in the North Coast are water quality limited and no longer support fish populations they did historically. We do not agree that no additional timber operations (which include road building) should occur in water quality-limited watersheds. Doing so would likely act as a disincentive to PALCO to engage in restorations efforts, both on the hillslope, by repairing or abandoning legacy roads, and instream, through habitat restoration. We do agree, however, that the company should refrain from conducting the most impactive timber operations that place aquatic resources at risk until watersheds have recovered to below the threshold defined by the Disturbance Index

approach of the Final HCP/SYP. In addition, the watershed analysis process will identify what management-related impact mechanisms are in play in each hydrologic unit. This information will form the basis for site-specific prescriptions that will achieve property functioning conditions over time.

JB-1

Comment noted; however it lacks sufficient specificity to lead to changes to the HCP/SYP and EIS/EIR. Refer to the responses to IFR-9 and IFR-11.

JB-2

Comment noted. Modifications to RMZ boundaries as a result of watershed analysis are subject to review and approval by the agencies. Additional protective measures for class III streams have been included in the final HCP/SYP. (See Appendix P of the Final EIS/EIR).

JB-3

The cited analysis in the Draft HCP/SYP regarding stream buffers discussed in the FEMAT report and by other authors reflects the opinion of PALCO. The wildlife agencies agree that the finding of Ledwith (1996) and Brofsofske and others (1997) do not refute the findings and analysis of the FEMAT report and work by Chen and others (1991).

JB-4

Comment noted. We agree that the Northwest Forest Plan and the science and analyses that are the underpinnings of its conservation strategies are relevant to north coastal California. We also agree that redwood root mass, as do those of other species (both "sprouting" and "non-sprouting"), exhibit a loss of "soil-binding effectiveness" after the tree is cut. In light of this, the Final EIS/EIR and HCP/SYP provide for "no-cut" buffers along all watercourses to (among other functions) maintain rootmass so as to protect bank stability.

JB-5

Opinions noted. The recovery of endangered species is not <u>solely</u> based on economic considerations. Nevertheless, considering the economic implications of alternative approaches for achieving endangered species recovery and conservation objectives is appropriate. Economic considerations have their role in informing decisionmakers as to what strategies or individual measures are "practicable." We believe that the HCP/SYP will contribute to the long-term survival of coho salmon in northern California.

JBBDS-1

We agree that PALCO's history of Forest Practice Rule violations and recent timber operator's license revocation is cause for considerable concern, and while it does not disqualify the company from receiving an incidental take permit (ITP) under federal or state law (see responses to BRC-1 and BRC-2), it does warrant close monitoring of the company's compliance with the HCP by FWS, NMFS, CDFG ("wildlife agencies") and CDF. Several provisions have been added to the HCP's Implementation Agreement (IA) to strengthen both compliance and effectiveness monitoring by the wildlife agencies. Chief among these provisions is Section 3.4.1, which requires PALCO to fund for the life of the permit an independent on-site monitoring entity ("HCP Monitor") approved by the wildlife agencies to inspect whether the Covered Activities are being carried out in accordance with the provisions of the HCP, and at the agencies' election, to monitor the effectiveness of the HCP's Operating Conservation Program. The HCP monitor is to be given full access to PALCO's land to inspect the Covered Activities and must be present during each timber harvest conducted by PALCO or on the company's behalf by third party contractors. The HCP Monitor is to immediately report

any deviations by PALCO from the requirements of the HCP to designated representatives of the wildlife agencies and CDF so that appropriate enforcement action can be taken.

Section 3.2 of the IA has been modified to clarify PALCO's responsibility and liability under the ITPs for the actions of all of its employees and contractors conducting Covered Activities. The Company is required to conduct an HCP education program for all of its employees and contractors to ensure that they are properly advised of the HCP's requirements. In addition, each contract between PALCO and a third party contractor is required to include provisions requiring the contractor to comply with the federal and state ITPs.

Section 3.3 of the IA requires PALCO to provide an annual budget, approved by its board of directors, which demonstrates sufficient funds to carry out PALCO's commitments for the next fiscal year. This provision has been modified to require PALCO to post security in the amount of $2 million, which approximates the amount necessary to carry out the company's obligations for one year. The security must be renewed annually, adjusted annually for inflation, and immediately replaced by PALCO should the wildlife agencies draw on it as a result of PALCO's failure to fully carry out its HCP obligations. The obligation to post security adequate to carry out PALCO's out-of-pocket costs for each year will ensure that mitigation keeps pace with the company's harvest and other covered activities.

Substantial sanctions are provided under the ESA for violations of a federal ITP. Under Section 11 of the Act, PALCO may be assessed civil penalties of up to $25,000 and criminal penalties of up to $50,000 for each knowing violation of the federal ITP. A criminal conviction would also expose the violator to imprisonment for up to a year. Pursuant to 18 U.S.C. § 3571(b)(5) and (c)(5), respectively, the criminal penalties may be doubled to $100,000 for each violation by an individual and $200,000 for each violation by the company. Significantly, § 3571(d) allows, as an alternative to the above identified monetary fines, the imposition of a fine equal to twice the gross pecuniary gain to the person guilty of the offense. As an example, PALCO could be subjected to fines equal to twice the gross value of each old growth tree harvested in violation of the ITP's terms and conditions. Section 9.1(a)(3) of the IA, which addresses remedies in the event of a permit violation, has been modified to provide that each harvesting of a single merchantable viable tree in violation of the terms and conditions of the ITPs will constitute a separate violation of the permit for purposes of imposing penalties under federal and state law.

In addition, these provisions provide the federal wildlife agencies with powerful enforcement tools to ensure PALCO's compliance with the ITPs and a powerful disincentive to the company to violate the permit.

Additional sanctions for violations of state law are detailed in §9.1(c) of the IA.

JBBDS-2

Comment noted. The wildlife agencies agree that both the provisions of AB 1986 and the minimization and mitigation measures necessary to satisfy the ITP issuance criteria under FESA and CESA must be met in order to go forward with ITP issuance.

JBBDS-3

The HCP has been modified and now requires 100-foot no-harvest buffers on each side of each Class I watercourse until watershed analysis has been completed and prescriptions developed for each watercourse. This change replaces the 30-foot buffer described in the Draft HCP. Final site-specific watershed prescriptions will be determined by the wildlife agencies. The wildlife agencies will implement proposed prescriptions that are unanimously agreed to by PALCO and the NMFS-FWS and CDFG representatives on the watershed analysis team, but PALCO will not be able to veto more stringent measures in favor of other prescriptions.

The Final HCP establishes additional steep slopes protections (50% or greater) on all Class I, II, and III streams, out to the break in slope or to 400 feet, whichever is less. The tree retention requirement has also been modified and must conform with the sizes and quantities described in Table 17 of the Draft HCP. Larger tree size classes (including those larger than 40") can be used for replacement if stated size classes are not present.

JBBDS-4

The HCP has been modified and now requires 30-foot no-harvest buffers on each side of each Class II watercourse until watershed analysis has been completed and prescriptions developed for each watercourse. This change replaces the 10-foot buffer described in the Draft HCP. Refer to the response to JBBDS-3 regarding watershed analysis, the establishment of site-specific prescriptions, additional steep slope protections, and tree retention.

The maximum and minimum no-harvest buffers for Class I and II watercourses have been incorporated into the HCP and are consistent with AB 1986.

JBBDS-5

The Services believe that prescriptions in the Final HCP concerning road-related operations are, on balance, as protective as those described in the February 27, 1998, Pre-permit Application Agreement in Principle.

JBBDS-6

The language in the Draft HCP allowing roads to be constructed within RMZs has been removed from the Final HCP. Roads or landings may be constructed or reconstructed during the wet weather period (October 15-June 1) subject to restrictions that will not result in an increase in turbidity in any drainage facility; construction or reconstruction site; or road surface, any of which drain directly to a Class I, II, or III watercourse. Other restrictions include a prohibition against construction or reconstruction across mass wasting areas of concern (inner gorges; headwall swales; unstable areas; extreme, very high, or high mass wasting hazard areas) and no construction or reconstruction within 170 feet of a Class I or II watercourse or within the Equipment Exclusion Zone of a Class III watercourse.

JBBDS-7

The Final HCP has been modified and prohibits PALCO from constructing or reconstructing roads across mass wasting areas of concern prior to watershed analysis unless PALCO provides a map of the mass wasting areas of concern overlayed by all existing roads, all proposed new construction and reconstruction on a planning watershed scale for a one-year time frame or longer, together with a geologic analysis of the risk of hillslope failure by the proposed new construction and reconstruction. Using this information, the Wildlife Agencies will determine whether all or any of the roads may be constructed or reconstructed. These revisions are more protective than the measures cited in the comment and the January 7,1998, aquatic strategy because they examine effects to a larger planning area over a longer time period (one year).

The Final HCP treats the approximately 50,000 acre area that has not yet been characterized for mass wasting as a mass wasting area of concern.

JBBDS-8

The Final HCP's IA now requires PALCO to submit each THP that includes Covered Lands to NMFS and FWS at least 30 days prior to approval by the California Department of Forestry for review and comment and a finding as to whether the THP is consistent with the HCP and the federal permit. Each THP will also

incorporate all of the conservation and management measures of the HCP's Operating Conservation Program that are relevant to the THP.

JBBDS-9

Comment noted. The final HCP and IA have been modified to ensure their consistency with the provisions of AB 1986. For example, the final HCP and Section 3.1.1 of the IA expressly prohibit timber harvesting, including salvage logging and other activities detrimental to the marbled murrelet within the MMCAs, including the Owl Creek MMCA, for the life of the ITPs, which will each have a 50 year term. The other provisions of AB 1986 have also been incorporated where appropriate in the final HCP and IA. To ensure consistency with the provisions of AB 1986, the IA has been modified by adding a new section § 7.2.4 , which provides that no amendment of the HCP, IA or ITPs may be made to the extent such amendment would conflict with the provisions of AB 1986.

As provided in AB 1986, the wildlife agencies have reviewed the acreages and configuration of the MMCAs to ensure that the figures and depiction of the MMCAs in the final HCP accurately reflect marbled murrelet habitat. After further review and in response to public comment and substantial scientific comment, additional acreage totaling 270 acres has been added to the Owl Creek MMCA and additional acreage totaling 350 acres has been added to the Grizzly Creek Complex to provide greater protection for marbled murrelet habitat within those areas. In contrast to the draft HCP, which allowed PALCO to protect either Owl Creek or the Grizzly Creek Complex as an MMCA, the Owl Creek tract is designated in the IA for protection as an MMCA for the life of the ITPs.

The wildlife agencies and CDF acknowledge that AB 1986 provides for up to $80 million for the public acquisition of the Owl Creek MMCA and up to $20 million towards the purchase of the Grizzly Creek Complex. While such purchases are outside the scope of the HCP, the IA has been modified, consistent with AB 1986, to prohibit timber harvest and other management activities within the Grizzly Creek Complex for a period of five years from the date the ITPs are issued to facilitate acquisition and permanent protection of such lands. At the end of the five year period, if the Grizzly Creek Complex has not been purchased, the FWS and CDFG will reevaluate the importance of the Grizzly Creek Complex to the survival and recovery of the murrelet. If the agencies determine that allowing harvest or other Covered Activities within the tract would appreciably reduce the likelihood of the survival and recovery. If, on the other hand, the agencies conclude allowing the Covered Activities would not result in likely jeopardy to the murrelet, the area will be subject to the same HCP measures as other Covered Lands outside of MMCAs.

JBBDS -10

The provisions of AB 1986 are incorporated into the final HCP and are terms and conditions of the federal and state ITPs, and as such are enforceable as a matter of both state and federal law. A new section 9.1(c) has been added to the IA, which explicitly states that the provisions of 1986 as incorporated into the final HCP are terms and conditions of both the federal and state ITPs and are enforceable under federal and state laws, including the FESA, CESA, and California Business and Professions Code. Further, to address concerns regarding subsequent changes to the HCP that would be inconsistent with AB 1986, a new section 7.2.4 has been added to the IA that prohibits any amendment to the Permits, HCP, IA to the extent such amendment would be in conflict with AB 1986.

JG-1

Thank you for your observations and comments.

JL-1 through JL-17

This species has been removed from the list of covered species in the Final HCP.

JLD-1

No non-vascular plants are on the federal or state endangered species lists.

An ITP is not being sought for the species noted here. The hardwood component of PALCO's landscape is very minor. While clumps of trees are not generally left after timber harvest, except where nest sites are protected, riparian zones will receive substantial protection from the prescribed RMZs.

JLD-2

See response to ALA-114 regarding the No Surprises policy. The policy does not keep PALCO from adopting new science or mitigation. In fact, adaptive management, particularly through periodic watershed analysis, is central to the HCP. Mitigation measures developed through adaptive management within the parameters established under the plan are not subject to the No Surprises rule.

JLD-3

It is unclear what the commentors mean with respect to allowing watershed "rest." Of course, all portions of PL's lands undergo decades with little or no activity as trees grow to a harvestable size. These extended periods of "rest" are interspersed with more focused periods of harvesting activity. Is the request for "rest" for this period of harvest?

Further reference to the Disturbance Index suggests that the comment really questions whether PL is adequately considering the cumulative effect of its harvest in different sub-basins. In the past PL has conducted cumulative effects analysis as part of its THPs. While this has conformed with state law, the company recognized that a more rigorous process could be incorporated into the watershed analysis process included within it HCP. The HCP commits the company to conduct just such analyses.

With respect to the DI having a 10-year calculation cycle, most studies, including the Equivalent Roaded Area methodology developed by the US Forest Service (and that served as the model for much of the DI metric), have found that the majority of sediment-related impacts from logging disappear within a few years after harvest as new, young trees fill the stand. There is much scientific uncertainty over the role of decaying tree roots in reducing slope stability over longer time intervals, although some studies indicate that landslide frequencies can remain elevated for as much as 20 years. To address this concern, the HCP commits PL to utilize a mass wasting avoidance strategy for portions of its landscape that are at high risk of landslide related mass failures.

JLD-4

See response to GEC-38.

JLD-5

CDF disagrees that the planting of Douglas-fir seedlings will be a significant adverse environmental effect. First, CDF is unaware of any unique plant and/or animal assemblages in redwood forests that do not also occur in redwood/Douglas-fir, Douglas-fir/redwood, or Douglas-fir dominated forests, and the comment does not identify any such species. Second, CDF does not agree that the planting of Douglas-fir seedlings will lead to the "conversion" of redwood dominated forests to Douglas-fir dominated ones. There is no indication from the modeling inputs or from the ground practices that a major type conversion from redwood to Douglas-fir is being planned or implemented. The acres of Douglas-fir and redwood type change very little

in the projected 120-year planning period. The volume does shift from about one-third to one-half of the relative standing volume in Douglas-fir. The regeneration assumptions for plantations include redwood stump sprouts and planted redwood and Douglas-fir for redwood sites. There will be an equal number of redwood and Douglas-fir trees planted on both intensively and extensively managed sites. This is consistent with observations made in the field by CDF. Douglas-fir sites are not planted to redwood although existing redwood will sprout.

JLD-6

Comment noted. See responses to comments BRC-1 and BRC-2.

JLD-7

The comment fails to identify specifically what is incomplete, outdated, or misleading, and therefore we can make no useful response. Although the comment does not identify what should be considered as current and accurate data regarding watersheds, the response to comment NADCE-1 may be relevant.

JLD-8

See response to comment IFR-4.

JLD-9

See response to C-48.

JLD-10

Comment noted. See responses to comments GEC-103 and ELF-28.

JLD-11

Extensive and thoughtful comments noted. The northern spotted owl conservation plan was revised; see the Final HCP. Agencies believe that establishment of a minimum population level several times larger than that recommended by the draft Northern Spotted Owl Recovery Plan provides substantial insurance against risk. See responses to comments from ABF.

JLD-12

See response to C-2

JLJ-1

The comment provided information concerning distribution of fish on PALCO lands. The information will be considered in future monitoring, watershed analysis, and THP development. It should be noted that the resource agencies consider all stream classes (i.e., Class I, II, and III streams) to be important to coho salmon and other salmonid species. Therefore, measures and prescriptions were developed for all classes of streams and for riparian and upslope activities. The intent of these measures and prescriptions is to initiate a trend in aquatic, riparian, and upslope habitat that will lead to properly functioning aquatic habitat conditions over the period of the ITP.

JLK-1

See the revised NSO Conservation Plan. The use of the 67 percent baseline no longer applies. Additionally, the establishment of a Scientific Advisory Panel will play a crucial role in recommending habitat retention

standards for maintenance and recruitment of activity sites, and provide potential corrective measures to implement in the event management objectives are not being met.

JLK-2

The agencies propose to establish a scientific advisory panel to assist PALCO in evaluating its monitoring techniques, which includes survey protocols. The revised NSO plan specifies the use of the FWS endorsed or other published, peer reviewed survey protocols to establish the status of NSO sites on the ownership.

JLK-3

The HCP has identified management objectives for the PALCO ownership based upon numbers of activity sites, numbers of pairs and reproductive rate. The wildlife agencies believe that successful maintenance of these management objectives through the life of the permit, will demonstrate maintenance of viability.

See the revised conservation strategy in Final HCP.

JLK-4

Agreed; the citations for Folliard (1993) and Thome (1997) were not listed in the literature cited. This is presumably an oversight by the applicant. Variations in mitigation and monitoring measures have been proposed that specify how the company will maintain habitat for the NSO over the permit period (See Appendix P). The Scientific Advisory Panel will play a crucial role in recommending habitat retention standards for maintenance and recruitment of activity sites, and provide potential corrective measures to implement in the event management objectives are not being met.

JLK-5

The HCP does not state that NSO "prefer to forage in young forests" because of the presence of woodrats in these habitats. Instead, the HCP simply mentions that the Kerns (1989) study revealed an "important role of the early successional species dusky-footed woodrats and brush rabbits as prey species of the NSO." That statement is supported by the data in peer-reviewed literature such as Raphael (1988 and 1987) and Sukai and Noon (1993). Please refer to the discussion of Priority Habitats in the Final EIS/EIR pertaining to the use of younger seral stages and preybase in this portion of northern California.

JLK-6

Agreed. Zabel's study did not address reproductive rates.

JLK-7

It is agreed that further statistically valid data are needed for habitat use and home range sizes in managed land in this portion of the owl's range. This is the intent of establishing both the Scientific Advisory Panel and the research fund, to further our knowledge on quantity and quality of habitats used by owls and better apply management consistent with biological assumptions.

JLK-8

Additional mitigation and monitoring measures assumed to maintain a viable NSO population have been incorporated into the revised NSO Conservation Plan. Comments regarding the percentage reductions of habitat used by spotted owls are valid. While effects upon local populations may seem to be substantial numerically, the minimum population level substantially exceeds the target pair number for this portion of the range established by the Draft Recovery Plan. Taken in the context of FESA, the incidental take estimated to occur on PALCO lands represents a small proportion of the entire population within the range.

This loss is not expected to reduce the likelihood of survival and recovery of the species, and will not jeopardize the continued existence. The words cited by the commentor relating to 'destruction or adverse modification' correctly applied to FESA pertains to effects on designated Critical Habitat. No NSO Critical Habitat occurs within the project area.

JLK-9

Survey methods, as described in the final NSO Conservation Plan, now must be consistent with FWS endorsed survey protocol or other peer reviewed, published survey methodologies (See Appendix P). Additional mitigation and monitoring measures assumed to maintain a viable NSO population have been incorporated into the revised NSO Conservation Plan.

JLK-10

The HCP proposed to maintain a minimum of 10 percent, not 1 percent, of the ownership as late-seral habitats, which crosswalk to CWHR class 5M, 5D, or 6..

JLK-11

Exactly what *is* required for dispersal is one of the poorer understood aspects of this species. It is agreed that juveniles are placed at higher risks of predation when dispersing through habitats with less cover; however, spotted owls are known to successfully disperse through habitats that do not naturally contain high canopy closures (though what proportion of attempts are successful is not known). Acres of young seral types on PALCO lands will increase through the life of the permit and will comprise much of the total forested acreage. FREIGHTs modeling projects the majority of the ownership will consist of mid-seral stands. Late seral and old growth habitats will still be available throughout the ownership, albeit in reduced amounts, as dispersal habitat outside of reserves, RMZs, and MMCAs.

JLK-12

The primary mitigations are summarized in Appendix R. The protection of the Headwaters is likely to benefit the owl but the establishment of this reserve was not considered as a mitigation for the owl.

JNL-1

The assessment of geomorphic sensitivity is described in Part D of Volume II in the Draft HCP/SYP and in the discussion of Alternative II on page 3.6-34 of the EIS/EIR. As described in the EIS/EIR, resolution of the GIS layers for geomorphic sensitivity is about 6 acres. This analysis is intended to generate a landscape-level assessment for planning purposes. Identification of site-specific hazards will still be required as part of the individual THP development and review process.

JNL-2

The FPRs require mitigation of significant adverse impacts resulting from operations in a proposed timber harvesting plan. Impacts that qualify for such mitigation may include contributions to an existing condition; but the FPRs do not require plan submitters to be responsible for recovery from the impacts of past projects. However, recovery of currently impacted resources is a goal of the additional mitigation measures included in the HCP/SYP.

JNL-3

Thank-you for your comments and concerns. The thresholds of significance are primarily based upon the implementation of mitigation measures presented in the HCP which include a mass wasting avoidance strategy, road maintenance and assessment plan, and watershed analysis. Based on public comments and

FESA and CESA issuance criteria, the wildlife agencies have added mitigation appropriate to reduce the risk of potential adverse effects on water quality and aquatic habitat for salmon.

JNL-4

See response to comment JNL-3. In addition to the mitigation measures of the Final HCP, the 1998 CDF inclusion of Freshwater Creek and Elk River on its list of watersheds with cumulative impacts from sediment requires the application of additional mitigation measures to improve the water quality and associated aquatic habitat in these watersheds (see Appendix H, Mitigation Measures for Cumulatively Affected Watershed, of the Final EIS/EIR).

JNL-5

The comment provides no indication of any effects related to Alternative 3 that are not discussed in the Draft EIS/EIR. In addition, Alternative 3 is also identified as the environmentally superior alternative in Section 2.7. Consequently, there is nothing contained within this comment that would require reopening the comment period on the HCP/SYP and associated EIS/EIR.

JNL-6

We disagree with your comment. The Draft and Final EIS/EIR extensively evaluate the protection levels provided to Class II and III watercourses with regard to coho salmon and tailed frog habitat (see Sections 3.7, 3.8, and 3.9). The agencies believe that the proposed riparian buffers (including 30-foot no-cut buffers with varying width selective harvest bands on Class II and Class III streams) provide adequate protection and maintenance of riparian and aquatic function important to tailed frogs and aquatic function to downstream coho salmon. The commentor is not specific about how Class II and III stream buffers are inadequate and therefore the response to the comment cannot be more specific. The reference to comments on “THP-89-717” is not clear. Mitigation measures applied to timber harvest plans approved approximately 10 years ago are not likely to conform with current standards and regulations.

JNL-7

The statement is incorrect. The Draft EIS/EIR evaluates the potential for streambank failures in sections 3.6 and 3.7. Any loss of canopy related to streambank erosion would be very localized and would not have significant adverse effects over a stream reach. The agencies consider that the prescriptions evaluated for Class I and II streams are adequate, even considering minor variations in items such as rip rap along stream channels. In addition, watershed analysis would evaluate whether any such localized conditions merit additional prescriptions.

JNL-8

The comment suggests that chronic turbidity effects on coho salmon are not sufficiently discussed. (It is believed that the comment refers to the Draft EIS/EIR, but this is not clearly stated). Effects of turbidity are evaluated in Section 3.8 of the Final EIS/EIR. In addition, the HCP/SYP will include target conditions that will achieve properly functioning aquatic habitat conditions on PALCO lands. These conditions and the references for their derivation are included in the Final EIS/EIR in Appendix K.

Based on public comments and issuance criteria, the resource agencies consider that additional mitigation would be appropriate to reduce the risk of potential adverse effects. These additional mitigation measures would further reduce the impacts, including those related to turbidity as described in the Draft and Final EIS/EIR. This additional mitigation is summarized in Section 3.4.3.8. Detailed descriptions of the mitigation measures are provided in Appendix P.

JNL-9

See the response to comment JNL-8.

JNL-12

See response to LMR-7.

JNL-10

See response to C-32.

JNL-11

The FREIGHTS model runs appropriately use the landscape as it will appear after harvest of the existing approved THPs. Consequently, the contention of this comment is incorrect. See response to C-32.

JNL-13

Analysis of impacts to this species in the Draft EIS/EIR considered temperature requirements of this species. The comment lacks sufficient specifics concerning site fidelity to warrant changes in the Final EIS/EIR.

KN-1

The commentor is correct that the Draft HCP did not address the issue of residual habitat quality, but the Draft EIS thoroughly discussed the issue, describing several reasonable correlates of habitat quality, namely canopy closure, trees per acre, and volume per acre. While we agree that a precise assessment of the impact of the plan is not possible, we are confident that the best available information has been fully incorporated into a reasoned analysis, and that the conclusions strongly indicate that the great majority of the best habitat will be preserved, along with a substantial fraction of the lower quality habitat.

KN-2

Concerns regarding the agencies' assumptions about the degree of occupancy and the quality of residual habitat are among the most important expressed by commentors. This commentor correctly repeats data from the draft HCP in stating that over 1/4 of the residual under consideration was known to be occupied, and that the remainder had not been adequately surveyed. Since compilation of those data, surveys have added about 200 acres to the occupied category in an area already known to be occupied, and determined over 400 acres to unoccupied, including portions of one of the largest aggregations of residual on the ownership. Also, stand exams by agency representatives have determined that about 1900 acres of unsurveyed residual stands do not contain suitable habitat. While about 4,175 acres of residual remain inadequately surveyed, these findings provide additional corroboration to the agencies' view that much of the residual is unoccupied.

The commentor correctly states that some residual stands have relatively high levels of occupied detections, but as displayed in the Draft EIS/EIR, most of these stands are associated with higher quality uncut old-growth, which is not characteristic of most of the scattered unsurveyed stands proposed for harvest. The agencies do not dispute the commentor's statements to the effect that some residual stands provide some apparent nesting platforms, and that successful nesting has been known to occur in habitats with low numbers of large trees. These facts were not ignored, as the commentor claims, but were clearly recognized in the Draft EIS/EIR. However, these anecdotal comments do not provide evidence countering the agencies' basic assumption: the residual has fewer stems per acre, fewer platforms per acre, and more exposure to predation and the elements, and therefore it is reasonable to expect murrelet densities and reproductive success to be considerably lower in residual habitat, even where occupied behavior has been observed. This

conclusion is supported by the commentor's published statements to the effect that the best habitat is provided by large stands of closed canopy old-growth.

KN-3

The commentor is correct that no data exist regarding nest success in the residual habitat. Lacking such data, the commentor concludes that the habitat is important simply because the birds apparently nest there, bypassing her own published conclusions (cited in the Draft EIS/EIR) on habitat quality, and ignoring available data regarding relative detection rates on the project area.. The data on detection rates, reported in the Draft HCP and summarized in the Draft EIS/EIR, strongly indicate that the occupancy of small stands of old growth and residual proposed for harvest occurs at a very low level relative to the stands of uncut old growth that will be protected in parks and reserves.

KN-4

The commentor incorrectly reports the allowable harvest of occupied habitat in the Elliott State Forest HCP. That HCP allowed the harvest of about 2,500 acres of suitable habitat, including an estimated 700 acres of lower quality occupied habitat. Also, the Washington Department of Natural Resources HCP allowed harvest of an estimated 18,000 to 74,000 acres of potentially suitable habitat, which was expected to contain up to 5 percent of the occupied sites on the ownership.

KN-5.1

Regarding appreciable reduction in the likelihood of survival and recovery, see response to HC-1

KN-5.2

The commentor correctly states that less protection will be provided to murrelets under the HCP than under the existing take prohibitions. However, this may not be true in the long term if continued declines result in unoccupied habitat that could not be protected under take prohibitions. The agencies believe the HCP will provide more benefits in the long term by assuring continued protection of aggregations of the best habitat for recovery.

KN-5.3

The agencies shared the commentor's concern regarding the proposal in the Draft HCP. Consequently, additional mitigation measures were provided in the Final HCP. In all known occupied stands, and in the better quality unsurveyed stands, no harvest will occur during the breeding season. This measure should greatly reduce the likelihood of direct take of eggs, chicks, or adult murrelets.

KN-5.4

Regarding consistency with the Recovery Plan, see response to HC-15.3

KN-5.5

The commentor's statement that continued declines are "a given" with less habitat is not logical. Many wildlife populations have been known to stabilize after declines, at levels reflecting the lower carrying capacity of habitat. The most apparent cause of the decline of the murrelet is the low rate of reproductive success. If that rate were increased, the population could theoretically stabilize. In the terrestrial portion of the species' habitat, the factors believed to be responsible for the low reproductive rate are most obviously present in the residual habitat. This HCP allows the harvest of a portion of that lower quality residual habitat, mitigates that loss by setting aside 90 percent of the higher quality habitat on the property, and provides for the improvement of the habitat in reserves over time. The HCP is designed to provide better

habitat conditions for population stabilization in the future than exist today, while allowing continued economic use of private property.

KN-6.1

Regarding appreciable reduction in likelihood of survival and recovery, see response to HC-1.

KN-6.2

Regarding harvest in the breeding season, see response to KN-5.3.

KN-6.3

The commentor's statements regarding the murrelet's supposed inability to successfully occupy new habitat are contradicted by the situation in one of her own study areas, where forests that were subjected to catastrophic wildfire in the early part of this century are now occupied by murrelets. Most of the residual habitat in MMCAs that is expected to improve in quality is directly adjacent to occupied old-growth; the agencies logically believe it highly likely that this habitat will become occupied. The agencies concur that some displaced murrelets will probably not breed again. This possibility was thoroughly discussed in the Draft EIS. However, we disagree as to the effect of low levels of loss of reproductive effort among this population, especially when viewed on wider scales.

KN-6.4

Regarding appreciable reduction in likelihood of survival and recovery, see response to HC-1

KN-6.5

Regarding consistency with other HCPs, see response to KN-4

KN-6.6

Regarding consistency with the Recovery Plan, see response to HC15.3

KN-7

Regarding residual habitat, see response to KN-2 and KN-3

KN-8

Regarding effects to species and residual habitat, see response to HC-1, HC-4, KN-2, and KN-3

KN-9

When evaluating avoidance of take, the agencies apply the PSG protocol in delineating contiguous stands. In the Draft HCP, several stands were divided to provide both MMCA habitat and timber for harvest subject to the incidental take permit. In the Final HCP, several contiguous stands among those mentioned by the commentor and suggested as a priority in the Recovery Team's letter to the Fish and Wildlife Service of November 30, 1998 (which is contained in the administrative record), were included in MMCAs. Several other stands remain in the original configuration.

KN-10

Survey results were used to evaluate stands for inclusion in the MMCAs, resulting in protection of over 90 percent of the high quality habitat where murrelets are known to be repeatedly observed, along with associated lower quality habitat. The commentor is correct that not all habitat has been surveyed; however,

evaluation of other features such as canopy closure, trees per acre, and proximity to high quality habitat were used to establish a logical system of reserves. The utility of this system was demonstrated by the 1998 stand examinations and surveys, which determined that 2,500 acres of the stands left out of reserve status are unsuitable or unoccupied.

KN-11

Regarding the difference in protection between the take prohibition and the HCP, see response to KN-5.2. The commentor fails to acknowledge the substantial mitigation provided by the 50-year set-aside of over 5,000 acres of high quality uncut old growth and residual habitat, including over 90 per cent of the existing high quality occupied habitat on the property. Almost all of this mitigation acreage is of higher quality than the acreage proposed for harvest. In addition, about 2,500 acres of the stands proposed for harvest have recently been determined to be unsuitable or unoccupied, reducing the effect evaluated in the Draft EIS/EIR.

KN-12

As stated in the Draft EIS/EIR, the management of the Headwaters Forest will be the subject of a future management plan by the Bureau of Land Management. This plan will be subject to review under NEPA and the FESA, and ongoing management will be subject to FESA consultation.

KN-13.1

Regarding reduced protection under HCP, see response to KN-5.2

KN-13.2

Regarding removal of residual habitat, see response to KN-2 and KN-3.

KN-13.3

Regarding adequacy of mitigation, see response to KN-11.

KN-13.4

Regarding population bottleneck, see response to HC-3

KN-13.5

Regarding the desirability of surveys, see response to KN-10

KN-13.6

Regarding the maintenance of contiguous stands, see response to KN-9

KN-13.7

Regarding harvest in breeding season, see response to KN-5.3.

KN-13.8

Regarding phasing harvest, see response to KN-5.3

KN-13.9

The commentor does not state reasons for believing that the permit should be for a period of less than 50 years. While a shorter permit period would provide more flexibility in adapting to new information, it would also provide less certainty for the landowner. PALCO is a private landowner attempting to develop a long-

term forest management program, and their HCP is designed to provide relative certainty in harvest levels over time, while also providing for the long-term survival of covered wildlife species. The agencies believe this plan is sufficiently protective, while complying with the Congressional intent to balance wildlife protection with economic development.

KN-14

The commentor misinterprets statements in the Draft EIS regarding designated critical habitat. Within the boundary of the critical habitat unit, there are about 30,000 acres. However, within that area, only those stands containing the constituent elements (an estimated 9280 acres) are actually designated as critical habitat. Thus we were correct in stating that most of the area does not contain the constituent elements. The table referred to by the commentor has been updated in the Final EIS to reflect the protection of the Owl Creek MMCA by AB 1986 and the subsequent additions to the Owl Creek MMCA. These adjustments reduced the amount anticipated harvest of critical habitat by over 20 percent. The commentor's expressed opinion regarding adverse modification or destruction of critical habitat may fail to recognize the regulatory definition of that term, which is to appreciably reduce the value of critical habitat for survival and recovery. Effects on critical habitat are evaluated in the Biological Opinion.

KN-15.0

The commentor's statement that the HCP is not based on the best available science is not supported. All of her points in this section were addressed in the Draft EIS; and each is further addressed below. Basically, the commentor and the agencies disagree on the extent to which interpretation of these data demonstrate a need for increased protections. See response to comments by Dr. Dennis Murphy (DDM 1 and 2) regarding the application of science in this HCP. We also wish to point out letters in the administrative record that were submitted after the comment period by Dr. Peter Karieva, who recently led a study of HCPs nationwide, and who was a member of the Scientific Panel for this HCP. Dr. Karieva regarded the development of the murrelet strategy in this HCP to be among the best applications of science found in any HCP.

KN-15.1

Regarding fidelity and re-occupation, see response to comment 6.3.

KN-15.2

The commentor correctly states that the analysis by Ralph and Miller (1997) may have statistical inadequacies. The analysis of their data by Stanley (comment AGS-1) attempted to resolve these difficulties, and, subject to explicit assumptions, concluded that the population was declining; but this manuscript has not yet been peer reviewed. The records of the Scientific Panel meetings in the Draft HCP show that the agencies and Scientific Panel did not accept the conclusion that the population was stable during the early negotiations for the HCP, and that consequently the Draft HCP was designed to provide much more habitat than originally proposed. The commentor does not suggest how her conclusion should have been incorporated into the HCP, and the agencies believe the HCP is sufficiently protective.

KN-15.3

The computed Relative Bird Value index was developed by Ralph and Miller and included in the Draft HCP as a means to compare stands. It was based on the reasonable assumption that the frequency of observations per survey effort is indicative of the relative degree of actual use. The method was discussed at length during meetings of the Scientific Panel, and following refinement to include only occupied behaviors, was considered by the Panel to be of considerable value, as is reflected in the record. The commentor provided no

rationale for her summary rejection of the method. While recognizing that potential sources of error may limit the degree to which this analysis can be applied, the agencies regard the RBV as important corroboration of our reasoned assumptions about the relative value of various stands.

KN-15 .4

Regarding residual, see response to KN-2

KN-16.1

The commentor did not state how this information should have been used differently. See response to KN-2 and KN-3 regarding residual habitat.

KN-16.2

Regarding the bottleneck, see response to HC-3

KN -16.3

Because of the physical characteristics of the habitat and the low rate of detections of occupied behavior, the agencies do not believe that the habitat that will be lost is likely to be producing numbers of juveniles sufficient to substantially influence the reproductive rate, especially when viewed in scales larger than the bioregion. This conclusion is possibly borne out by the low number of juveniles apparently being produced in the existing habitat, as reflected in the at-sea data reported in the Draft HCP.

KN-16.4

Regarding harvest during breeding season, see response to KN-5.3

KN-16.5

Regarding population trends, see response to KN-15 .2

KN-16.6

Regarding impacts, see response to KN-1

KN-16.7

The commentor does not describe how potential nest success rates in unentered old growth should have been further incorporated. Based on available information on habitat quality, including work previously published by the commentor, the agencies presumed the reproductive rate in uncut old-growth is higher than in residual habitat. This is reflected in the prioritization of uncut old-growth for reserve status, and resulted in set-aside of 90 percent of the uncut old-growth on the property.

KN-16.8

Regarding effects of oil spills, see response to HC-11

KN-16.9

Regarding other effects outside the HCP area, see response to HC-11

KN-16.10

Cumulative effects of various influences on the marbled murrelets were assumed to be part of the baseline against which potential effects were evaluated, and are described in the final EIS. Such effects are further

evaluated in the Biological Opinion. Any additional loss of murrelet habitat would be subject to the criteria of the FESA and CESA. The commentor does not describe how such effects should be further accounted for. The agencies believe these effects have been adequately considered.

KN-16.11

The commentor correctly states that no analysis of these possible effects was presented. The gravel quarry in the Allen Creek MMCA has been in operation for many years, and mitigation measures are provided in the Final HCP. This quarry is an important local source of material to be used in repair of roads, which is an key measure of the aquatic protection measures of the HCP. Hunting is allowed outside the murrelet breeding season subject to other state laws. The commentor offers no evidence that either activity presents a threat to murrelets.

KN-17

The alternatives provided in the Final HCP represent a reasonable range that could be considered as economically feasible by the applicant.

KN-18.1

Regarding adequacy of mitigation, see response to KN-11

KN-18.2

The table referred to listed mitigations in the Draft HCP. All were designed to minimize and mitigate the effects of taking. Many have been increased in the Final HCP. The commentor provides no specific evidence that the proposed mitigations were insufficient.

KN-19

Regarding residual habitat, see response to KN-2 and KN-3

KN-20.1

Regarding population trend, see response to KN-15.2

KN-20.2

Regarding residual habitat, see response to KN-2 and KN-3

KN-20.3

Regarding impacts, see response to KN-1

KDS-1

We thank you for your detailed comments. We generally concur with you that the quality of life on the North Coast today and for future generations will be dependent upon clean water, air, and soil to sustain the natural systems, wildlife and people. We also generally concur that degraded habitat must be restored. Both CDF regulations as well as PALCO's proposed SYP address these issues. Concern that PALCO's proposed harvest plan would allow the annual harvest of more timber than could re-grow within a single year misses the intent of the SYP, as well as all other sustained yield forestry programs. The objective of the proposed SYP is to define a harvest scheme that ensures long-term sustainability. The intent is not to balance each year's growth with each year's harvest.

We also wish to acknowledge your view that PALCO's proposed HCP would not necessarily prevent further decline and/or listing of the 36 rare and/or protected species addressed in the HCP. Based on public comments and FESA and CESA issuance criteria, the wildlife agencies have added mitigation appropriate to reducing the risk of potential adverse effects of PALCO's proposed plan. Details of this additional mitigation are presented in Appendix P of this Final EIS/EIR.

LJ-1

The EIS/EIR does not evaluate the market value of PALCO's holdings. In addition, please see response to LJ-12.

LJ-2

The indicated quotation does not mean that private companies are not allowed to achieve profits. The PNV maximization is used after all other mitigations are applied and it is reasonable for the company to do so.

LJ-3

The limitations of the WHR classification system are discussed in Section 3.10 of the EIS/EIR.

LJ-4

See response to RN-1.

LJ- 5

Please see responses to comments BRC-1,BRC-2, and ALA-135.

LJ-6

As noted in Chapter 1 of the Draft EIS/EIR, the constraints on PALCO's operations with regard to threatened and endangered species are precisely why PALCO is seeking an incidental take permit under the Endangered Species Act.

LJ-7

The additional lands referred to in this comment do receive NEPA and CEQA analysis in the Draft EIS/EIR. They are evaluated in Section 3.20.1. As noted in that section, these lands would be managed under the same constraints as the other PALCO lands, the lands are within watersheds analyzed in the Draft EIS/EIR, and there are restrictions with respect to issues such as old-growth habitat.

LJ-8

The requirement is to evaluate the effects on water quality (and other resources) with respect to the existing conditions. In addition, see responses to GEC-8, GEC-10, and GEC-18. In addition, with respect to aquatic habitat, the goal is to maintain or achieve a properly functioning aquatic ecosystem (see Section 3.8 of the Draft EIS/EIR).

LJ-9

As noted in the FPRs, sustained yield plans are evaluated for their consistency with the protection of soil, water, air, fish, and wildlife resources (FPR 1091.1 and 1091.4.5).

LJ-10

Please see response to TNL-2.

LJ-11

If PALCO receives an incidental take permit, then it will be in compliance with the Endangered Species Act, because issuance of incidental take permits are a component of the Act. The effects of seed tree removal and shelterwood silvicultural prescriptions are considered in the analyses in the Draft EIS/EIR with respect to vegetation and wildlife (see sections 3.9 and 3.10). The seral stages, and the limitations of its definition within the WHR classification, are also considered within the analyses in the Draft EIS/EIR.

LJ-12

The commentor is incorrect. The Board of Forestry allows a landowner to balance the harvest rate and growth over time as long as they balance by the end of the planning period and as long as the harvest in an individual 10-year period does not exceed the LTSY. The Board of Forestry allows the landowner to determine the rate of harvest as long as it is sustainable as indicated above.

LMR

The Leslie M. Reid comments are detailed and long. Consequently, the responses refer to specific pages and paragraphs of those comments.

Background

Pg. 1, Par. 2 - Issue: Pacific salmon and downstream floodplains evolved under natural conditions and their life-cycle strategies and forms, respectively, reflect the sizes and forms of channels that are adjusted to natural conditions.

Pg. 1, par. 2 – Response: It is agreed that Pacific salmon have evolved in habitats that are adjusted to natural conditions. These conditions have included the impacts of short-term events (such as floods) and long-term shifts in climatic conditions with wide variations in natural flow and channel conditions over both short and long periods of time.

Pg. 1, Par. 4 - Issue: Maintenance of an adverse environmental change at a given level thus constitutes cumulative aggravation of an existing impact: prolonging the duration of an impact is itself a cumulative impact on the affected beneficial uses or resources.

Pg. 1, Par. 4 – Response: The Forest Practice Rules specify that where there are any continuing, significant adverse impacts from past land use activities, the impacts of the proposed project must be mitigated to substantially reduce or avoid significant adverse impacts. For cumulative effects, this is accomplished by mitigating the impacts of the proposed project or by providing mitigation of existing problems that offset the impacts of the proposed project.

Woody Debris

Pg. 2, Par. 1 (a) – Issue: Ketcheson and Froehlich (1978; quoted in Swanson et al 1987) … found that debris flows in logged areas traveled 50% farther, on average, than those in forested areas.

Pg. 2, Par. 1 (a) – Response: The citation of the work by Ketcheson and Froehlich (1978) is incomplete because it does not consider the site conditions and timber harvesting methods on which the study results were based. For example, the original publication by Ketcheson and Froehlich states that half of the failures in undisturbed drainages and 90 percent of the debris flows from clearcut areas originated from slopes with steepness equal to or greater than 80 percent. Since a larger proportion of the measured failures from harvested areas came from steeper slopes, it is likely that debris flows from these areas would, on average, have traveled farther. In addition, the report by Ketcheson and Froehlich is based on both topographic and

harvesting conditions that are not representative of conditions in the proposed HCP/SYP. The majority of harvest areas in the cited report are located on slopes ranging from 70 to greater than 100 percent, the size of inventoried clearcuts averaged greater than 55 acres, which is larger than is allowed under current Forest Practice Rules, and the logging included in the study was conducted prior to 1976 without the watercourse protection measures included in either the Forest Practice Rules and or the additional measures proposed in the HCP/SYP.

Pg. 2, par. 1 (b) – Issue: "When landslides occur, the wood catches much of the sediment before it reaches larger channels".

Pg. 2, par. 1 (b) – Response: DMG notes that wood in channels will only catch "much" of the sediment from landslides if the initial failures are very small (less than10 to 20 cubic yards based on field observations). Larger failures merely shove the debris aside or incorporate it into the slide mass.

Pg. 2, par. 1 (c) – Issue: "Where a landslide triggers a debris flow, abundant woody debris, just downstream of the initiation site may decrease the mobility of the flow and halt the debris before it reaches a larger channel".

Pg. 2, par. 1 (c) – Response: DMG notes that on steep slopes (>60 percent), the wood needs to be within approximately 10 to 20 feet of the initiation site (toe of the failing mass). Relatively small volumes of soil appear to gain tremendous amounts of kinetic energy over short distances and overwhelm large debris easily.

The key appears to be preventing the initial failure. Lee Benda and Keith Mills (Landslides and Forestry conference, Beaverton, OR, 1998) indicate that typical debris flows started small (10 to 100 cubic yards) and picked up 5 to 10 cubic yards of material per linear yard of travel. A 40 cubic yard slide growing to 2,000 to 10,000 cubic yards in the deposition zone was used as an example. Once these failures start, they grow quickly and keep moving until they slow down on the flats, spread and thin out to their shear depth, and de-water.

Pg. 2, par. 2 (a) – Issue: Data on a study in the Knowles Creek watershed of Oregon used to illustrate the ability of debris flows to travel long distances from their source.

Pg. 2, par. 2 (a) – Response: DMG notes that Benda described "migrating organic dams" in Oregon that were observed when flowing water collected enough debris and built up a leaky dam that was pushed downstream much farther than would be expected from standard debris flow runout distances. These dams swept the watercourses of riparian vegetation and continued to grow until the channel width approached 100 feet. At that point, the dam would either leak too much (large surface area) and come to a halt (reach equilibrium between flow in and flow through the dam), or burst, creating a damaging flood of debris-rich water.

Pg. 2, par. 2 (b) – Issue: "Debris flows from logged areas in the Pacific Northwest have killed downstream residents…"

Pg. 2, par. 2 (b) – Response: DMG notes that a presentation made at the Association on Engineering Geologists' 1998 Annual meeting in Seattle showed that the residence in question was built on a flat at a bend in the channel, very close to, or on, the centerline of the flowpath.

Pg. 2, Par. 2 (c) – Issue: Discussion of debris flows in Oregon and statement that "it was a debris flow from a Pacific Lumber Company clearcut that destroyed or damaged much of the town of Stafford during the winter of 1996-97."

Pg. 2, Par. 2 (c) – Response: Examples of debris flows occurring in Oregon can be used to describe debris flow processes, but the cited information about average volumes and distance of travel should not be equated to events occurring on the North Coast of California because of differences in geology, slope steepness, climate, and vegetation. In addition, the debris torrent from the Stafford slide did destroy property located near the channel along which the debris was transported, and preventing such damage is a primary goal of Forest Practice Regulations. However, this landslide did not destroy or damage much of the town of Stafford.

Pg. 2, par. 3 – Issue: "… Debris flows in these larger (Class II) channels generally come to a stop behind log jams...and that, in some cases, the jam forms because the debris has stopped flowing while in others the logs are observed to be wedged behind boulders and standing trees, indicating that the jam itself is likely to have halted the flow." Reid further concludes that large, stable pieces of wood in Class II channels are thus likely to decrease the severity of debris flows and contribute to halting some flows before they reach fish-bearing streams or downstream towns.

Pg. 2, par. 3 – Response: It has been DMG's experience that nearly all debris flows in the HCP/SYP area start in Class III watercourses. Once they reach the Class II watercourses, they are too large to be halted by in-channel debris unless it is really large and plentiful, or there is a sharp drop in the gradient. Logs wedged behind boulders and large trees usually occur only in the deposition zone (large Class II watercourse or Class I), where the debris flow mass is slowing and thinning. Class II watercourses generally serve as transport reaches and are stripped down to bedrock. LWD would have to be tremendous to quickly stop most flows observed by DMG staff, but it is reasonable that they would act as "drag chutes" and slow the mass more quickly than that exiting a "clean" channel.

Pg. 2, Par. 7 – Issue: "Because (1) multiple Class II channels usually drain into a Class I, (2) disruption in any one of those Class II's will affect the downstream Class I, and (3) the likelihood of initiating a disruption in Class II's is greater than that in Class I's because Class II's are closer to the source of debris flows, it might even be argued that protection of the Class II's is more important than protection of the Class I's, as protection of the Class II's to some extent constitutes protection of the Class I's. In any case, it should be evident that in order for Class I's to be protected adequately, Class II channels should be afforded no less protection than Class I's."

Pg. 2, Par. 7 – Response: Class I watercourses are sources of water for domestic use and provide habitat where fish live and reproduce. Protection of these watercourses is intended to: (1) prevent direct inputs of heat, sediment, and other pollutants that can adversely affect beneficial uses, which can be particularly vulnerable during periods of low flow and high summer temperatures; (2) provide channel and bank stability during floods; and (3) prevent sediment transport from adjacent sideslopes. Class II watercourses do not directly support fish or domestic water uses, generally carry much smaller flows during both summer drought and winter floods than the downstream Class I streams, and have smaller zones of riparian influence. In addition, Class I watercourses are often unconfined and have flood plains that interact with riparian vegetation over much wider areas that the typically confined Class II's. Because of the indirect influence on fish and domestic supply, lower magnitude of flood flows, and typically more narrow riparian zones, protection zones around Class II streams can be smaller than Class I protection zones without compromising downstream water quality. It should also be understood that Class II watercourses are conduits for natural, as well as man-induced, debris torrents, and that downstream Class I watercourses have evolved to accommodate periods of both aggradation and subsequent downcutting as a result of such events.

Page 3, Par. 2 – Issue: "Fish and channel form in redwood country evolved in the context of the woody debris regime characteristic of old-growth redwood forests …To the extent that today's stands fall short of

supplying the quantity and quality of wood contributed by original forest conditions, channel habitat and downstream floodplain conditions will fall short of those upon which the downstream beneficial uses depended. The effectiveness of the HCP/SYP in reducing further impacts to Pacific salmon and downstream beneficial uses can thus be assessed, in part, by evaluating the extent to which the plan reproduces the woody debris regime to which the land-use patterns and aquatic ecosystem were adjusted."

Page 3, Par. 2 – Response: The premise that old growth forest habitat is a prerequisite to reducing current impacts on Pacific salmon, on which subsequent modeling and conclusions by Reid are based, is not supported by either the variety of habitats in which these fish are found or the variations in habitat conditions that have occurred over time. Pacific salmon utilize streams with a wide variety of adjacent vegetation types, ranging from shrubs, hardwoods, and different species of conifers that supply the habitat elements required for spawning, rearing, and other life cycle needs. Pacific salmon have also faced many variations of channel conditions during short- and long-term periods of drought, flood, changing climates and forest composition. Old growth redwood forests and associated channel conditions are one, but not the only, vegetation type that provides the necessary habitat elements. Second growth forests can also provide properly functioning habitat for Pacific salmon.

Pg. 3, Par. 3 (a) – Issue: "The influence of HCP/SYP prescriptions on the woody debris regime was evaluated by calculating the difference in woody debris input rates expected from a 300-year-old redwood stand on Site Class 2 land and those expected for Class I and Class II channels under the proposed plan (Figure 1). … Calculation methods are described in Appendix I."

Pg. 3, Par. 3 (a) – Response: Figure 1 displays cumulative wood input to stream versus distance from stream. This is not an expression of woody debris input rates.

The calculations of LWD inputs given in Appendix 1 are based on assumptions of woody debris input proportionate to stand volume (page 31, item no. 4) and height (Page 32, Item No. 6) to derive dimensionless ratios representing differences between managed and unharvested stands. The basis for relating stand volume to total annual input appears to be the statement on page 32, Item No. 5, that "Annual mortality is assumed to be a constant percentage of the total potential input volume per unit area per year (Waring and Schlesinger 1985, p.212 ph.4)." Subsequent steps in the calculation were unclear or could not be replicated from the information provided, but the reported results show very large differences in amounts of LWD between proposed management prescriptions and the unmanaged stand. The results of these calculations are not in agreement with actual patterns of woody debris accumulation in old growth and second growth stands. Measurements of woody debris by O'Connor and Ziemer (1989), Surfleet and Ziemer (1996), and Keppeler (1996, personal communication) in the North Fork of Caspar Creek, where nearly all woody debris was removed as part of the original splash dam logging of old growth, show that woody debris accumulations before and after harvest of the second growth forest are within the range of that found in similarly sized streams in old growth forests (Keller and Tally, 1979). Although making such comparisons are complicated by differing study designs and does not distinguish the character of the materials being measured, it is apparent that substantial amounts of woody debris are accumulated during the development of second growth forests and subsequent to logging under current Forest Practice Rules. The buffer zones and prescriptions contained in the HCP/SYP will ensure the continuation of this process.

Pg. 3, Par. 3 (b) – Issue: "The distribution of wood inputs as a function of distance from a stream was available for second-growth redwood forests in Mendocino County, California (Reid and Hilton 1998; note that this information was available in time for inclusion in the HCP/SYP, as shown by the HCP/SYP's inclusion of other information from the conference at which these data were presented …"

Pg. 3, Par. 3 (b) – Response: It is correct that the cited information was available for use, but was not included in the HCP/SYP. It is also true that Dr. Reid did not include in her analysis of woody debris production (Appendix 1) available information about rates of tree fall in buffer strips and unharvested second growth forest that are also included in Reid and Hilton (1998) or the actual measurements of woody debris production from buffer strips and undisturbed forest following clearcutting of second growth redwood forest that have been reported for the same watershed (O'Connor and Ziemer, 1989; Surfleet and Ziemer, 1996).

Pg. 3, Par. 4 – Issue: "Class III streams are left with no permanent tree cover under the HCP/SYP, so none of the required roles of woody debris will be fulfilled in these streams."

Pg. 3, Par. 4 – Response: The current condition of Class III streams located in second growth stands is a reflection of previous harvesting without protection measures currently required under the FPRs and included in the HCP/SYP, which limit impacts to Class III watercourses from harvesting activities in both time and space. Restrictions on burning and equipment exclusion zones described in the FPRs and HCP/SYP, including restrictions on removal of downed wood and preventing disturbance of the channel and banks will protect existing woody debris in these channels, the roots of new trees and sprouting redwoods will help maintain bank stability, and the new stand will provide additional inputs of woody debris.

Pg. 3, Par. 5 to 6 and Pg. 4, Par. 1 to 2 – Issue: Calculated percentage of woody debris volume for different prescriptions.

Pg. 3, Par. 5 to 6 and Pg. 4, Par. 1 to 2 – Response: The reported woody debris percentages are based on a comparison of hypothetical calculations of woody debris amounts for harvested and old growth forest conditions and on the premise that old growth conditions are necessary baseline for survival of Pacific salmon. This premise is not supported by the variety of habitats in which these fish are found or by variations in habitat conditions that have inevitably occurred over time, as described in the previous response to issues identified on page 3, paragraph 2. In addition, the method for calculating comparative woody debris conditions does not match known patterns of woody debris accumulation from buffer strips before and after harvesting in second growth forests, as described in response to comments on page 3, paragraph 3, above.

Pg. 4, par. 3 (a) – Issue: "… logging has progressed rapidly enough that most areas within 170 feet of stream channels have already been logged. Even if the prescriptions of the HCP/SYP or AB 1986 are fully implemented, woody debris inputs will be severely depressed in volume and caliber until these areas regrow."

Pg. 4, par. 3 (a) – Response: The results of O'Connor and Ziemer (1989), Surfleet and Ziemer (1996), and Keppeler (1996, personal communication) indicate that there is substantial input of woody debris to stream channels from buffer strips before and after logging of second growth redwood stands. Gregory et al (1990 as edited by Murphy, 1995) has found that blowdown in buffer strips accelerates LWD recruitment when compared to unharvested stands. In addition, were it true that woody debris inputs "will be severely depressed in volume and caliber" while waiting for recently harvested areas to regrow, the implied solution of waiting for development of old growth conditions would have little beneficial effect on fish populations during the life of the SYP or HCP.

Pg. 4, par. 3 (b) – Issue: "If the remaining residual trees that are located within falling-distance of a stream continue to be cut, the cumulative impact on woody debris loadings in channels will continue to increase. To prevent this increased impact, it would be necessary to leave the residual trees in place until the buffer strips regrow to the point that they begin to function as required. If this is not done, impacts will continue to

increase for the next 80 years or so as the last remaining sources of functional wood are depleted and while regrowing stands are too small to begin to function appropriately."

Pg. 4, par. 3 (b) – Response: No cut and riparian management zone prescriptions included in the HCP/SYP provide for retention of residual and second growth trees that are within falling distance of Class I and Class II watercourses and will provide a continuing source of functional woody debris to these streams.

Pg. 4, par. 4 – Issue: "The maintenance of woody debris loads at lower than natural levels would decrease the flood storage capacity in small channels by maintaining low roughness in these channels. Flood flows thus would move more quickly into downstream channels and contribute to higher-than-natural flood frequencies."

Pg. 4, par. 4 – Response: Documentation for the magnitude or presence of changes in flood flow frequencies in response to timber operations could not be located.

Pg. 4, par. 5 – Issue: "Lack of any future significant wood input to Class III streams will increase the susceptibility of these sites to gullying as existing wood decays."

Pg. 4, par. 5 – Response: See previous response to Class III woody debris issue on page 3, paragraph 4.

Pg. 4, par. 5 and pg. 5, par. 1 – Issue: "The increased susceptibility to gullying [in Class III watercourses] will occur at the same time that hydrologic alterations on hillslopes … increase peak flows in these channels, also increasing the propensity for gullying. Increased gullying will also increase the efficiency with which water is routed to downstream areas, further increasing the potential for downstream flooding."

Pg. 4, par. 5 and pg. 5, par. 1 – Response: See previous response to increased flooding issue on page 4, paragraph 4.

Pg. 5, par. 2 (a) – Issue a: Reid describes the occurrence of a major debris flow from a logged unit in Bear Creek that obliterated more than 75 habitat improvement structures and indicates that the impact of the debris flow was aggravated by the lack of LWD in the channel when the flow was triggered.

Pg. 5, par. 2 (a) – Response a: DMG notes that the referenced "debris flow" was a debris <u>slide</u>. Velocity appeared to have been relatively <u>low</u>, because there was very little runup observed on the opposite side of the channel and very little debris is left in the channel below the scar. The failure may have begun as a series of inner gorge slides in the channel and propagated upslope as sections of the slope above became unsupported. It did not appear that the whole mass failed all at once. High rainfall rates may have created enough runoff to move the debris through the system and into the mainstem of Bear Creek. The referenced "debris flow" was one of <u>many</u> failures that <u>combined</u> to do the damage. It is not probable that a specific debris flow could have done all the observed damage. The mainstem is approximately 100 to 150 feet wide in places and was well aggraded <u>before</u> the flood. It would be difficult to get enough LWD to roughen such a wide channel.

Pg. 5, par. 2 (b) – Issue: "Increased gullying will also increase sediment inputs to downstream channels, adding to the increased sediment expected from increased debris flow activity."

Pg. 5, par. 2 (b) – Response: Lewis (1998) reported that logging led to an 89 percent increase in the sum of downstream suspended sediment during a 7 year period following harvesting in the North Fork of Caspar Creek. This increase was attributed to increased flows, accompanied by soil disruption and intense burning, that led to erosion of unbuffered stream banks and channel headward expansion. In this case, harvesting was conducted without buffers or equipment exclusion zones along Class III watercourses, but gullying and erosion from logged areas was not noted as a major sediment contributor. In addition, little or no evidence of adverse sediment impacts on stream macroinvertebrates, leaf decay rates, or algae were detected as a result

of changes in sediment production (Bottorff and Knight, 1996). The use of equipment limitation zones, as is now required by the FPRs and in the HCP/SYP, and the HCP/SYP restrictions on harvesting in headwall areas will greatly decrease the potential for gully erosion, headward expansion, or other inputs of sediment into Class III watercourses.

Pg. 5, par. 3 – Issue: "… the evaluation of source distances is flawed because the height of the trees contributing wood is not adequately considered. It should have been obvious, for example, that 300-foot-tall redwoods would contribute wood from greater distances than the 170-foot trees assumed in the HCP/SYP's Figure 1, p.IV-D-56. The conditions that must be used for comparison are those that had proved to be adequate to sustain aquatic ecosystems – the Pre-management conditions.

Pg. 5, par. 3 – Response: See previous response to issue of pre-management conditions on page 3, paragraph 2.

Pg. 5, par. 4 – Issue: "In northwest California, stream channels commonly flow through steep-walled "inner gorges," and data from second-growth redwood forest at Caspar Creek, Mendocino County, California, indicate that trees characteristically fall downhill on these slopes (Reid and Hilton 1998). … the modeling work of McDade et al (1990) and Van Sickle and Gregory (1990) assumes a random orientation of tree falls, which is clearly not the case at Caspar Creek; their results do not appear to be applicable where streams are adjacent to steep slopes.

Pg. 5, par. 4 – Response: Inspection of the modeled and measured curves reported by McDade et al (1990, Figure 4) for distance from stream bank vs. cumulative percent of debris pieces plainly shows that the modeled curves consistently under-predict the measured percent of debris pieces originating within a given distance of the stream. Therefore, differences between the measurements of McDade et al (1990) and Reid and Hilton (1998) are even greater than is indicated by the modeled values, and these differences are more likely to be the result of differences in site conditions and measurement methods than the choice of model assumptions about tree fall direction.

Pg. 5, par. 5 – Issue: "When results are recalculated using a more appropriate characterization of pre-management conditions and using measured distributions of debris sources in a redwood forest in northwest California, the HCP/SYP's predictions of woody debris input rate, in terms of volume of debris are found to be in error by 210% and 265% for Class I and Class II streams, respectively."

Pg. 5, par. 5 – Response: Reid does not provide a citation for "…measured distribution of debris sources …", so there is no opportunity for evaluating this comparison with the HCP/SYP mitigations. See previous response to requirement for pre-management conditions on page 3, paragraph 2, which appears to be the basis for the "error" in the "HCP/SYP's predictions."

Pg. 5, par. 6 and pg. 6, par. 1 – Issue: "In order to bring buffer strip widths into compliance with the design goals described in IV-D-58 ph.6 ("PL's riparian buffers are expected to provide 79.8 and 55.6 percent of the total LWD recruitment expected in unmanaged forests in Class I and Class II streams, respectively") it is clear no-cut buffers would need to be widened. The levels of loading described in IV-D-58 ph.6 were considered necessary by PL and NMFS in preparation of the plan, and they are the levels upon which the assumptions of the HCP/SYP are based.

Pg. 5, par. 6 and pg. 6, par. 1 – Response: The percentage LWD recruitment cited on page IV-E-58 par. 6 of the HCP/SYP are not "design goals." Rather, they are the levels expected to be provided by the proposed buffer and riparian management zones described in the HCP/SYP based on cited research results. As described in the previous response for page 5, paragraph 4, the modeled and measured curves reported by McDade et al (1990, Figure 4) indicates that the modeled curves consistently under-predict the measured

percent of debris pieces originating within a given distance of the stream. Use of these curves is a reasonable and conservative means of determining expected levels of future woody debris recruitment.

Pg. 6, par. 2 (a) – Issue: It is suggested that .."A strategy that maintains the stability of the headwall swales by leaving root strength intact is also likely to provide a source of woody debris".

Pg. 6, par. 2 (a) – Response: DMG notes that Martin et al (1996) show no statistically significant increase in slope stability with regard to "headwall leave" areas due to windthrow in these areas. Studies by Pyles and Skaugset (1997) also show no differences between the stability of forested, clear cut, and headwall leave areas. However, slopes with trees in the 10 to 100 year old range had a much lower debris slide rate than slopes with 100+ year old trees. This is based on statistical analysis of the Oregon landslide studies after the 1995-96 and 1996-97 storms. If the intent is to increase LWD in the channels below the headwall swales, then leaving trees on the slopes could serve this purpose.

Pg. 6, par. 2 (b) – Issue: "… it is clear that if the level of significant cumulative impacts is not to be increased in the affected areas, some provisions will need to be made for maintenance of a supply of stable (i.e. large diameter) woody debris in Class III streams."

Pg. 6, par. 2 (b) – Response: Timber management has been an on-going activity within the HCP/SYP area for over 100 years. It is highly unlikely that the application of additional mitigation measures as required by the HCP/SYP to provide greater retention of streamside trees would shift the balance between recovery from prior impacts, recent harvesting, and current operations toward increased cumulative impacts. Class III LWD functions are addressed in the response to issues on page 3, paragraph 4.

Water

Pg. 6, par. 5 (a) – Issue: "Data from a variety of locations indicate that forests capture and evaporate 20% to 30% of the total storm rainfall during large storms in areas with storm season climates similar to those of Eureka, California. Measurements of interception loss in a redwood forest on land owned by PALCO in Freshwater watershed (Rains 1971) indicate that local rates of interception loss are similar to those measured elsewhere."

Pg. 6, par. 5 (a) – Response: The interception losses reported by Reid are likely to occur only for smaller storms that do not produce large runoff events. Rains' (1971) thesis (see Figure 5 in Reid's report) only includes data for storm events up to 1.5 inches in the second-growth redwood/Douglas-fir forest found in the Freshwater Creek basin. Reid did not cite Rothacher's (1963) study in the H.J. Andrews Experimental Forest in western Oregon for old-growth Douglas-fir. The study site for winter precipitation data was 1,500 feet, indicating that nearly all the precipitation fell as rainfall. Similar to Freshwater Creek, climate is maritime with dry warm summers and wet, mild winters. Annual precipitation averages 92 inches at 1,500 feet at the H.J. Andrews, while precipitation averages approximately 60 inches at Kneeland. Rothacher's regression equation for summer storms of 1.5 inches predicts an interception loss of 20 percent, approximating the estimate produced from Rains (1971) study. For large winter storms, however, Rothacher's results differ considerably. Rothacher found that an average of 86.3 percent of total winter precipitation was throughfall, and interception loss averaged 13.7 percent. For larger storm events, the percentage of interception loss was lower: 2-4 inches—11.6 percent, 4-6 inches—7.10 percent, 6-8 inches—11.6 percent, and 8+ inches—4.3 percent. Rothacher concluded that volumes of water discharged from forested watersheds during heavy winter storms can nearly equal gross precipitation.

An interception loss study has been recently initiated in the North Fork Caspar Creek watershed in a second-growth redwood/Douglas-fir forest. Preliminary data analysis for four storm events has been completed by Jack Lewis, USFS PSW Arcata. An interception loss of 16.8 percent was documented for a

storm event that produced 3.34 inches in a clearcut opening, while three smaller storms—each of which was approximately one inch, produced interception losses of approximately 21.4 percent, 23.7 percent, and 24.8 percent. It appears that the amount of interception depended on the intensity of the rainfall. The average interception loss for these smaller three storms was approximately 23.3 percent. This preliminary data suggests that interception loss is somewhat higher in a second-growth redwood/Douglas-fir forest compared to that which occurs in an old-growth Douglas-fir forest, but follows a similar pattern of decreasing proportionate loss with increasing storm size. Ziemer (per. communication) suggested that a possible reason for differences in interception loss between the H.J. Andrews Experimental Forest and Caspar Creek may be the amount of advected energy available to evaporate moisture for the forest canopy. Mean December temperature at the Andrews is 37° F (Rothacher et al. 1967), while it is 44° F at Caspar Creek (Henry 1998).

Satterlund (1972) states that the significance of rainfall and snow interception studies has been questioned on many grounds. These include: (1) the accuracy of measurement for many of the older studies, and (2) questions regarding whether sufficient energy is available to account for rapid and large interception losses. In essence, since energy that is used in evaporating intercepted water is not available for transpiration or direct evaporation from the soil, losses due to interception may be partially offset by reductions in transpiration and direct evaporation. This would actually be the "net interception loss," or the portion of the rainfall retained on the aerial portion of the vegetation that has no effect on the soil water consumption of the plant. For example, Froehlich (1979) assumed that 60 percent of the interception falling at the H.J. Andrews Experimental Forest in western Oregon is actually lost.

At Kneeland, the mean annual maximum daily precipitation amount is 4.19 inches. Six events greater than or equal to 7.0 inches have occurred since 1970. Therefore, the precipitation events that have caused large peak discharge levels in Freshwater Creek have been from storm events that are beyond the range of interception data provided by Rains (1971), and closer to the preliminary data collected for Caspar Creek. It is likely, therefore, that interception losses similar to those preliminarily reported by Lewis are probable for these larger storm events. That is, interception amount for the average annual maximum storm should not be higher than 16.8 percent, and should decrease with increasing storm size.

Pg. 6, par. 5 (b) – Issue: Dr. Reid states that Caspar Creek data shows that clearcutting second-growth redwoods in coastal California has resulted in an average increase of 27 percent in flood peaks in clearcut watersheds, and that the effect in larger watersheds varies linearly with the proportion of the forest cover removed in the watershed. Dr. Reid also states that the magnitude of the change in peakflow measured at Caspar Creek approximately equals the magnitude of the expected interception loss during large storms.

Pg. 6, par. 5 (b) – Response: Ziemer (1998) states that the 27 percent increase in peak flows for clearcut basins are for discharges expected approximately once every 2 years. For the entire gauged portion of the North Fork of Caspar Creek, the 2-year peak in the 50 percent clearcut basin was increased by 9% after logging. He mentions that stream discharge events that are expected to occur annually or every 2 years are normal high flow events, and are not generally considered to be floods. Ziemer (1998) reported that peak flow response to logging is related to a reduction in vegetative cover, which in turn reduces evapotranspiration, interception, and fog interception. Seasonal patterns in the departures from the predicted peaks were evident in most of the treated watersheds (i.e., largest departures generally occurred early in the season), indicating that evapotranspirational differences were important for explaining the relative sizes of peak flow increases. Additionally, evapotranspiration may be an important process throughout the winter period. Keppeler et al. (1994) studied changes in soil water moisture and pore pressures after harvesting in the North Fork of Caspar Creek and found that predicted peak piezometric levels were up to 35 percent above pre-logging levels. They concluded that evapotranspiration was an important process, since low-level winter evapotranspiration is possible in redwood/Douglas-fir forests.

When storms are relatively infrequent, it is likely that forested areas have considerably drier soil at the start of a rainfall event. During the life of their study, conditions favored the development of inter-storm moisture deficits in the forested control swale.

Evapotranspiration alone, however, is not the only factor explaining differences in soil moisture levels following logging. Ziemer (1998) concluded that differences in interception between logged and unlogged areas probably explain most of the increases in the larger peaks (that is when differences in soil moisture due to evapotranspiration are minor). The magnitude of interception loss, however, depends on how precipitation occurs. For example, 8 inches of precipitation in 24 hours would likely result in little interception loss, while 8 inches over 3 to 5 days with several dry periods could have considerably higher interception losses (Ziemer, per. communication). Hewlett and Nutter (1969) reported that the magnitude of interception loss depends on the number and length of drying periods between storms; a drying period of at least 4 hours is usually required to separate successive rain storms. If we assume that 16.8 percent of incoming precipitation or less will be lost as interception based on preliminary Caspar Creek results, it is clear that peak flow increases of approximately 30 percent for the clearcut basins cannot be explained by interception alone.

Pg. 7, par. 6 – Issue: Dr. Reid states that the extent of the hydrologic impact caused by a logging strategy depends strongly on the proportion of a watershed's forests present in an immature hydrologic condition at any given time. The HCP/SYP provides for a near-term continuation of the rates of cut established over the past several years, and this allows calculation of the hydrologic changes that will be associated with implementation of the plan due to alteration in rates of foliage interception of storm rainfall.

Pg. 7, par. 6 – Response: As stated above, it is likely that interception loss alone are not great enough to explain all of the observed differences in peak flows from second-growth redwood/Douglas-fir forests. Additionally, the WA DNR (1997) Watershed Analysis Manual states that current hydrologic maturity is important so that the analyst can overlay hydrologically immature forest on areas with a high potential for rain-on-snow. It is these areas that are thought to be possible for enhancement of peak flows, since the WA DNR Hydrology Module states that the major effect of forest practices on peak flows operates through changes in winter snow accumulation and melt rates during rain-on-snow events.

Ziemer (per. communication) believes that in the Kneeland area, snow depths generally do not exceed one foot and can be expected to have 20 to 25 percent density, or a water equivalent of 3 to 4 inches. While this area is in the transient rain-on-snow zone, a snowpack can be expected to last at most one week before it totally melts or is melted with a frontal system. It is likely that clearcutting does not significantly impact the amount of runoff occurring in this type of environment due to changes in snow accumulation because, as the literature suggests, openings created in the forest canopy have greater snowpacks than uncut areas where the snow accumulates over several storms. This would not be expected to occur in the areas being harvested in upper Freshwater Creek. Therefore, one would not expect a great deal of additional snow accumulation in openings created in this portion of the transient rain-on-snow zone, and there would not be additional runoff associated with timber management that could adversely impact channel conditions (Ziemer, per. communication).

Pg. 8, par. 4 – Issue: Reid indicates that landslide incidence has been shown to be associated with the size of storms in certain areas.

Pg. 8, par. 4 – Response: While this is generally true, it should be noted that the size of a storm alone is not the only component that affects landslide activity. Antecedent conditions, i.e., the amount of moisture already stored in the soil due to previous storm history, also greatly affects the landslide frequency during a given storm (Cafferata and Spittler 1998). With very wet antecedent conditions, a relatively smaller storm

can generate landslides. Reid does not mention this component, and without taking it into account, data from other studies can be misinterpreted, and can be erroneously applied.

Pg. 8, par. 5 – Issue: Dr. Reid states that total seasonal foliage interception loss is higher than that measured for individual major storms. Results of the studies cited above suggest that 20 percent to 50 percent of the total annual precipitation is captured and evaporated by forest foliage.

Pg. 8, par. 5 – Response: Annual gross interception loss for a typical hydrologic year at the H.J. Andrews Experimental Forest in western Oregon was estimated to be approximately 11 percent, based on techniques presented by Froehlich (1979). Since the climate for the Andrews Experimental Forest is roughly similar but slightly cooler when compared to the Freshwater Creek watershed, estimated annual interception loss would be somewhat higher, but less than 20 to 50 percent. In addition, as previously described, interception losses become proportionately smaller as individual storm size increases, and are therefore less significant for the larger storms that are most likely to produce high peak flows and flooding.

Pg. 9, par. 2 and 3 – Issue: Reid states that sediment from tributaries in which flood peaks are most affected will be moved downstream to where flood peaks are less affected, thus contributing to aggradation of the downstream reaches important to salmonids (page 9, second paragraph). In the next paragraph she states that the depth of scour of bedload in a channel increases with the size of the flow, and if "peak flows increase over natural conditions, redds will be destroyed and coho salmon alevins (newly hatched salmon which still reside in the gravel) killed more frequently than under pre-management conditions".

Pg. 9, par. 2 and 3 – Response: It appears that there are two contradictory processes described as occurring on the same stream reach during the same time interval, as a result of increased logging. Normally, in response to sediment and water inputs, a stream reach will either aggrade or scour for a period of time, but not both at the same time.

Pg. 9, par. 8 – Issue: The document states that because the overall pattern of logging established over the past decade will not change with the HCP/SYP, and because provisions described by the HCP/SYP for assessing and managing cumulative watershed impacts do not address hydrologic change or flooding, the trends of increasing cumulative impacts due to silviculturally related hydrologic change will continue.

Pg. 9, par. 8 – Response: In modeling cumulative watershed effects, Ziemer et al. (1991) did not model any logging related streamflow increases, based on research conducted in the Caspar Creek watershed. Ziemer (1998) found that the most recent Caspar Creek results are consistent with past studies conducted throughout the Pacific Northwest: peak flows are increased the most following logging in the fall months with the driest antecedent conditions and in the smallest drainages. He concluded that the effect of logging on stormflow response to be relatively benign. The resulting changes in streamflow did not appear to have substantially modified channel morphology. Botkin et al (1994) found that "Increases in flood peaks [from logging] would be expected to cause a slight increase in channel mobility and morphology and an increase in the transport of bed sediment, but so far we are not aware of any field studies that have related changes in flooding to degradation of fish habitat."

Pg. 10, par. 2 – Issue: Dr. Reid reports that harvesting rates from the 1960s through the early 1980s in the Freshwater Creek and Elk River watersheds provided a flood regime that was not considered a nuisance by downstream residents.

Pg. 10, par. 2 – Response: The U.S. Army Corps of Engineers (Corps) (1975) report for Freshwater Creek states that flooding occurring in this basin in December 1955, December 1964, and March 1972. The March 1972 flood event was described as "about equal to a 100-year event." The report states that the flood plain was inundated by the 1955 and 1964 floods, and identifies the 100-year flood plain. The report concludes

that about 4,000 acres are subject to flooding upon occurrence of a discharge event of the intermediate regional magnitude (100-year flood). Since the Freshwater Creek drainage area is only about 34 square miles (21,760 acres) above its confluence with Ryan Slough, this is nearly one-fifth of the watershed. Even by 1975, most of the development in the Freshwater Creek basin was located within the flood plain, and it is likely that in the two decades since the Corps' report was written, much of the additional development has been in the floodplain. To properly determine the "level of nuisance" to downstream residents in the late 1990s, compared to the 1960s and 1970s, would require that the amount of additional development in the 4,000 acre flood plain described by the Corps be carefully considered.

Pg. 10, last par. – Issue: "The strength of the hillslope materials, as buttressed and reinforced by intertwining old-growth forest roots, was sufficient to keep the soil and bedrock in place during all but the largest storms".

Pg. 10, last par. – Response: It should not be concluded by someone reading this document that only old growth trees in an unmanaged environment can hold soil and bedrock in place during all but the largest of storms. Vigorously growing second-growth trees, with healthy root systems can provide similar, and in some cases better (where old growth is decadent, dying, or heavily leaning) root strength to slopes. A continuous cover of trees is not necessary to provide sufficient root strength to prevent landslides in most locations, either. Since the 1960s, researchers have been searching for correlations between timber harvest and occurrence of landslides. At this point in time, published literature can only document a correlation between landsliding and clearcuts on steep slopes. One researcher with the USFS has documented that retention of as little as 11 percent of the trees on a slope no longer resulted in a statistically measured increase in landslide activity following timber harvesting. That is not to say that retention of 11 percent of the trees on slopes on PALCO land will prevent an increase in landslide occurrence above the uncut condition, but it serves to illustrate that a total tree cover is not always required to provide sufficient root strength to prevent and increase in landslide occurrence.

Sediment

Pg. 11, par. 3 – Issue: "The overall effect of these influences is a general increase in landsliding rate in areas managed for timber, and Sidle et al. (1985) document as much as a 41-fold increase in landslide frequency after clearcutting and a 346-fold increase after road building."

Pg. 11, par. 3 – Response: Tables 10a and 10b on pages 82 and 83 of Sidle (1985, attached), which reference the numbers cited by Reid, is a compilation of the results of 15 studies. In Table 10a, the "management effects relative to undisturbed land" column, under "clearcuts" shows various rates of increase for the various studies. One study in New Zealand shows a 40.4 X increase for sandstone substrate, and an 11.8 X increase for gravel substrate, however the other eight studies (one did not compare clearcuts) have values ranging from 0 (no difference from managed land) to 8.7 X increase, with an average of 3.25 X increase. The other eight studies were done in the Pacific Northwest, rather than New Zealand, and none were done in California. Table 10b in Sidle et al (1985) compares effects of individual <u>major storms</u> on soil mass movement in five different studies. One study in British Columbia shows a 41x increase in soil mass movement from a major storm in clearcut areas. However, similar studies in Oregon show 0.96x and 9.4x increases respectively. The two southern California studies represented in Table 10b were for brush lands converted to grass. These showed 7.4x and 2.8x increases in mass movement from major storms. The value of 41 used by Reid is not indicative of the results of the vast majority of scientific studies on the subject, nor is there any indication that the results of this one British Columbia study, which followed a major storm, are applicable to California. Likewise, the value of 346-fold increase from roads is the highest value in the table and does not represent the average effect of road building on slope stability in the studies referenced by Sidle et al (1985).

Further review of Tables 10a and 10b in Sidle et al (1985) shows that Reid has selectively cited the highest values from different tables describing two types of impact (long term and individual storm) without providing the context of results from the other listed results that are relevant to conditions in the HCP/SYP area. From Table 10a, in Sidle et al (1985) covering "Landslide Inventories Over Relatively Long Time Periods", the range of observed increases in sediment production from clearcuts compared to undisturbed lands is 0 to 8.7 times for the eight studies conducted in Pacific Coast forests, with an average of 3.3; and for the seven of these studies reporting on roads, the increase ranges from 26 to 168 times, with an average of 113. Table 10b, relating the "Effects of Major Storms on Soil Mass Movement" shows clearcut area increases of 1 to 41 fold, with an average of 17 for three Pacific Coast forests; and road increases of 46 to 212 times, with an average of 106, for the same three studies. All of these studies were conducted in the period from 1967 through 1983, under a wide variety of topographic conditions and using management methods that were not constrained by the mitigation measures imposed by the current Forest Practice Rules and in the HCP/SYP.

Page 11, par. 4 and par. 5 – Issue: "'In 1996/97, over thirty years after the 1964 storm, approximately 37 percent of the Bear Creek watershed was in a state of "recently" harvested condition (<15 year old harvested slopes). In response to the 1996/97 storm event, 34 landslides (78 percent of the total) occurred on this recently managed part of the basin… Approximately 85% of the 1996/97 landslide sediment delivery came from this 37% of the watershed' (PWA 1998a p.18 ph.4)."

"Using this information to calculate the rate of input per unit area shows that rates of landsliding on lands logged within the last 15 years are 9.6 times higher than those on lands that were last cut 30 or more years ago (Reid 1998b)."

Page 11, par. 4 and par. 5 – Response: Reid's use of information about "rate of input per unit area" to draw conclusions about "rates of landsliding" does not make sense in the context of this comment. The ratio of 9.6 can be duplicated from the landslide sediment delivery and harvest area percentages, so it appears that the comment is attributing all landslide sediment delivery from within the harvested area to the impacts of recent logging. This general conclusion has several shortcomings. First, it does not account for the proportion of sides in the recently harvested area that would occur if the area had not been logged. Second, it assumes that topography, geology, and other site factors in the recently harvested areas are similar to the area that wasn't harvested. This is not always a safe assumption, since the characteristics of residual stands and decisions about harvest sites are often affected by these same variables, and the relationship between management activities and initiation of individual failures is not considered. This point is particularly relevant because one slide accounted for 33 percent of the total 1997 sediment delivery to Bear Creek (PWA, 1998c). If this one slide was not related to the harvesting activities and had occurred in an area not subject to recent harvest, the ratio of sediment inputs per unit area for sites with and without recent harvest, corrected for the rate of natural sliding in recently harvested areas, would be 0.86. In other words, there would be no apparent effect of harvesting. This alternative scenario is used to point out the difficulty of applying sweeping generalizations from uncontrolled case studies and data that do not provide detailed information about causation. In fact, a similar study by PWA (1998b) in Jordan Creek, which is adjacent to the Bear Creek watershed and had nearly equal areas of recent and older harvesting, found that 85 percent of the landsliding occurred in the areas of older harvesting.

In response to Dr. Reid's extension of PWA's findings in the Bear Creek watershed to other areas, PWA (1998c) has responded that "This is not a simple problem and one that is fraught with pitfalls and potentially misleading and incorrect application."

PWA (1998c) went on to state that "As authors of the Bear Creek study and report, we strongly discourage the blind or untrained extension of results or conclusions from this single field study of one small watershed

to other areas of the landscape. It is neither warranted nor justified to consider Bear Creek to be an analog to other areas, and to extend data or conclusions from this site to other areas. For example, in recently completing a similar sediment source analysis for the adjacent Jordan Creek watershed, which is remarkably similar in most ways to Bear Creek (certainly much more similar than the Mattole or Freshwater Creek) we discovered harvest and landslide associations that directly and dramatically contradicted those encountered in Bear Creek. It is clear that additional work and analysis is needed and that extension of data, results, or conclusions is not yet warranted."

Pg. 12, par. 5 (a) – Issue: Reid states that sediment inputs during any given storm should be similar to those that were present under pre-management conditions in order to maintain downstream channel stability. She uses observations from effects of the 1964 flood in Redwood Creek to imply that prior to logging large storms had relatively minor and short-lived sedimentation effects on natural channels.

Pg. 12, par. 5 (a) – Response: Reid leaves the impression that major sediment producing events, which alter channel morphology for 10's or 100's of years, have occurred only in the past century since logging has been occurring, and only in those watersheds that have been logged. In fact, major landsliding events pre-date the start of logging activities (Cafferata and Spittler 1998). More recently, the 1964 flood, that caused much damage in Redwood Creek, also caused large sediment producing landslides in other areas that had never been logged or roaded, i.e., North Fork Trinity River, near Thurston Gulch in the Trinity Alps Wilderness. The floods of the late 1800's also caused some large natural landslides in unlogged areas (landslide that blocked the Main Stem Trinity River near Cedar Flat). These naturally occurring slides greatly impacted channel morphology, and terraces and other geomorphic features formed by the slides continue to persist today. Based on the occurrence of these natural, geomorphic-changing events, and the presence of steep walled, deep valleys that many streams in northern California flow through, it is certainly reasonable to assume that these sorts of events have occurred many times in the past several thousand years, and channels and fish populations have been able to adapt to the changes.

Pg. 12, par. 5 (b) – Issue: "It is clear, then, that maintenance of adequate aquatic habitat and downstream channel stability requires that sediment inputs during any given storm are similar to those that were present under pre-management conditions.

Pg. 12, par. 5 (b) – Response: See previous response to issue of pre-management conditions on page 3, paragraph 2.

Pg. 12, par. 5 (c) – Issue: "Cumulative effects are assured when the recovery time for the impact is longer than the recurrence interval for the activity that triggers the impact."

Pg. 12, par. 5 (c) – Response: See previous response to issue of mitigations for cumulative effects on page 1, paragraph 4.

Pg. 12, par. 6 to Pg. 13, par. 1 – Issue: "Data from Freshwater Creek (USACE 1975, Cafferata and Scanlan 1998) show that aggradation since 1975 has resulted in a loss of about 30% of the channel cross-sectional area in the downstream reaches likely to be most sensitive to sediment inputs. Flood-routing calculations (see Appendix 4) demonstrate that the observed change in cross-sectional area would lead to approximately a 1-foot increase in flood heights for a given discharge (Figure 8). This change is equivalent to approximately doubling the frequency of flooding at these sites (Figure 9). Locations of the cross sections showing aggradation suggest that the aggradation may be associated with the extensive road- and logging-related landsliding and debris-flow activity that occurred in the winter of 1994-95 in Little Freshwater Creek watershed. In addition, the recent increases in logging intensity and road use have been accompanied by

increased erosion elsewhere in the watershed as well, and sediment from these sources would have accumulated along with that from the little Freshwater Creek landslides at downstream sites.

Pg. 12, par. 6 to Pg. 13, par. 1 – Response: Overall, Dr. Reid places much reliance on relatively sketchy data. Since there were no benchmarks for the three re-measured cross-sections, the 1998 data is actually only an approximation of the exact cross-sections surveyed in 1975. As stated in Cafferata and Scanlon (1998), conclusions that can be drawn from the 1998 data are limited due to the approximations and assumptions necessary for remeasurement.

Cross-section No. 3, the lowest cross-section which is located a considerable distance below the confluence with Little Freshwater Creek, shows a 17 percent decrease in channel cross-section area at the elevation of the 50-year flood flow (as determined by the Corps), and a 15 percent reduction for the elevation of the 100-year flood flow. Recent review by CEG Jim Falls (CDMG) indicates that there are numerous recent large landslides in the Little Freshwater Creek watershed (i.e., recent sediment source areas). In contrast, cross-section No. 5, above the confluence of Little Freshwater Creek, shows a 35 percent reduction in cross-section area for the 50-year and 100-year flows. Neither Jim Falls nor Pacific Watershed Associates have identified large recent landslides up the mainstem and South Fork of Freshwater Creek (see memo written by Falls on recent UC field tour). This has led Falls to suggest that there may have been recent mobilization of stored sediments in the Freshwater Creek channel. Therefore, recently produced sediment loads delivered to the low gradient portion of the Freshwater Creek channel may be less important in explaining reductions in channel capacity than movement of stored sediments during high flow events from 1995-1998. Review of rainfall records for the Kneeland station show that 8.0 inches of precipitation in 3 days is approximately a 5-year event. Rainfall events of this magnitude or greater have occurred in water years 1951, 1953, 1956, 1960, 1965, 1971, 1972, 1974, 1975, 1993, 1996, and 1997. The 1996 and 1997 events were approximately 10 and 5-year events, respectively. It appears that a sediment budget would need to be developed before the conclusions that Dr. Reid has reached could accepted with a reasonable degree of confidence.

Pg. 14, par. 4 – Issue: "The effectiveness of HCP/SYP in preventing cumulative impacts can thus in part be assessed by evaluating the extent to which the plan reproduces the sediment regime to which the land-use patterns and aquatic ecosystem were adjusted."

Pg. 14, par. 4 – Response: See previous responses to issues of pre-management conditions on page 3, paragraph 2 and to use of mitigations for cumulative effects on page 1, paragraph 4.

Pg. 15, par. 1 – Issue: "Standard practice for developing such a classification system (e.g. Lewis and Rice 1989) would have been to identify factors (including type of silviculture) potentially influencing landsliding rates, to statistically test the association of landsliding with each factor or combination of factors, and to use standard statistical methods to determine the relative weightings of the factors or combinations of factors found to be significant. … However, no part of the standard approach appears to have been used to develop the method presented by the HCP/SYP, the method was not tested to determine whether it is valid, and boundaries between stability classes are arbitrary."

Pg. 15, par. 1 – Response: The Forest Practice Rules state that "The sufficiency of the information provided in a SYP to evaluate environmental effects shall be judged in light of what is reasonably feasible and necessary" (14CCR Sec. 1091.7). There is no established standard practice for developing landslide hazard procedures. The process described by Reid is a research project that would take several years to develop the method, collect data for suggested statistical analysis, and test the results – as did the cited work by Lewis and Rice (1989). Testing of the method will be conducted as part of the compliance and effectiveness evaluations required by the Forest Practice Rules for measures that are adopted to mitigate or avoid significant environmental effects (14CCR Sec. 1091.8).

Pg. 15, par. 4 to pg. 16 par. 3 and pg. iv par. 3 – Issue: Reid states that experience with the mass wasting avoidance strategy of the HCP/SYP, as implemented under the pre-permit agreement, has shown that the strategy does not result in changes in silvicultural prescriptions that are capable of reducing the incidence of landsliding.

Pg. 15, par. 4 to pg. 16 par. 3 and pg. iv par. 3 – Response: Reid states that experience from past implementations of the pre-permit agreement indicates the kind of geological evaluations to be used under slope stability provisions of the mass wasting avoidance strategy of the HCP/SYP will not be effective (page 15); the strategy does not result in changes in silvicultural prescriptions that are capable of reducing the incidence of landsliding (page iv); and that existing landslides, inner gorges, and headwall swales continue to be clearcut (page iv). Reid further cites the geologic analysis of THP 1-97-307 HUM by a licensed geologist hired by PALCO as an example where no changes to the silvicultural prescription were made on the basis of slope stability concerns, when reevaluated under provisions of the pre-permit agreement (pages 15 and 16). Reid then concludes..."The implication here is that standard prescriptions from 1996 plans are considered by the company's geologists and by the California Division of Mines and Geology (CDMG) geologists to be sufficient to meet the slope stability requirements of the HCP/SYP, irrespective of the results of PALCO's Bear Creek study (PWA, 1998a), which demonstrated that those standard prescriptions result in a 9.6-fold increase in landsliding rate on the same rock type" (page 16).

In response to these conclusions, DMG notes the following:

1. THP 1-97-307 HUM was submitted to CDF and approved with changes <u>prior</u> to development of the mass wasting avoidance strategy, <u>prior</u> to implementation of the pre-permit agreement and <u>prior</u> to release of the 1998 PWA report. However, a licensed geologist was hired by PALCO <u>before</u> the THP was submitted to conduct a Zero Net Discharge (ZND) analysis according to RWQCB requirements. In addition, the licensed geologist followed DMG Note 45, Guidelines for Geologic Reports for Timber Harvesting Plans, to further evaluate the THP area. Based on the ZND and geologic concerns, the licensed geologist made recommendations for modifying the THP <u>prior</u> to its submittal to CDF.

2. During the THP review process, DMG geologists made additional recommendations for changes to the THP including: retaining trees upslope from the head scarps of landslides and changing the silviculture method from clearcut to one with higher tree retention in Unit 3, and eliminating the proposed burning, implementing whole tree yarding and retaining all non-merchantable hardwoods in portions of Unit 4 to sustain slope stability.

3. With changes made based on the geologic concerns, approximately 49 percent of the THP was approved for clearcut (not the 64 percent quoted by Reid on page 16). In addition, more than 50 percent of the plan area that includes clearcut, selection and shelter wood sites will be helicopter logged. None of the proposed clearcut is in the inner gorge or on headwall swales; much of the proposed clearcut would result in retention of hardwoods and other brush and trees not harvested; and broadcast burning is limited.

4. In July 1998, following approval of the THP, the NMFS requested an independent reevaluation of THP 1-97-307 HUM (and THP 1-96-413 HUM) by the U.S. Geological Survey (USGS) to assess whether the plan adequately addressed the February 27, 1998 pre-permit application agreement in principle. A site visit was made on August 5, 1998 with the company geologist, three DMG geologists, and USGS geologist, Ray Wilson. Although Wilson's specific written comments to NMFS focused on THP 1-96-413 HUM, his general comments were:

a. "Landslide processes were very active in the entire region, and that harvested areas have at least their share of landslide activity...there is a good case that at least some timber harvesting activities lead to

increased landslide activity and consequent sedimentation into the streams. I noted, however, that most of the landslide activity is associated with "extreme events", such as the 96/97 storms or the 1992 earthquake sequence, and that perhaps we should be focusing more attention on the potential for such events in reviewing THPs."

b. ..."modifications (to the THPs) were apparently the result of a dialog between PALCO and their consulting geologist...It seemed to me that the THP approval and review process had been structured, in part, to promote such dialogs and, that, to some extent at least, the process seemed to be working as intended. Such being the case, and seeing no egregious lapses in the geological observations and principles that formed the basis of the descriptions of the potential for mass wasting in the THP, I saw no reason to contradict CDMG's findings in their reviews."

5. At no time during these inspections was Leslie Reid present.

While the PWA report on Bear Creek was available during the re-evaluation of THP 1-97-307 HUM, Reid's conclusions regarding a 9.6-fold increase in landsliding rate are nowhere documented in that report (see previous response to issue on page 11, paragraph 3).

7. DMG has previously questioned specific details of the mass wasting avoidance strategy in the HCP/SYP. However, the conclusions reached by Reid regarding the effectiveness of the geologic evaluations that will be required are either erroneous or based on incomplete information as illustrated in the examples she uses. Reid clearly confuses requirements of the mass wasting avoidance strategy with the processes used in the evaluation of slope stability that will continue to be conducted prior to and during THP review, regardless of the mass wasting avoidance strategy criteria used.

Pg. 16, par. 2 (a) – Issue: “The CDMG has indicated they will allow only state-licensed geologists to assess the slope-stability-related prescription, and state licenses are generally held only by state employees and private consultants. The most widely recognized experts in landscape-scale slope stability generally work for universities and so do not have the necessary license. Because the mass wasting avoidance prescription for areas of "extreme" landslide hazard, inner gorges, and headwall swales thus rests on the opinions of those who have been unable to prevent the 9.6-fold to 13-fold increase in landsliding rates that is currently occurring, the provision for geologic review is essentially meaningless.”

Pg. 16, par. 2 (a) – Response: While DMG recognizes that many university research projects focus on landscape-scale slope stability issues, the State of California requires that "All geologic plans, specifications, reports or documents...be prepared by a registered geologist, or registered certified specialty geologist, or by a subordinate under his direction…"(Section 7835 of the Geologists and Geophysicist Act). Furthermore, Section 3003 (f)(2) of Title 16 Professional and Vocational Regulations, Division 29, Article 1 states that…"The practice of geology...for others includes but is not limited to the performance of geological...services by an individual, firm partnership, corporation or other association or by employees or staff members thereof, whether or not the principal business of such organization is the practice of geology..., when the geological...reports, documents, exhibits constituting the practice of geology...are disseminated or made available to the public or any individual or combination of individuals other than the employees or staff of such organization in such a manner that the public or said individual or combination of individuals may reasonably be expected to rely thereon or affected thereby." There is no restriction on individuals working for universities or in other research-related areas from becoming a licensed geologist or engineering geologist if they are able to meet the educational and experience qualifications and pass the licensing examinations. DMG notes that there are many university professors and researchers who are licensed geologists. There also are many licensed state workers and consultants who have expertise in landscape-scale slope stability mapping and practical applications in the field. DMG's role as a public review agency is

to ensure that state standards of practice are followed in order to provide adequate public safety from pending geologic hazards, that conclusions in any geologic reports or studies prepared for public review are clearly documented with supporting data, that descriptions of areas known to be sensitive to ground disturbances and sources of erosion reflect on-the-ground conditions, and that those areas identified as having potential environmental impacts related to the underlying geologic conditions are mitigated to the extent feasible.

Given that California is one of the most geologically and seismically complex states in the country, and that the north coast streams have some of the highest landslide and sediment rates under natural conditions, what is practiced and concluded in mass wasting and slope stability studies in other states and countries cannot be directly applied here in most cases; nor can studies in one watershed in California necessarily be applied to those in others. Due to the complexity of the geology from one watershed to another, it is critical that reports and reviews of geology and mass wasting issues be prepared by those who understand the lithologic characteristics and basic differences in engineering properties of each geologic unit, as well as geologic structure, geomorphic and landslide processes, determination of relative slope stability and mass wasting potential, how data on maps and in reports were compiled and the limitations of the data used. As illustrated numerous times since 1990, and as implied by Wilson (Item M above), the effects of earthquake shaking and heavy storm events on the North Coast also play an important role in the evaluation of landsliding, erosion and sedimentation under natural conditions. Mitigation of landslides and unstable slopes subject to mass wasting and land use modifications requires site specific evaluations that take all of these factors into consideration. Reid's conclusion that geologic review is essentially meaningless is based on an unreasonable expectation that DMG geologists or any other geologists are able to "prevent" landsliding, is especially questionable under the unproven 9.6-fold to 13-fold increased rates she is advocating.

Pg. 16, par. 2 (b) – Issue: "Because the mass-wasting-avoidance prescription for areas of "extreme" landslide hazard, inner gorges, and headwall swales thus rests on the opinions of those who have been unable to prevent the 9.6-fold to 13-fold increase in landsliding rates that is currently occurring, the provision for geologic review is essentially meaningless."

Pg. 16, par. 2 (b) – Response: The landsliding rates cited in this comment have been addressed in the response to issues identified on page 11, paragraphs 4 and 5. Based on the uncertainty of assumptions and procedures used in this calculation, the conclusion that state licensed geologists are unable to identify and develop mitigations for mass movement problems is unwarranted.

Pg. 16, par. 2 and pg. 17, last par. – Issue: Reid claims that the Bear Creek Study by Pacific Watershed Associates (PWA) demonstrates there is a 9.6-fold increase in landsliding rate in Bear Creek on second growth timber land harvested in the past 15 years, compared to those second growth lands that have not been harvested. She implies that mass wasting avoidance provisions in the HCP/SYP will allow similar increases in landsliding on other lands.

Pg. 16, par. 2 and pg. 17, last par. – Response: In fact, Reid calculated the 9.6-fold increase in landsliding rate herself, using data in the PWA Bear Creek study (PWA 1998a). Conclusions based on her interpretation of the data were never made by the authors of the PWA Bear Creek Study. Reid indicates how she arrived at the 9.6-fold increase on page 2 of Reid (1998b), and also indicates she did not agree with the PWA analysis of the landslide rate.

A response by the PWA authors to Reid's review of the Bear Creek PWA report is contained in PWA, 1998a. DMG concurs with statements in the PWA response that caution against using the Bear Creek data in inappropriate ways. For example the PWA rebuttal states on page 1, "..it is abundantly clear that the data and findings from Bear Creek are highly specific to that drainage, and not necessarily transferable to other

watersheds…Speculating on cause-and-effect, transferring data or findings, or developing conclusions about the operations of another watershed, based on Bear Creek data, is not warranted and will likely lead to erroneous conclusions."

PWA pointed out that one of the landslides that occurred in Bear Creek in 1997 was so large that it accounted for 33 percent of the total sediment delivery of the 44 slides that occurred in 1997 and that, because of its size, may be completely unrelated to recent harvesting (page 6 of PWA, 1998a). Also on page 7, PWA notes "Although we agree that elevated landslide frequencies on these recently harvested slopes in Bear Creek suggest a relationship between harvesting and slope instability, insufficient time was available to research and determine the influence of specific silvicultural practices…In fact, as was made clear in the adjacent Jordan creek watershed, it is unclear what role harvesting actually played in the observed landslide frequencies." In Jordan Creek, 85 percent of the recent landslides had occurred on the older harvest area, and only 15 percent on the recently harvested area. The role of silviculture in contributing to hillslope landslide frequencies during storm events is not as clear as suggested by Dr. Reid."

On page 19 of the PWA response (PWA 1998c), "Reid's concluding statement that: 'The bottom line is that the [Bear Creek] report demonstrates that present land use practices are directly responsible for at least a 960% increase in landslide frequency...' is without merit. It is a serious scientific mistake to interpret an apparent association between variables (such as recent harvesting and landsliding) as a 'direct' cause and effect relationship without the data and proof to make such a claim. When proclaimed by a respected scientist, such interpretations quickly find their audience and work their way into debates about management and conservation, and into the regulatory arena for areas and practices which may have little in common with the original site."

Page 16, par. 3 – Issue: "Even though the practices are highly likely to reduce the amount of sediment contributed from roads, there is no indication of whether the reduction will account for 5% or 50% of the total road-related sediment inputs. Indications from recent storms in Redwood Creek indicate that during lengthy, low-intensity storms, high rates of landsliding can occur from failure of what had appeared to be stable road fills, while failures due to overtopping or diversion at culverts are relatively infrequent (M. Madej, US Geological Survey, personal communication). 'Storm proofing' does not modify the frequency of failure of what appear to be stable road fills. … 'Storm proofing' thus is a very good idea, bit it is certainly not a panacea. Roads will continue to fail even after 'storm-proofing,' and the overall effectiveness of the method will need to be evaluated to determine the extent to which it redresses road-related problems."

Page 16, par. 3 – Response: A primary purpose of road storm proofing is to prevent the production and transport of sediment to streams. It is not clear from the comment what constitutes a high rate of road fill landsliding or whether these failures resulted in sediment production. The statement that stormproofing does not reduce landsliding from fills that appear to be stable is axiomatic, since mitigation would not be applied where problems were not expected. This statement does not, however, account for the potential reductions in sediment production achieved by treatment or removal of road fills that are identified as potential sediment sources. In addition, the conclusion that culvert problems are relatively infrequent is contrary to the findings of previous inventories, which have identified failures at culverts and other drainage features as a major source of sediment production from older roads (Weaver et al 1995, Best et al 1995). If the roads cited in this comment had been previously storm proofed, the lack of failure by overtopping or diversion of culverts can be seen as an indication of successful mitigation. And in any event, road storm proofing is a cost-effective mitigation that will result in a reduction in sediment production from what would otherwise be expected.

Pg. 16, par. 4 – Issue: "If the slow pace of road repair is intended to provide the "currency" for mitigation banking, the effort is misplaced. As demonstrated by the Bear Creek study (PWA 1998a), prevention of all

road-related sediment production between 1990 and 1997 would have offset less than 25 percent of the sediment produced from silviculturally related landslides during that period."

Pg. 16, par. 4 – Response: The assertion that mitigation of existing road related problems will prevent only a small fraction of potential management related sediment production is based on the questionable assumptions that have been addressed in the response to comments on page 11, paragraphs 4 and 5.

Pg. 17, par. 1 – Issue: "The HCP/SYP also makes it clear that the company cannot be 'compelled' to exceed the maximum limits listed on IV-D-47."

Pg. 17, par. 1 – Response: Under the provisions of Assembly Bill No. 1986, the no-cut buffer strip widths described on page IV-D-47 of the HCP/SYP must be increased to 100 feet and 30 feet along Class I and II watercourses, respectively.

Pg. 17, par. 2 – Issue: "Any assessment procedure that ignores sediment input to Class III streams will provide invalid results. This issue is particularly important in view of the lack of forested buffers around the Class III streams: these are stream channels that will be logged. Equipment exclusion is not sufficient to prevent surface erosion at such sites or sediment transport through them. Work by Megahan (1987), for example, demonstrates that sediment yields can double after helicopter logging and burning of 23 percent of a watershed even when a forested 25-foot buffer is left around all adjacent streams. Surface erosion processes become active during smaller storms than do landsliding or channel erosion, so surface erosion is a particularly important influence on chronic turbidity levels."

Pg. 17, par. 2 – Response: The cited work by Megahan was conducted on decomposed granitic soils with much higher surface erosion potential than soils located in the HCP/SYP area, and Megahan is not specific about what "streams" were protected by buffer strips. Class III watercourses only carry water in response to precipitation events, and are not generally classed as streams, so it is likely that channels equivalent to Class III watercourses were not protected from logging or burning. The work by Lewis (1998) described in the previous response to gully erosion impacts on page 5, paragraph 2, is more relevant to the soil, topography, precipitation, and harvesting conditions of the HCP/SYP area. In this case, harvesting and burning without buffers or equipment exclusion zones along Class III watercourses resulted in an overall 89 percent increase in the sum of downstream suspended sediment during a 7 year period following harvesting in the North Fork of Caspar Creek, with little or no evidence of adverse sediment impacts on downstream macroinvertebrates, leaf decay rates, or algae (Bottorff and Knight, 1996). The use of equipment limitation zones, as is now required by the FPRs and in the HCP/SYP, will further reduce inputs of sediment into Class III watercourses. The statement that surface erosion is active during smaller storms than landsliding or channel erosion is true for roads, which is one of the reasons for emphasizing mitigation of road runoff drainage. However, it is not generally correct for harvest areas, where overall high infiltration rates can prevent extensive overland flow from smaller storms.

Pg. 17, par. 4 – Issue: "About 10% of the most recent logging-related Bear Creek landslides were not associated with features that would require geological evaluation, and these alone would have increased the landsliding rate by at least 86% over background conditions. Reduction of the frequency of these landslides to levels that would meet the objectives of the Basin Plan could be achieved only through control of the rate of cut in a watershed and through consistent protection of sites likely to be destabilized by logging."

Pg. 17, par. 4 – Response: This comparison of landsliding on logged areas to background rates and the recommendation for using control of rate of cut to meet Basin Plan objectives appear to be based on calculations that are addressed in the previous response to issues on page 11, paragraphs 4 and 5. It is unclear how features that would not require geological evaluation were determined for this comment, since

identification of unstable areas and slides is required by the Forest Practice Rules (14CCR Sec. 1034(x)(10)). In addition, all THPs in the HCP/SYP area are reviewed by DMG geologists to identify areas needing additional field inventory as part of the THP review process.

Pg. 17, par. 4 to pg. 18, par. 1 – Issue: "The only provision for modifying rate of cut under the HCP/SYP is through the 'disturbance index,' but the threshold value of the disturbance index that elicits concern is high enough that the rates of cut that caused the Bear Creek and Elk River problems are not at all constrained."

Pg. 17, par. 4 to pg. 18, par. 1 – Response: The cited correlation between the disturbance index threshold and logging induced landsliding is based on assumptions and calculations about silviculturally related landsliding that are addressed in the previous response to comments on page 11, paragraphs 4 and 5. In the final version of the HCP/SYP, calculation of the disturbance index has been revised to apply to hydrologic units, which are smaller than the previously proposed watershed assessment areas, and to account separately for the effects of roads that are re-used within the 10 year recovery period. The effectiveness of the disturbance index approach will be monitored as required by the FPRs (14CCR Sec. 1091.8).

Pg. 18, par. 2 – Issue: "... the HCP/SYP appears to call for a long-term conversion of vegetation from a redwood dominated to a Douglas-fir dominated forest."

Pg. 18, par. 2 – Response: The table titled harvested volume by log type on unnumbered page 17 of part C volume III, shows a shift in harvested volume from a majority of young growth redwood to a majority of young growth Douglas-fir. There could be a number of factors contributing to this phenomenon. Two of these factors are listed below.

Redwood has a higher market value than Douglas-fir and since the objective function is to maximize net present value, if all other things are equal the redwood will be selected for harvest.

The young growth redwood may be more closely associated with the residual old growth that is scheduled for harvest and hence is harvested as part of the old growth removals.

Do these harvest volumes indicate a shift in species types over the forest over time? The following table summarizes WHR types over time in an attempt to address this issue. This data was derived from the tables found in part C of volume III titled *Alternative 164g; Stocking, Growth, and Harvest Volume by Post Harvest WHR Type*.

Decade	*WHR Habitat Type*	*Acres*	*Proportion*	*Volume*	*Proportion*
0	DFR	77,513	46.1%	1,285,282	30.7%
	RDW	90,459	53.9%	2,904,131	69.3%
6	DFR	73,458	44.1%	2,030,468	42.9%
	RDW	93,171	55.9%	2,698,020	57.1%
12	DFR	71,671	42.5%	3,275,387	48.5%
	RDW	96,812	57.5%	3,475,200	51.5%

The acres of DFR (Douglas-fir) and RDW (redwood) type change very little in the projected 120 years. The volume does shift from about a third to one half of the relative standing volume being in Douglas-fir.

The regeneration assumptions for plantations includes redwood stump sprouts and planted redwood and Douglas-fir for redwood sites. There are an equal number of redwood and Douglas-fir trees planted on both the intensively and extensively managed sites. This is consistent with observations made in the field by CDF. Douglas-fir sites are not planted to redwood although existing redwood will sprout. The site index is higher for Douglas-fir than for redwood. However, this is balanced by the fact that there is an upward calibration of growth for redwood but not for Douglas-fir. There is no indication from the modeling inputs or from on the ground practices that a major type conversion from redwood to Douglas-fir is being planned or implemented.

Pg. 18, par. 3 – Issue: "Fine sediments are brought to the surface of roads in part by the 'pumping' of fine-grained subgrade materials up through the surfacing gravels by traffic on a wet road bed. Mud on the surface is then washed off during the next storm, irrespective of whether the road is being trafficked during the storm."

Pg. 18, par. 3 – Response: Road drainage requirements of the FPRs and mitigations included in the HCP/SYP are designed to disperse and filter runoff from road surfaces to prevent sediment transport of materials from the road into streams and other waterbodies. The problem of road-related sediment production will also be mitigated by the wet weather road use restrictions that are included in the final HCP/SYP.

Pg. 18, par. 4 – Issue: "Increased debris flow incidence due to the further depletion and eventual complete absence of effective woody debris in Class III channels will likely be an important factor in …[downstream] aggradation. The expected increase in downstream aggradation will also continue to cause increases in flood heights…"

Pg. 18, par. 4 – Response: The effects of proposed management activities under the HCP/SYP on sediment production from Class III watercourses is addressed in the previous response to issues on page 3, paragraph 4. Changes in channel cross section leading to increased flood heights is addressed in the response to issues on page 12, paragraph 6 to page 13, paragraph 1. In addition, it is highly unlikely that the application of additional mitigation measures as required by the HCP/SYP will cause an increase in impacts relative to operations conducted without such mitigation measures.

Pg. 18, par. 5 – Issue: "Provisions of the HCP/SYP for sediment control appear to be weak primarily because the analysis does not account adequately for geomorphological conditions characteristic of this area and because the implications of the studies cited in IV-D-72ff are not adequately considered in the design of the HCP/SYP. … half the stream network – and thus half the opportunities for introducing surface erosion sediment – is in Class III channels, and there are no forested buffer strips prescribed on Class III channels. A 'mitigation' of not using heavy equipment adjacent to the channel while it is being clearcut is not a mitigation for minimizing controllable sources of sediment to levels required by Basin Plan objectives."

Pg. 18, par. 5 – Response: The statement that "A 'mitigation' of not using heavy equipment adjacent to channel while it is being clearcut is not a mitigation for minimizing controllable sources of sediment …" indicates a misunderstanding of the proposed mitigation measure. The purpose of this measure is to maintain surface cover that would be otherwise disturbed by direct contact with heavy equipment along Class III watercourses. The studies cited on pages IV-D-72 through IV-D-77 support a conclusion that streamside buffers greatly reduce the amount of sediment entering streams in direct runoff from adjacent harvested areas. The amount of reduction will depend on factors such as buffer width, character of materials within the buffer, volume of flows and amount of sediment entering the buffer, and sideslope steepness. Filtration of sediment entering buffer strips is accomplished by infiltration of runoff and by reduction of flow velocity that leads to deposition of entrained materials. These processes are controlled by the character of

materials located at or immediately above the ground surface, such as duff, litter, grasses and forbs and ground-hugging shrubs. As a result, equipment limitation zones, as proposed in the HCP/SYP, that maintain surface cover and low-growing vegetation are effective in reducing transport of surface erosion from harvested areas to adjacent streams.

Pg. 18, par. 6 – Issue: "The HCP/SYP's lack of sufficient controls for road-surface erosion appears to be based, in part, on a lack of appreciation of the likely impacts of high levels of chronic turbidity on salmonids…"

Pg. 18, par. 6 – Response: The purpose of road erosion control measures contained in the Forest Practice Rules and included in the HCP/SYP is to prevent the discharge of sediment into watercourses in amounts that would have adverse impacts on salmonids.

Pg. 19, par. 4 – Issue: "Of particular importance in the Bear Creek study is the discovery that 12% of the slides were associated with planar slopes and 12% with 'breaks in slope', which will not be protected through the mass-wasting avoidance strategy. This important information was not considered in the HCP/SYP's discussion of sediment input from mass wasting. It is likely that this oversight is partially responsible for the lack of any mechanism in the plan to address the overall increase in landslide rate that will be triggered by intensive silviculture even in watersheds where the landforms of known susceptibility to landsliding are fully protected."

Pg. 19, par. 4 – Response: The conclusion that the HCP/SYP lacks a mechanism to address increased landslide rates triggered by intensive silviculture is based on Reid's earlier analysis of the Bear Creek report by PWA (1998a). As indicated in the response to issues on page 11, paragraphs 4 and 5, this analysis does not address causation or account for the background landslide rates, and inappropriately extends the results of one example to a much larger landscape.

Pg. 19, par. 5 – Issue: Proposed method for calculating cutting cycles to reduce excess landslide inputs.

Pg. 19, par. 5 – Response: The proposed method for calculating cutting cycles to reduce excess landslide inputs related to silvicultural activities suffers from the same problems as the underlying assumptions, which are described in the response to issues on page 11, paragraphs 4 and 5.

Cumulative Watershed Impacts

Pg. 20, par. 3 to pg. 21, par. 7 – Issue: Continued timber management under provisions and mitigations in the HCP/SYP will lead to increasing cumulative impacts as a result of changes in watershed components.

Pg. 20, par. 3 to pg. 21, par. 7 – Response: Mitigation measures included in the HCP/SYP are in addition to protections provided under current and past timber operations, and will maintain and increase the amounts of in-channel woody debris and stream shading, and will decrease amounts of sediment production from current levels. Implementing these additional mitigations under the HCP/SYP will not lead to greater cumulative impacts than on-going operations that do not include these measures. More specific effects on flow, sediment production, and woody debris have been addressed in the responses to previous comments.

Pg. 21, par. 8 to pg. 22, par. 1 – Issue: "The HCP/SYP implies that no adequate method is available for analysis of cumulative watershed impacts (IV-D-109) … future "trend monitoring" will take the place of cumulative effects analysis (IV-D-109) … The approach used by the HCP/SYP implies that it is not currently possible to follow the provisions of the California Forest Practices Act as they relate to the required cumulative effects analysis."

Pg. 21, par. 8 to pg. 22, par. 1 – Response: The Forest Practice Rules do not specify a single approach to assessment of cumulative impacts because no single method exists that addresses the variable vegetative and landscape conditions that occur on California forestlands. However, the final HCP/SYP must meet the information and assessment requirements of the Rules if it is to be relied on for THPs submitted under the HCP/SYP. Trend monitoring will be used as part of the HCP/SYP to determine if the analysis and mitigation proposed in the plan is performing as expected.

Pg. 22, par. 2 (a) – Issue: "… examination of the methods used to calculate the appropriate levels of mitigation shows that expected sediment inputs are being underestimated by as much as 10,000 percent (see, for example, discussions in Reid 1998c and Reid 1998d)."

Pg. 22, par. 2 (a) – Response: Review of Reid 1998d, indicates that the cited 10,000 percent underestimate of expected sediment is based on the questionable landsliding assumptions calculations addressed in the previous response to issues on page 11, paragraphs 4 and 5.

Pg. 22, par. 2 (b) – Issue: "… [off-setting] mitigations do not necessarily take place in the watershed in which the plan's sediment will be discharged."

Pg. 22, par. 2 (b) – Response: Offsetting mitigation measures included in THPs in the HCP/SYP area are typically located within the watershed assessment area for the cumulative effects assessment and as close as is possible to the watersheds affected by timber operations, depending on availability of mitigation opportunities (Joseph Fassler, CDF Fortuna, personal communication).

Pg. 22, par. 2 (c) – Issue: "… offsetting mitigations have been carried out strictly through road and landing repairs and upgrades. Because both the Bear Creek (PWA 1998a) and North Fork Elk River (PWA 1998b) studies demonstrate that rates of road-related erosion are considerably lower than rates of silviculturally related erosion in this area, complete solution of road-related sediment problems would not be sufficient to offset the sediment inputs associated with logging."

Pg. 22, par. 2 (c) – Response: This comment appears to be mixing the concepts of off-setting mitigation that is intended to reduce on-going or imminent erosion from existing sources with the mitigation of proposed silvicultural activities. The calculation of silviculturally related erosion referenced in this comment has been addressed in the response to issues on page 11, paragraphs 4 and 5.

Pg. 22, par. 3 (a) – Issue: "… it is not possible to mitigate the impacts caused by hydrologic changes. Increased flooding due to altered vegetation cannot be lessened by any means other than a decrease in the area of vegetation affected in a watershed each year. Similarly, the roles played by LWD cannot be fulfilled through any form of mitigation."

Pg. 22, par. 3 (a) – Response: Impacts caused by hydrologic changes are addressed in the response to issues on page 6, paragraph 5. Mitigation measures are included in the HCP/SYP to address impacts on woody debris, as described in previous response to issues on pages 3 through 6.

Pg. 22, par. 3 (b) – Issue: "When cumulative impacts are to be addressed by off-setting mitigations, it is necessary not only to lessen the impact, but to cancel it out fully. If this is not done, then the level of downstream impact will be prolonged, thus constituting aggravation of an existing cumulative impact."

Pg. 22, par. 3 (b) – Response: Downstream conditions that are recovering from past impacts under on-going management activities are not likely to be aggravated the impact reductions achieved by off-setting mitigation and additional mitigation measures specified in the HCP/SYP.

Page 22, par 4 (a) – Issue: "Analysis of cumulative watershed impacts is intended in part by the HCP/SYP to be accomplished through watershed assessment. However, the method upon which the intended assessments are to be based is not itself a method for assessment of cumulative watershed impacts; instead, it is a procedure for design of "best management practices" (Reid 1998e).

Page 22, par 4 (a) – Response: Level II watershed analysis, as defined by the WA DNR process, is a starting point for addressing cumulative watershed effects. It is a screening procedure to determine appropriate prescriptions for different areas of the landscape to prevent adverse impacts from land management activities. This process is a proactive approach for CWEs. In essence, it determines what on-site practices are needed for sensitive portions of the watershed, based on hillslope sensitivity and vulnerable instream channel resources. Berg et al. (1996) listed the desirable attributes of a CWE methodology, and concluded that the method most closely matching these criteria is the Washington State version of watershed analysis. They state that it appears to incorporate the best procedural steps to assure a high likelihood of success. Watershed analysis cannot, however, be considered a complete answer to addressing cumulative watershed effects for CEQA and California Forest Practice Rule requirements. Information developed during the watershed analysis process can be used, however, to meet these requirements.

Pg. 22, par. 4 (b) – Issue: Appeal to the future design of a procedure to assess cumulative watershed impacts based on an existing method that does not itself assess cumulative watershed impacts does not constitute an adequate solution to the cumulative impacts problem.

Pg. 22, par. 4 (b) – Response: The Final HCP/SYP must include a cumulative impacts assessment that meets the information and assessment requirements of the Forest Practice Rules if it is to be relied on for THPs submitted under the HCP/SYP.

Pg. 23, par. 2 – Issue: "… the disturbance index suffers from the same major deficiency as the 'landslide hazard index' …"

Pg. 23, par. 2 – Responses: The Forest Practice Rules state that "The sufficiency of the information provided in a SYP to evaluate environmental effects shall be judged in light of what is reasonably feasible and necessary" (14CCR Sec. 1091.7). There is no established standard cumulative impacts assessment procedure, and the Rules do not require the use of any specific method (14CCR Sec. 1091.6(d)). The process suggested for the landslide hazard index, which is also recommended for developing a cumulative impacts assessment method, is a research project that would require several years to develop the method, collect data for suggested statistical analysis, and test the results. Testing of the method described in the HCP/SYP will be conducted as part of the compliance and effectiveness evaluations required by the Forest Practice Rules for measures that are adopted to mitigate or avoid significant environmental effects (14CCR Sec. 1091.8).

Pg. 23, par. 3 – Issue: "A 10-year recovery period is obviously inappropriate in an area with documented recovery periods of longer than 30 years (e.g. Madej and Ozaki 1996). When cumulative impacts are of concern, it is absolutely essential that the recovery period needed for the impact be the basis of a recovery curve, not that for the impacting activity. If the period of recovery for the impacted resource is longer than the period of recovery assumed for the disturbance index, it is not possible to use the index to evaluate the potential for cumulative impacts."

Pg. 23, par. 3 – Response: The recovery time of 10 years used for the disturbance index in the HCP/SYP covers the period of time when sites disturbed by timber operations are most susceptible to surface and mass movement erosion and, therefore, might cause or contribute to cumulative impacts. Use of the disturbance index will be monitored for compliance and effectiveness as required by the Forest Practice Rules, and

cumulative impacts will be further reviewed as part of the Level II watershed analyses required by the HCP/SYP.

Pg. 23, par. 4 – Issue: "Disturbance index methods, such as the ERA method, have also been identified as deficient because they do not recognize the potential for multiple and interacting mechanisms of impact, or for the existence of multiple impacts with different patterns of causality."

Pg. 23, par. 4 – Response: The disturbance index proposed in the HCP/SYP provides a process to track and limit potential impacts that could accumulate to cause or contribute to cumulative impacts. There is no available method for assessment of cumulative impacts that covers the universe of possible interactions that can occur on natural landscapes. Use of the equivalent roaded area (ERA) procedure for assessment of cumulative impacts has been adopted by Region 5 of the USFS and is recognized as an acceptable approach by Forest Practice Rules (14CCR Sec. 1091.6(d)(2)).

Pg. 23, par. 6 – Issue: "… the disturbance index is applied at the scale of "Watershed Assessment Areas." This scale is clearly inappropriate for evaluating the potential impacts to beneficial uses that depend on smaller scale watersheds."

Pg. 23, par. 6 – Response: The area for application of the disturbance index has been changed in the final HCP/SYP to hydrologic units that are smaller than the Watershed Assessment Areas described in the draft plan.

Pg. 24, Item No. 3 – Issue: Potential alternatives to reduce cumulative impacts.

Pg. 24, Item No. 3 – Response: Methods suggested by Reid for calculation of landsliding and flood frequency impacts are addressed in previous responses to issues on page 11, par. 4 and 5 and on page 6, par. 5 through page 9. Application of the disturbance index is addressed in previous responses to issues on page 23, paragraphs 4, 5, and 6.

Implications for meeting the objectives of Habitat Conservation Plans

Pg. 24, par. 4 and 5 – Issue: The HCP legislation requires that an HCP not lead to the extinction of the ESU, and thus indicates that there is an implied requirement to evaluate the cumulative impact of this HCP, in combination with foreseeable future actions, on the species in question. In this case, the foreseeable future actions are the application of similar standards for the rest of the industrial timberland holdings in this ESU. No such analysis has been done. The HCP is thus fundamentally incomplete; it has not accomplished the single task that is most central to its purpose.

Pg. 24, par. 5 to pg. 25, par. 1 – Issue: The provisions of the HCP/SYP will lead to an expansion of the area of adversely impacted habitat throughout the property considered; they will lead to an increase in the severity of the existing cumulative impacts; and they will prolong the duration of existing impacts, thus aggravating the temporal cumulative impact.

Pg. 24, par. 5 to pg. 25, par. 1 – Response: Timber management has been an on-going activity within the HCP/SYP area for over 100 years. It is highly unlikely that the application of additional mitigation measures as required by the HCP/SYP in combination with current Forest Practice Rules would shift the current balance between recovery from prior impacts, recent harvesting, and on-going operations toward increased cumulative watershed impacts in area or time.

Pg. 25, par. 4 – Issue: The plan contains no analysis of cumulative watershed impacts, and it contains no discussion of cumulative watershed impacts as a changed and unforeseen circumstance.

Pg. 25, par. 4 – Response: The final draft of the HCP/SYP will include additional discussion of cumulative watershed effects. Cumulative watershed effects will be further addressed as Level II watershed analysis (Washington DNR) is completed for the watershed units comprising the ownership.

Pg. 25, par. 5 – Issue: Unless the HCP can be fundamentally restructured to provide enforcement measures for preventing downstream cumulative impacts, the California Forest Practice Rules, if enforced adequately and if accompanied by guidelines for avoiding impacts to the species and habitats of concern, would provide a higher likelihood that coho salmon of this ESU will not become extinct.

Pg. 25, par. 5 – Response: Implementation of additional mitigation measures specified in the HCP/SYP will lead to additional reductions in ongoing downstream impacts.

Implications for meeting the objectives of Sustained Yield Plans

Pg. 26, par. 2 – Issue: For this HCP/SYP, none of required SYP issues (sustained timber production, watershed impacts, fish and wildlife) is satisfactorily addressed according to requirements of the Forest Practice Rules.

Pg. 26, par. 2 – Response: The final version of the HCP/SYP has been reviewed by CDF and found to contain sufficient information and analysis to adequately address issues related to timber production, watershed impacts, and fish and wildlife as required by the California Forest Practice Rules.

Pg. 26, par. 3 – Issue: The HCP/SYP overtly does not address cumulative watershed impacts…A cumulative effects analysis must be done before the long-term projections of yield required for the SYP are possible. The existing calculations for sustained yield are thus invalid, as they do not consider the changes that will be necessary to address silviculturally related cumulative impacts.

Pg. 26, par. 3 – Response: The disturbance index is used in the HCP/SYP as one of the factors in the harvest schedule model that determines the spatial allocation of harvest timing and long term sustained yield.

Pg. 26, par. 4 – Issue: The SYP must include a fish and wildlife assessment that "shall address threatened, endangered, and sensitive species and other fish and wildlife species which timber operations could adversely impact, resulting in significant adverse individual or cumulative impacts" and it shall address the impacts of harvesting on habitats needed by those species. The HCP/SYP has not attempted to assess the cumulative impacts of the plan on coho salmon or on other aquatic species.

Pg. 26, par. 4 – Response: Volume I, pp. 34-35, and Volume II, Sections E and H include assessment of fish and wildlife issues. Any issues that do not meet requirements of the Forest Practice Rules in the HCP/SYP must be addressed in subsequent timber harvesting plans.

Pg. 26, par. 5 – Issue: The SYP must include a watershed assessment that "shall include an analysis of potentially significant adverse impacts, including cumulative impacts, of the planned operations and other projects, on water quality, fisheries, and aquatic wildlife." The HCP/SYP has included no such analysis.

Pg. 26, par. 5 – Response: See previous response to issues on page 26, paragraph 4.

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Conclusion of detailed responses.

LMR-1

The analysis presented is based on the premise that large woody debris (LWD) input rates expected from 300-year-old redwood stands should be the standard by which the potential LWD rates from managed stream buffers should be compared. Riparian management zones that are one or more site potential tree heights wide and are fully-stocked with old-growth stands, such as those described by the FEMAT report, are intended to afford full protection of fish and other aquatic species (i.e., avoid “take”). Such a standard is mismatched to the purpose of the Final HCP/SYP, under which some incidental “take” of coho salmon and other species is expected. While the riparian management zones presented in the Final HCP/SYP and the Final EIS/EIR assume a level of incidental “take” of coho salmon, at the same time, they are one component of a comprehensive plan to provide for aquatic properly functioning conditions and long-term survival of coho salmon.

The effectiveness of the proposed buffers with respect to their biological and physical function is discussed in Section 3.7.4.1. of the Draft EIS/EIR. The Draft EIS/EIR and Final EIS/EIR evaluate the effectiveness of the riparian strategy offered to protect coho salmon and other aquatic species. Buffers were evaluated with regard to protection within the context of riparian management goals. For this analysis, the level of protection required to maintain the aquatic system was the main goal. The riparian functions evaluated specifically include: shade, LWD recruitment, leaf and needle litter inputs, bank stability, sediment control, and microclimate. As part of the Draft EIS/EIR evaluation these specific RMZ prescriptions were examined using the best available scientific information.

The RMZ widths are based on considerations of watershed input mechanisms to streams that relate to both biological and physical factors and how they interact to affect instream conditions. The widths are designed, including other objectives, to ensure an increasing potential for large woody debris inputs, to maintain or reduce water and air temperatures, to maintain stable or improving near- and instream habitat structure, to provide inputs of nutrients from riparian vegetation, to provide an effective filter strip to capture sediment transported by overland flow and to ameliorate the potential effects of landslides. They are also designed in combination with the other components of the aquatic strategy that affect watershed inputs, including those that affect hillslope processes (surface and fluvial erosion, mass wasting and hillslope hydrology).

The selected RMZ widths are influenced by the analysis that led to RMZ prescriptions under other HCPs, which inform what measures are practicable to provide recovery of aquatic resources and restore ecosystem function to aquatic properly functioning conditions. The concept of one site index tree height at age 100 was

used as a starting point for designing buffer widths. This is a known quantity based on published empirical growth and yield tables for commercial coniferous species. During the development of the Draft HCP/SYP and the Draft EIS/EIR, this height was compared to the distances from streams within which the watershed input mechanisms referred to above have been documented in the literature to be the most at play. This comparison and analysis is presented in Volume IV Part D, Section 1.3.1. of the Draft HCP/SYP and in 3.7.4.1, 3.7.4.2, and 3.7.4.3 of the Draft EIS/EIR. While employing the concept of one or more site potential tree heights to design stream-side buffers would likely achieve the goal of maintaining or eventually restoring aquatic properly functioning conditions, it is but one of many approaches to do so. Further, this is unlikely to be the most appropriate one considering the multiple objectives of the HCP.

With regard to the comments about increasing the protection of Class II and III watercourses to reduce the potential for landslides and torrential debris flow, refer to the response to ALA-28. We do not agree that winter refuge habitat for salmonids will also be reduced. The commentor does not present information or analysis to support this conclusion.

We agree that the Assembly Bill 1986 requirements provide improvements over what was prescribed in Draft HCP/SYP. The Final HCP/SYP includes the requirements of AB 1986.

We agree that LWD must be of appropriate size to remain in place and function in streams of different sizes. This is reflected in the aquatic properly functioning matrix developed by the agencies.

We agree that LWD recruitment potential in many riparian stands will remain “severely depressed in volume and caliper” for decades to come. Table 3.8-7 in Section 3.8.3 of the Draft EIS/EIR presents estimates of time required for stands to achieve properly functioning conditions with respect to LWD.

With regard to the interest in retaining residual old-growth trees as sources of LWD where LWD quantities are limiting, note that the prescriptions in the Final HCP/SYP /and the Final EIS/EIR provide “no-cut” zones, within which harvest (including old-growth trees) would be prohibited until watershed analysis occurs. In addition, watershed analysis will identify in what stream reaches LWD quantities and in what riparian stands LWD recruitment potential falls short of the levels characterized in the aquatic properly functioning condition matrix. Where these conditions occur, watershed analysis would likely prescribe retention of the large tree component of riparian stands including old-growth trees. Also, according to the Final HCP/SYP and the Final EIS/EIR, the largest 18 trees per acre would have to be retained during each harvest entry if a prescription from watershed analysis would allow harvest within the area of the Class I RMZ extending between 30 and 100 feet from the stream. Another measure that would retain old-growth trees is the provision that no harvest will be allowed in channel migration zones and in areas that present mass wasting concerns (including inner gorges) until after completion of watershed analysis.

LMR-2

In response to public comments and FESA and CESA issuance criteria, additional protections have been placed on Class III watercourses. Refer to the response to CAG-144. For additional details, refer the Final EIS/EIR, Appendix P.

It is anticipated that these additional protections along Class III watercourses will provide several benefits, as follows.

Channel roughness will be maintained through continued input of woody debris and the presence of live roots within the active channel. Maintenance or restoration of channel roughness is anticipated to increase flood storage and decrease flood peaks downstream.

Continued or increased inputs of woody debris and the presence of live roots within the active channel are expected to retard gullying in Class III channels.

Standing trees along Class III channels are expected to prevent the formation of debris flows or retard the delivery distance of these flows. This is expected to reduce the overall delivery of sediment to Class I and Class II channels.

LMR-3

Refer to the response to LMR-1 regarding the establishment of 170-foot-wide Class I watercourse RMZ buffers. Note that the Final HCP/SYP and the Final P EIS/EIR will require that inner gorge slopes such as those from which information on LWD recruitment and tree fall was obtained will be treated as no harvest zones until watershed analysis is completed.

LMR-4

In response to public comments and FESA and CESA issuance criteria, additional protections have been placed on Class I watercourses. A no-cut buffer strip of 100 feet is required along all Class I watercourses. Outside of this no-cut zone is a 100- to 170-foot Selective Entry Band where late seral characteristics will be maintained. For all slopes greater than 50 percent adjacent to the Riparian Management Zone (RMZ), the RMZ Selective Entry Band will be extended upslope to the break in slope (defined as a slope less than 50 percent for a distance of more than 100 feet) or upslope to a slope distance of 400 feet, whichever is less. It is anticipated that these additional prescriptions will result in LWD recruitment levels similar to those found in unmanaged stands.

For Class II watercourses, a 30-foot no-cut buffer is provided with an outer, 30- to 130-foot Selective Entry Band where late seral stand characteristics are to be maintained. The extent of the Selective Entry Band upslope will be determined as described in the previous paragraph.

For Class III watercourses, unstable features are covered under the mass wasting strategy and allow for no harvest until the completion of watershed analysis. Appropriate silvicultural prescriptions, if any, will be designed for unstable features. Buffer widths for Class III watercourses outside of unstable areas are discussed in the response to LMR-2. For additional detail refer to the Final EIS/EIR, Appendix P.

In order to ensure recruitment of large diameter wood to Class I and II watercourses, late seral stand characteristics are to be maintained or enhanced in the outer Selective Entry Band. Specific prescriptions are described in the Final EIS/EIR, Section 3.7 and Appendix P.

LMR-5

As described in responses to LMR-2 and LMR-4, additional riparian protection is anticipated to maintain or enhance channel roughness, thereby increasing flood storage and attenuating downstream flood peaks.

LMR-6

Rate of canopy removal in a hydrologic unit will be addressed using the disturbance index. When cutting and other associated harvest activities cause the disturbance index to exceed 20 percent, various restrictions on timber harvest and related activities are imposed (such as no clear cutting). In addition to assessment at the hydrologic unit scale, the disturbance index will be evaluated at the scale of Class I sub-basins with similar operating restrictions when the disturbance index exceeds 20 percent. Details of the approach are outlined in the Final EIS/EIR Appendix P. The agencies anticipate that this strategy will minimize impacts to the natural flooding regime.

LMR-7

In addition to the Disturbance Index approach described in the response to LMR-6, the mass wasting avoidance strategy prohibits cutting on all unstable areas and those areas with a high, very high, or extreme mass wasting hazard until the completion of watershed analysis.

LMR-8

Additional watercourse protections discussed in responses to LMR-2 and LMR-4 will not allow in-stream removal of woody debris. The Disturbance Index approach is expected to minimize alterations to the natural flooding regime by regulating the rate of timber harvest and associated activities (see response to LMR-6).

LMR-9

Effective rainfall is addressed through the disturbance index, which limits rates of cutting and other harvest-related activities when a disturbance threshold is exceeded. Appropriate rates of cutting can be further determined through the watershed analysis procedure and the cumulative effects assessment portion. Also see response to LMR-34.

LMR-10

Correct, hydrologic impacts are not directly addressed through the Draft HCP/SYP. The disturbance index is intended to minimize impacts to the natural flooding regime (refer to response to LMR-6).

LMR-11

Cumulative impacts on flooding are addressed through the disturbance index (see responses to LMR-2 and LMR-6). For a description of the disturbance index, please refer to the Final EIS/EIR Appendix P. Additionally, a distinct cumulative effects assessment is a required variation of the watershed analysis process. The new process used during watershed analysis shall include, but is not limited to, the information which has been developed as part of the disturbance index assessments done prior to completion of the watershed analysis. Through watershed analysis and adaptive management, appropriate rates of harvest can be determined.

Additional protections for Class III watercourses and impacts on downstream flooding are discussed in the response to LMR-2.

LMR-12

Thank you for your comments and analysis. The final Federal Aquatic Strategy of the HCP presented in Appendix P of the Final EIS/EIR addresses landslide risk using a comprehensive mass wasting avoidance strategy and watershed analysis. The mass wasting avoidance strategy was refined to prevent and reduce mass wasting related to land management activities. One of the major features of the mass wasting avoidance strategy is that, prior to watershed analysis, there will be no harvest in mass wasting areas of concern, which are defined as areas of extreme mass wasting hazard, very high mass wasting hazard, high mass wasting hazard, inner gorges, headwall swales, and unstable areas, including those within the Riparian Management Zones on Class I, II, and III watercourses. In addition, no new road construction can take place in the mass wasting areas of concern prior to watershed analysis unless PALCO provides detailed information on the mass wasting hazards of concern in the areas where roads may be constructed and provides a geologic analysis of the risk of hillslope failure that could be caused by the proposed new construction and reconstruction.

The federal wildlife agencies will make the final determination of whether all or a subset of the proposed road construction or reconstruction will be permitted across the mass wasting areas of concern. The watershed analysis process has also been strengthened and is explained in detail in the final Aquatic Strategy of the HCP. Final prescriptions will be established by the wildlife agencies. With regard to using the mass wasting watershed analysis module, the federal agencies will provide a set of criteria for determining whether mass wasting events are to be considered "significant" for aquatic resources. In addition, the THPs will be reviewed by the wildlife agencies to address more site-specific mass wasting areas of concern.

LMR-13

Please refer to the response from California Department of Forestry and Fire Protection (responses for pg.12 par. 5 (a), pg.12 par. 5 (b), pg.12 par. 5 (c), pg.12 par. 6 to pg. 13, par. 1).

LMR-14

Guidelines for road stormproofing and new road construction state that "road drainage structures and facilities shall be spaced at intervals such that flow originating from the road surface and ditch does not create a gully or sediment plume that connects with the channel network." Additionally, permanent roads through Riparian Management Zones shall be treated and maintained with rock, chip-seal or pavement. Restrictions on wet weather road use are expected to further decrease the amount of fine sediment delivered to the channel network.

Additional protections for Class III channels are discussed in responses to LMR-2 and LMR-4. These additional protections are intended to minimize the delivery of fine sediments to the channel network.

LMR-15

Thank you for your comments. The federal agencies believe the mass wasting avoidance strategy presented in the final Federal Aquatic Strategy of the HCP, which is presented in Appendix P of the Final EIS/EIR, addresses the comment's major points concerning mass wasting events that occurred in Bear Creek. In addition to implementing the major components of the strategy mentioned in the response to LMR-12, the wildlife agencies and PALCO will jointly establish a scientific panel to evaluate the definitions of high, very high, and extreme mass wasting areas of concern. The panel may modify the definitions, and the high, very high, and extreme mass wasting areas of concern will be re-delineated in accordance with any modifications. Furthermore, the federal agencies, in consultation with state agencies, will provide a set of criteria for determining whether mass wasting events are to be considered "significant" for aquatic resources. Those determinations will be used in the mass wasting watershed analysis module. Another aspect of the strategy is that mass wasting characterizations will be made by the California Department of Mines and Geology (CDMG) or a qualified professional geologist, including but not limited to certified engineering geologists licensed by the State of California. This does not preclude evaluation by professional geologists from universities and federal agencies.

LMR-16

Thank you for your comments. See response to comment CAF-3 for more information. The agencies do not believe that stormproofing is a panacea for road-related mass wasting and sediment delivery. However, it will reduce road-related sediment delivery to watercourses. As part of the final Federal Aquatic Strategy for the HCP presented in Appendix P of the Final EIS/EIR, stormproofing has been strengthened and expedited on PALCO lands to provide a lower risk of road-related failures. The following highlights of the strategy address your concerns:

- All road inventories will be completed within 5 years as part of watershed analysis or within 5 years of the planned stormproofing.
- All high and medium risk sites will be stormproofed or properly closed within 5 years of completion of the assessments, with all stormproofing completed within 20 years of the issuance of the incidental take permit.
- Stormproofing will be completed on 750 miles within the first decade and 750 miles in the second decade. At least 75 miles of existing road will be stormproofed, closed, or decommissioned each year.
- Stormproofing, closing, and decommissioning will follow standards in Weaver and Hagans (1994).
- To the extent feasible given logistics and the cost of moving equipment, PALCO will stormproof the worst sites (i.e. those most likely to fail or deliver the greatest volume of sediment to streams) in the first 10-year period.

Specific guidelines for the rainy season are also addressed in the Aquatic Strategy. In addition, all THP-related roads and landings shall be stormproofed following the standards of Weaver and Hagans (1994). This strategy will result in sufficient sediment reduction to offset sediment production from current projects. The requirement remains in effect until the roads assessment corrective actions on high and medium risk sites has been completed on each planning watershed, or until a completed watershed analysis indicates that sediment is no longer causing an adverse effect on the aquatic environment.

LMR-17

The range of prescriptions for buffer widths does not include additional protections for mass wasting areas of concern and surface erosion. The range of buffer widths may exceed the maximum limits if mass wasting or surface erosion is identified as potential impact mechanisms.

Maximum prescriptions for mass wasting areas of concern can include exclusion of all harvest and road building.

LMR-18

Comment noted. In response to public comments, PALCO has agreed to a study designed by an independent party jointly selected by PALCO and the agencies to address questions regarding Class III input of sediment and large wood and the effectiveness of different prescriptions. See response to LMR-2 for modifications to Class III protections.

The agencies agree that surface erosion from seasonal, unrocked roads is a problem. The mitigation measures for road surface erosion are intended to minimize road-related surface erosion. To address this, PALCO will be storm-proofing 750 miles of road per decade. As part of this, road drainage structures and facilities shall be spaced at intervals such that flow originating from the road surface does not connect to the channel network (note that this includes Class III channels). Further, roads though RMZs will be treated and maintained with rock, chip seal, or pavement. This includes watercourse crossings and approaches.

Additionally, all use of non-paved roads shall cease during periods when precipitation is sufficient to generate overland flow off the road or capable of leaving the road. Once road use has ceased due to forgoing conditions, use shall not resume until and unless the road surface is dry. A dry road is that which moisture is less than or equal to that found during normal watering (dust abatement) treatments or light rain, and which is not rutting or pumping fines, causing a visible increase in turbidity in a drainage facility or road surface, any which drain directly to Class I, II, or III watercourses. This provision shall be applied according to a rule of reasonableness, and shall not prohibit, for example, use of a small segment of wet road of an otherwise dry road. If any permitted use results in damage that will likely cause related sediment reaching a watercourse, the damage will be repaired within 24 hours after the initial damage occurs.

LMR-19

See responses to comments LMR-15, DRM-25, and DJK-17. The agencies share your concerns. The cumulative effects/disturbance index is also addressed in the final Federal Aquatic Strategy of the HCP, presented in Appendix P of the Final EIS/EIR. The disturbance index will be calculated at the hydrologic unit (HU) scale and modified to account for all roads, distinct from harvest activities. It will include in the calculation all roads used within the last 10 years, account for all mass wasting events distinct from other activities, and calculate ratings for the entire ownership at the HU scale within three months of the issuance of the incidental take permit. This information will be submitted to the agencies in a report, with the disturbance index and support calculations immediately following each planning watershed calculation. The upper limit of the disturbance index is set at 20 percent. The company will refrain from different management activities described in the final Aquatic Strategy if the calculated index is at or above 20 percent. If the index is below 20 percent, no activities will be conducted that will increase the index to more than the 20 percent upper limit.

LMR-20

See response to comment RN-6. We have noted you opinion, but also note that your comment cites no studies and offers no support for the contention that redwood ecosystems converted to Douglas-Fir dominated systems have a higher susceptibility to mass wasting. The agencies believe that the final Aquatic Strategy of the HCP will address mass wasting hazards on the entire landscape. Many areas of the landscape will not be harvested. These include no-harvest buffers of the RMZs, marbled murrelet conservation areas, and mass wasting concern areas mentioned in response to comment LMR-12.

LMR-21

Winter road use and construction was addressed as a concern in the Draft EIS/EIR, and winter road construction was considered to be a significant effect (p. 3.4-46). The aquatic conservation plan of the Final HCP, presented in Appendix P of the Final EIS/EIR, addresses winter (wet weather) road construction. Winter road construction and road reconstruction are not allowed during the wet weather period (October 15 to June 1) unless numerous conditions are met (See Aquatic Strategy). The implementation of these measures would result in a less than significant effect on water quality and its beneficial uses.

LMR-22

Sediment delivery from Class III watercourses is discussed in the responses to LMR-2 and LMR-4.

LMR-23

Additional streamside protections to minimize delivery of fine sediment from adjacent hillslopes are addressed in responses to LMR-2 and LMR-4.

LMR-24

The commentor has indicated that the Draft HCP/SYP lacks sufficient controls for road-surface erosion, and corresponding potential impacts of high levels of chronic turbidity on salmonids. Based on comments on the draft HCP/SYP and the draft EIS/EIR, significant revisions have been made to the aquatic portions of the HCP/SYP. These revisions are incorporated into the Final EIS/EIR as Appendix P. Encompassed in these revisions are specific additional measures and prescriptions for buffers and sediment filtration zones on all classes of streams (i.e., I, II, and III), road construction and reconstruction, road maintenance, road inspections, wet weather operations, mass wasting avoidance, and surface erosion. These additional

measures are focused on implementing specific controls that will reduce effects of road-surface erosion to a level of less than significant.

Additional protections for Class III channels are discussed in the responses to LMR-2 and LMR-4. These additional protections are intended to minimize the delivery of fine sediments to the channel network.

LMR-25

The mass wasting avoidance strategy is not intended to identify the location of all possible landslide hazard areas. It is intended to serve as an interim management tool until watershed analysis can refine the locations of mass wasting hazard. The Bear Creek data suggesting "that 12 percent of the slides were associated with planar slopes and 12 percent with breaks in slope" is the type of result watershed analysis is tended to produce. Appropriate silvicultural measures can be implemented in these hazard areas.

LMR-26

The watershed analysis procedure is intended to identify areas prone to mass wasting and provide appropriate silvicultural prescriptions, if any, for those areas. The process is outlined in the Final EIS/EIR, Section 3.6

Rate of cutting may be restrained through the Disturbance Index approach discussed in response to LMR-6.

LMR-27

Modifications to Class III watercourses are discussed in the response to LMR-2. These additional measures are expected to reduce delivery of fine sediment to the channel network.

Please refer to the response to LMR-18 for wet weather use restrictions.

The Final HCP/SYP provides details of a third party entity to monitor implementation of the HCP ("HCP Monitor").

See response to BRC-1 and BRC-2

LMR-28

In watersheds where PALCO owns a major portion of the land, measures included in the HCP/SUP would have more direct effects than in watersheds PALCO holds a very small ownership percentage. All actions in the ESU (including PALCO's actions and others) will be considered during development of the recovery plan for coho salmon.

Reductions in fine sediment delivery are expected due to road storm-proofing efforts, increased protection along Class III watercourses, and adherence to the mass wasting strategy outlined in the Final HCP/SYP. Additionally, monitoring efforts will affect watershed-specific modifications in management regimes to reverse trends that lead away from properly functioning habitat conditions.

The number of stream channels affected by debris flows is discussed in the response to LMR-2.

Maintenance or enhancement of large woody debris is discussed in the response to LMR-4.

LMR-29

See responses to comments LMR-24 and LMR-28. Additional mitigation measures in response to public comments and permit issuance criteria as outlined in the Final HCP/SYP are expected to reduce impacts to downstream habitats through time.

LMR-30

The watershed analysis process as discussed in Section 3.6 of the Final EIS/EIR is expected to reduce management-related landsliding. Both the mass wasting strategy and additional protections along Class III watercourses (see response to LMR-2) are expected to reduce the frequency of debris flows. Delivery of fine sediments to the channel network is expected as a result of the road storm-proofing protocols, increased protection along Class III watercourses, and reduced landslide frequency.

LMR-31

Alteration of flood frequency due to timber harvest will be addressed through the watershed analysis process and the disturbance index (see responses to LMR-5 and LMR-6). Additional mitigation measures due to public comment and permit issuance criteria, and discussed in the Final HCP/SYP, are expected to reduce the rate of sediment inputs to the channel network.

LMR-32

Additional mitigation measures in response to public comments and permit issuance criteria as outlined in the Final HCP/SYP are expected to reduce impacts to downstream habitats through time.

LMR-33

Trend monitoring alone is not an appropriate tool to evaluate the responses of watersheds and streams to specific management activities. With oversight of the agencies through annual reviews and the THP review process, PALCO will use the results of trend monitoring as part of their cumulative effects analyses in watershed analysis. PALCO will in turn, where appropriate, effect watershed-specific modifications in management regimes to reverse trends that lead away from properly functioning aquatic habitat conditions through the watershed analysis prescription process or adaptive management.

LMR-34

Additional mitigation measures to reduce hydrologic changes are discussed in the responses to LMR-2 and LMR-6.

The agencies are unaware of any procedures for cumulative effects assessment. However, the information provided in your review will be considered in future cumulative effects assessments. A distinct cumulative effects assessment is a required variation of the watershed analysis process. The new process used during watershed analysis shall include, but is not limited to, the information that has been developed as part of the disturbance index assessments done prior to completion of the watershed analysis.

The watershed analysis process shall be open for public comment. PALCO will present to the public what the company will be doing with respect to each watershed analysis. The goal of this interaction is to obtain public input on problems and priorities. Members of the public that have been technically trained may also participate in the technical analysis. Upon completion of each watershed analysis, PALCO will also present the results of the watershed analysis and justifications of methodologies and prescriptions.

Your comments on the limitations of the disturbance index are noted. The disturbance index is not intended to function as a stand-alone tool for assessing watershed cumulative effects. Rather, it is intended to provide information for the watershed analysis process.

Modifications in the scale of analysis are discussed in the responses to DRM-25 and DJK-17.

LMR-35

Comments noted. Since watershed analysis is performed throughout the ownership, data in the magnitude of impacts and rates of recovery will be collected and sensitivity of watersheds to these impacts will be assessed.

Modifications to the assessment scale of the disturbance index are discussed in the responses to DRM-25 and DJK-17.

LMR-36

See response to SF-18 for extinction of coho salmon within the ESU.

See response to LRM-34 for cumulative effects assessments.

LMR-37

The Disturbance Index (DI), watershed analysis and monitoring program are intended to evaluate and address cumulative effects.

Potential effects of the HCP/SYP were discussed in the Draft EIS/EIR.

LP-1

The Draft EIS/EIR analyzes a full range of alternatives with respect to management of PALCO lands. Most of the individual best management practices enumerated in this comment are within the decision space provided by those alternatives or are similar to those addressed in the proposed action/proposed project. As indicated in the Draft EIS/EIR analysis, the mitigation measures in the proposed action/proposed project, with additional mitigation based on public comments such as this, would maintain beneficial uses of water.

LP-2

The delineation of hardwood habitat in the GIS database of the HCP is conservative. This category primarily includes readily identifiable, pure stands of tanoak and madrone. In reality, there is a much larger hardwood component on the landscape, particularly as it relates to the habitat needs of the dusky-footed woodrat, which is found in abundance in shrub/pole-timber habitats of northwestern California (Sukai and Noon, 1993). Even conifer regrowth areas on the ownership have a large amount of snowbrush, tanoak, and maple comprising the understory (refer to the Draft HCP, II-M-page 3). The hardwood component of these stands is not readily measurable on the GIS, but they are not expected to be limited in the landscape. Early seral habitats will continue to be maintained through timber harvest. PALCO's HCP does include hardwoods as part of their snag retention guidelines. However, there is currently no research that shows to what degree the woodrat is dependent on the hardwood component of its habitat. The Draft EIS/EIR has been expanded to include more information of the habitat needs of the woodrat and the spatial relationship between woodrat-producing habitat and spotted owl nesting habitat.

Please note that woodrats are associated with early seral areas. All alternatives except Alternative 3 would provide abundant habitat for woodrats.

LSA-1

The wildlife agencies believe that uncertainty regarding implementation has been addressed in the revised HCP and Implementing Agreement

LSA-2

The agencies believe that the definition of late seral forest (and late successional forest as described in the Draft EIS/EIR) are adequate for the analysis of impacts of the proposed HCP/SYP. The Draft EIS/EIR clearly defines and describes both late seral and old growth forest.

LSA-3

The agencies believe that the hardwood forest component on the property is underestimated by the vegetation data used in the Draft EIS/EIR and will not be limited on the landscape. Hardwood habitat is expected to remain abundant along riparian areas and in recent harvest units.

LSA-4

The agencies believe that the negative impacts of the proposed HCP on LSH, as described in Sections 3.9 and 3.10 of the Draft EIS/EIR, are minimized and mitigated by the proposed measures.

LSA-5

Vaux's Swift, pileated woodpecker and purple martin are no longer on the list of covered species.

LSA-6

The FWS has increased the stringency of the monitoring requirements and proposed that PALCO work with a scientific advisory panel to plan and review surveys.

LSA-7

Recommendations noted. The wildlife agencies utilized most, if not all of the resources identified here. It is not clear what information the commentor used to determine whether local biologists were severely underutilized.

LSA-8

Additional species are addressed in the Draft EIS/EIR.

LSA-9

See response LSA-5. Humboldt marten is no longer proposed for coverage. The basis for concluding that there is no possibility of retaining snags over 30" being preserved is not accurate. It is not clear how downed logs could be left where they do not exist unless trees are cut expressly for that purpose.

LSA-10

The list of covered species has been substantially reduced, in part due to similar concerns by the wildlife agencies.

LSA-11

The agencies have proposed that PALCO work with a scientific advisory panel to help coordinate surveys and monitoring.

LSA-12 through LSA-29

This species has been removed from the list of covered species in the Final HCP.

LSA-30

The agencies are proposing additional monitoring measures to ensure the effectiveness of mitigation.

LSA-31

Considering the very few detections of Willow Flycatcher in the north coast region it is unlikely that a significant undiscovered population exists on PALCO's ownership. Without specific recommendations by the commentor, it is impossible to respond to the remainder of this comment.

LSA-32

The agencies believe that the best available scientific evidence was incorporated into the EIS/EIR.

LSA-33

See above responses. The agencies believe that the impacts of the proposed HCP on these species were adequately disclosed in the EIS/EIR.

LSA-34

See responses to LA-5 and LSA-11.

LSA-35

The agencies believe that cumulative effects are adequately disclosed in the EIS/EIR. Regulatory decisions, if any, based on these effects will be made in the federal and state biological opinions and the final Record of Decision.

LSA-36

The agencies agree that without implementation of additional monitoring measures, the Draft HCP monitoring plan is deficient.

LSA-37 through LSA 42

This species has been removed from the list of covered species in the Final HCP.

ME-1

Available information from published sources, aerial photographs, public comments, and a variety of site visits were considered during evaluation of the Draft HCP/SYP presented in the Draft EIS/EIR. Additionally, public comments on these draft documents are also being reviewed.

ME-2

See responses to LMR-12, LMR-15, CAF-5 and CAG-52.

ME-3

See responses to LMR-12, LMR-15, LMR-19, DJK-17, DRM-25 and DRM-36.

ME-4

The Washington State watershed analysis procedure is widely recognized as the best analytic tool for watershed assessments and is discussed in the Draft EIS/EIR in Section 3.6, page 3.6-34. The agencies shall review the watershed analysis and shall establish the prescriptions for implementation upon the completion

of a watershed analysis. Peer review is required if any PALCO or agency member of the watershed analysis team disagrees with the prescriptions recommended by the analysis team.

ME-5

Roads were evaluated in sections 3.4, 3.6, and 3.8 of the Draft EIS/EIR. Although reduction in road numbers does reduce the risk of adverse effects, that is only one possible mitigation measure. The EIS/EIR evaluated other methods, as indicated in the various alternatives, and the agencies consider these appropriate. See responses to III-RF-3 and DJK-17.

ME-6

See response to BRC-1, BRC-2, and ALA-135.

ME-7

The Draft EIS/EIR considered all existing or baseline conditions in its analysis of the effectiveness of various mitigations in reducing the effects of logging. In addition, when determining watershed specific mitigations, the watershed analysis procedure also considers baseline conditions and an evaluation of the factors that resulted in degraded conditions. Weaver and Hagans' (1994) approach generally considers the cost-effectiveness of specific sediment reduction measures, and overall the agencies consider this method as appropriate. With regard to restoration activities, please refer to responses FS-1 and FS-3.

ME-8

Monitoring and adaptive management issues are considered further in the Final EIS/EIR (Section 2.9) and the implementation agreement.

ME-9

The measures that comprise the Draft HCP/SYP are both prescriptive and performance-based. The combination of both approaches holds better promise for success than use of the one or the other alone. For example, the Draft HCP/SYP prescribes measures to be implemented in riparian management zones to reestablish or maintain an appropriate potential for large woody debris recruitment to streams. The implementation of the components of this prescription (RMZ width, basal area retention, permanent retention of large tree component, and others) will be monitored for compliance. In addition, the agencies have established the goal for the HCP/SYP that quantities and sizes of in-stream LWD will achieve the criteria described in the aquatic properly functioning conditions matrix (presented in Appendix K of the Draft EIS/EIR). This performance standard is in the plan to supplement its prescriptions, to help ensure that even correctly implemented prescriptions are having the desired results.

The commentator calls for unambiguous terms for prescriptions. We agree and the Final HCP/SYP will present language and procedures that are unambiguous. We disagree, however, that the same criteria for habitat conditions should be applied everywhere. While doing so would simplify monitoring and enforcement of the terms of the plan, what constitutes properly functioning habitat conditions varies from place to place, depending on differences in stream size, gradient, temperature regimes, soils, the aquatic resources to be protected and other factors. The watershed analysis process addresses watershed-specific conditions when prescriptions and habitat indicators are developed.

We agree with the recommendation that prescriptions at least initially are "conservative" but subject to revision. We agree with the commentator's recommendations limiting timber operations that have been documented to present risk of sediment effects. The Final HCP/SYP will have provisions that initially prohibit timber operations on slopes prone to mass wasting and along Class III watercourses until

completion of watershed analysis. The watershed analysis process, however, can actually lead to more conservative prescriptions than what will be included in the Final HCP/SYP.

The agencies have the role of deciding what are "feasible mitigations," not PALCO. For example, Forest Practice Rules' definition of "feasible" found under Title 14 California Code of Regulations § 895.1 is clear that economic considerations alone do not define what is "feasible."

ME-10

If PALCO manages newly acquired lands under an issued ITP and an approved SYP, then that activity is lawful. Long-term management goals almost always change when timber lands ownership changes, because the managed land base changes. The Draft EIS/EIR specifically analyzes the effects of PALCO's purchase of up to 25,000 acres of additional lands within one mile of, or within, its current property boundary. The language associated with that analysis specifically excludes extension of the permit parameters to newly purchased lands that contain old-growth timber (see Section 3.20 of the Draft EIS/EIR). Consequently, the agencies do not agree that the effects inferred in this comment will occur. In particular, 25,000 acres constitutes only a small percentage of the industrial timberland in Humboldt County (see Table 3.6-8 in the Draft EIS/EIR).

ME-11

With respect to refugia, see responses to CAF. With respect to late-seral definitions, see response to RN-1.

ME-12

Detailed habitat and water quality parameters are presented in the Draft EIS/EIR. Effectiveness and compliance monitoring plans have been revised based on agency and public comments. Please see Appendix P in the Final EIS/EIR. In addition, see responses to CAG-48, DRM-11, and FS-21,

ME-13

Alternatives 3 and 4 include protection and/or acquisition of the unentered old growth of the Mattole area.

Any purchase of lands under AB 1986 in the Mattole watershed would occur several years after implementation of the proposed HCP/SYP and would be dependent upon adequate funds remaining. Currently, there is no means of knowing if such funds would be available at that time. More importantly, acquisition of land authorized by the California legislature does not require CEQA review and could go forward at any time a purchase agreement is reached.

MF-1

Refer to Appendix N of the Draft EIS/EIR for detailed analysis and discussion of the use of residual old growth by murrelets.

MF-2

Please refer to the revised NSO Conservation Plan in Appendix P. Relative to barred owls, there is evidence that barred owls occupy a wider ecological niche, and therefore may have a competitive advantage over spotted owls (Dark et al., 1998). They do appear to be expanding their range into northern California in corresponding areas that have had significant levels of timber harvest in recent decades. Further information has been included in the Final EIS/EIR pertaining to the potential impacts of barred owls on spotted owl populations on PALCO land.

MF-3

The effects of the RMZs associated with the proposed action/proposed project are analyzed in sections 3.4, 3.7, and 3.8 of the Draft EIS/EIR with respect to shade and siltation. These RMZs are considered to provide moderate-to-high levels of protection. With respect to PALCO's compliance, see ALA-135.

MF-4

Geology and mass wasting issues are considered in sections 3.5 and 3.6. Also, see the response to C-15**.** The author appears to have misunderstood the role of the agencies. The comment is incorrect in stating that there would be no oversight by the agencies. Agencies will in fact provide review and approval of all prescriptions and can have other geologists review the information.

MF-5

See response to BRC-1 and BRC-2.

MF-6

Comment noted.

MM-1

The observations and opinions of individuals who have directly seen the types of responses to management activities described in the comment will help to inform those charged with developing watershed-specific prescriptions through the watershed analysis process. Refer to the responses to CAG-44 and CAG-54.

MM-2

Invasive plants such as Himalayan blackberry and pampas grass are non-native plants. Removing them improves natural plant diversity because these invasive plants compete with native plants, including tree seedlings. Rare plants would be protected by mitigation measures that have been added to the Final EIS (Section 3.9.5.1).

MRC-1

At the time the Draft EIS/EIR was released, MAXXAM and PALCO had not indicated whether they would accept the conditions of AB 1986. The issue is addressed in the Final EIS/EIR.

MRC-2

As specifically noted in Section 2.4.4, the Headwaters Forest Stewardship Plan was considered in Alternative 3. Additionally, as noted in Section 2.3, the range of the alternatives discussed in the Draft EIS/EIR establish a decision space within which the decisions makers can include any component of the different alternatives.

MRC-3

If a permit is issued, the same protections would be applied to the existing PALCO ownership in the Mattole watershed. Under the additional lands analyzed in the Draft EIS/EIR, Section 3.20, PALCO could add up to 25,000 acres of land as long as it was either in-holdings or within their existing boundaries of within one mile of PALCO's existing boundaries and did not include any other restrictions. These measures are considered to be as effective in the Mattole as in other watersheds in the area.

MRC-4

The assumptions in this comment are not necessarily true. Other landowners may well have fewer restrictions than PALCO under the proposed HCP/SYP. Consequently, PALCO might not be able to harvest as much as do current landowners. The agencies disagree with the comment that PALCO's finances determine the business success of other landowners. Those landowners will either be successful or unsuccessful on their own terms.

MRC-5

See response to BRC-1 and BRC-2.

MRC-6

Comment noted.

MRC-7

The Draft EIS/EIR considers the effects with respect to old growth and endangered species across the entire PALCO landscape and also considers the effects with respect to Humboldt County and adjacent areas. Consequently, these effects are disclosed.

MRC-8

With respect to PALCO violations, see response to BRC-1 and BRC-2. An initial monitoring plan is presented in Section 2.9 of the Draft EIS/EIR, and the HCP contains details of the framework monitoring plan. With respect to the other issues in this comment, the effects on various species and habitat are addressed throughout the Draft EIS/EIR.

MRC-9

The need for large no-harvest zones is not supported in this comment. The Draft EIS/EIR contains extensive discussion of the various RMZs and their effects. Class III streams are also addressed in the Draft EIS/EIR and are discussed in more detail in the Final EIS/EIR.

MRC-10

Differences in slope, soil type, and geologic activity and mass wasting effects are considered in the Draft EIS/EIR. With respect to Leslie Reid's comments, see response to LMR. Tree rot decay is considered in the Draft EIS/EIR. Approval of THPs will involve an interagency team.

MRC-11

As noted, PALCO operations in the Mattole must operate under a zero net discharge, which also considers roads. Proposed mitigation for effects of road construction is addressed in the Draft EIS/EIR in Section 3.6.

MRC-12

Bank stability effects associated with RMZ management are discussed in the Draft EIS/EIR, sections 3.4, 3.6, and 3.7. The agencies do not agree that the indicated no-cut zones (even without the provisions of AB 1986) would cause significant effects on bank stability.

MRC-13

The agencies disagree that the riparian buffers are inadequate. The buffers were analyzed in detail in the Draft EIS/EIR. Regarding watershed analysis, completion of such analysis is not necessary prior to issuance

of an incidental take permit or approval of a sustained yield plan. See response to GEC-1. The preliminary monitoring was presented in Section 2.9 of the Draft EIS/EIR. As noted there, a monitoring plan is not required at the draft stage but was presented to provide information on what types of monitoring would take place. The Final EIS/EIR has a more detailed monitoring plan. The watershed analyses will be reviewed by federal and state agency personnel who will have the final determination on prescriptions.

MRC-14

The agencies consider that the Draft EIS/EIR and the Final EIS/EIR have adequately addressed the effects of PALCO operations on the aquatic environment. As noted in that document, the intent is to provide for a properly functioning aquatic system over the term of the ITP, and the conclusions in the EIS/EIR are that the applied mitigation measures are likely to do so.

MRC-15

The indicated streams are considered to be fish-bearing and would receive the same prescriptions under the proposed HCP/SYP or any of the other alternatives whether or not coho salmon actually occur in the streams.

MRC-16

Cumulative effects are considered for all the basins with PALCO ownership in the Draft EIS/EIR, including the Mattole River watershed, of which PALCO owns approximately 7.5 percent. The Draft EIS/EIR contains extensive discussions of current conditions, including the effects of over 100 years of timber harvest (e.g., sections 3.16.14 and 3.7.4.2). The effects of the various RMZs on stream temperature are extensively discussed in sections 3.4, 3.7, and 3.8. The commentor provides no information that would indicate that the proposed RMZs for the proposed action/proposed project would be fatal for coho salmon. All the analysis in the Draft EIS/EIR indicates that this statement is not correct.

MRC-17

With respect to comments about recovery plans, see responses to ALA-10, ALA-50, ALA-51, and ALA-99. With respect to mass wasting and sediment delivery, these issues were evaluated in the Draft EIS/EIR, including the existing or baseline conditions of all watersheds including the North Fork of the Mattole River. The conclusion of the Draft EIS/EIR is that the mitigation measures contained in the proposed HCP/SYP (e.g., existing road improvement, avoiding timber harvest steep slopes) would reduce the likelihood of mass wasting-related coarse and fine sediment influxes to the river systems, allowing for the attainment of properly functioning aquatic systems over the life of the ITP. The Draft EIS/EIR considered the recovery times of stream systems affected by coarse sediment influxes.

MRC-18

This species has been removed from the list of covered species in the Final HCP.

MRC-19

The Draft EIS/EIR, Table 3.4-4, lists the Mattole as sediment and temperature impaired.

MRC-20

Comment noted.

MRC-21

See response to ET-7

MRC-22

See responses to ET-8 and ET-11.

MRC-23

CDF is the lead agency under CEQA and the FPRs and has the responsibility for reviewing and approving THPs. Under an approved HCP and associated ITP, the full provisions of that plan would be required to be integrated into all PALCO THPs. Although the other state and federal agencies would be involved in the review of those THPs, CDF would still act as the lead agency under CEQA and FPRs and would ensure compliance with the terms of the HCP and ITP. CDF does not have the responsibility to ensure that state agencies have adequate funding to address their responsibilities. In addition, see response to ALA-8. With respect to potential changes in the standards for timber operations, these issues should be brought before the Board of Forestry, which has authority in these matters.

MRC-24

See responses to comments by CAT.

MRC-25

See responses to C-2, C-28, and C-59.

MRC-26

PALCO has applied to CDFG for both an ITP under CESA and a streambed alteration agreement under Section 1603 of the California Fish and Game Code (Section 1603) for covered activities under the HCP. The application and approval processes for the ITP and streambed alteration agreement are separate. Under Section 1603, substantial diversions or obstructions of the natural flow or substantial changes to the bed, channel, or bank of any river, stream or lake in California are not unlawful if the applicant first notifies CDFG of the activities and if, in cases where the activities may substantially adversely affect an existing fish or wildlife resource, the applicant executes a streambed alteration agreement with CDFG. A streambed alteration agreement sets forth mutually acceptable measures for the protection of the fish and wildlife resources, in accordance with which the applicant agrees to conduct its activities. CDFG is considering covering some of the covered activities under the HCP that are subject to Section 1603 under a streambed alteration agreement. These activities are identified in Exhibit C of the streambed alteration agreement. In order to streamline the ITP and streambed alteration agreement processes, negotiations regarding measures to minimize, mitigate, and monitor the impacts of the covered activities under the ITP under CESA and the covered activities under the streambed alteration agreement under Section 1603 have been concurrent.

In addition, consistent with CESA and Section 1603, such measures have been coordinated and incorporated into the HCP. CDFG has determined that fish and wildlife resources can be protected from substantial adverse effects of these particular activities wherever they occur on PALCO's covered lands if they are conducted in accordance with the HCP's Operating Conservation Program and the standard measures set forth in the streambed alteration agreement. In accordance with the streambed alteration agreement, PALCO is required to give CDFG prior notice of commencement of any of the specific activities covered by the streambed alteration agreement, including, but not limited to, a description of type and scope of the activity, commencement and termination dates, a map of the work site, and a description of the applicable protective measures set forth in the streambed alteration agreement.

MRC- 27

With respect to the idea of a four-year decade, see response to C-32.

MRC-28

The new road construction was considered in the Draft EIS/EIR, and the agencies consider that with the road construction standards, road improvement program, and other mitigation measures in the proposed HCP/SYP, the overall effects are less than significant and will contribute toward a properly functioning aquatic system.

MRC-29

There is no "accurate" method for quantifying cumulative watershed impacts of proposed activities. The disturbance index provides a means of tracking project activities over space and time. Calculation of the disturbance index has been revised in the Final HCP/SYP to reduce the assessment areas from the proposed Watershed Assessment Areas to smaller hydrologic units and by requiring separate calculation for impacts of roads that are used more than once every ten years. Overall performance of the disturbance index will be evaluated as part of required compliance and effectiveness monitoring.

MRC-30

Table 9 presents the 10-year average of inventory, growth, and harvest, not the beginning of the period condition. This is why growth cannot be added to inventory and harvest subtracted to obtain the next decade's inventory.

MRC- 31

See response to MRC-27.

MWSSG-1

These issues are identified and discussed in the Draft EIS/EIR in sections 3.4, 3.5, 3.6, 3.7, and 3.8.

MWSSG-2 BL

The Draft EIS/EIR, Section 3.6, addresses landslide hazard mitigation. See response to comment LMR-12 for a description of the final mass wasting avoidance strategy. Further details are presented in the final Federal Aquatic Strategy in Appendix P of the Final EIS/EIR.

MWSSG-3

We concur with your point that clearcutting may be inappropriate on certain slopes. Based on public comments and FESA and CESA issuance criteria, additional mitigation measures have been added to the mass wasting avoidance strategy in the Final HCP/SYP, Final EIS/EIR to better protect these areas. The mass wasting avoidance strategy states that, prior to watershed analysis, there shall be no harvest on mass wasting areas of concern, defined as areas of extreme mass wasting hazard, very high mass wasting hazard, high mass wasting hazard, inner gorges, headwall swales, and unstable areas, including those within the Riparian Management zones on Class I, II and III watercourses. The watershed analysis process will further attempt to identify areas that are prone to mass wasting if disturbed by timber harvest and road construction. More detailed information on the mass wasting avoidance strategy is found in the Final EIS/EIR, Appendix P.

MWSSG-4

CDF is the lead agency under CEQA and the Forest Practices Act, and therefore makes the final decisions on THPs, SYPs, and EIRs that pertain to the harvest of timber products. CDF disagrees that PALCO has any "final authority" in making decisions regarding these projects. However, under the Forest Practice Rules, the choice of products for which to manage under the SYP is up to PALCO.

MWSSG-5

CDF disagrees that CDF staff and geologists are not accountable for their actions. Geologists that practice geology on state and private lands must be licensed as Registered Geologists or Certified Engineering Geologists. CDF inspectors must be licensed Registered Professional Foresters. Any misconduct of these professionals can be taken up with the licensing boards.

MWSSG-6

Comment noted. Refer to the responses to ALA-28 and CAG-54.

NADCE-1

Comments were noted. Current aquatic habitat conditions on PALCO lands are characterized in the EIS/EIR. The Forest Practices Rules as applied to PALCO lands have been supplemented with additional measures and prescriptions. These include AB1986 requirements and revision to the aquatic portions of the HCP (see Appendix P of the EIS). These additional measures and prescriptions are intended to further support establishment of properly functioning aquatic habitat conditions for coho salmon in areas affected by PALCO (see EIS/EIR Section 3.8). CDF disagrees that the current Forest Practice Rules would lead to watershed conditions as described in the comment. There have been problems with PALCO violating the Forest Practice Rules, but we don't have information that would necessarily link those violations with watershed conditions on the entire ownership. CDF does agree that many watersheds in PALCO's ownership have significant adverse cumulative effects caused by past impacts, and those are addressed in the Final EIS/EIR. Further, each THP will include mitigation measures from the HCP where they are relevant to issues in that THP.

NADCE-2

Comments noted. Please refer to the responses to ALA-28, CAG-44, IFR-9 and IFR-11.

NADCE-3

CDF notes and appreciates the detailed recommendations on how PALCO can improve its DI. CDF agrees that the DI as presented by PALCO in the draft HCP/SYP is not sufficient for cumulative effects analysis. The Final HCP/SYP (see Appendix P) requires PALCO to separately calculate the area of roads that are used more than once in 10 years, to add this to the DI calculated for harvesting activities, and to calculate the DI at the smaller, hydrologic unit scale.

The effects of geomorphic sensitivity, hillslope disturbance, road systems, risk ratings, instream practices, and watershed history need to be combined with past, present, and reasonably foreseeable future projects as part of overall cumulative impacts assessment that is required by CEQA and the Forest Practice Rules. An area-specific cumulative impacts assessment will be prepared for each THP. Also see response to ET-12.

NADCE-4

Comments noted. Regarding Class III watercourse protection, refer to the response to CAG-44. Class III watercourses, by definition, do not support aquatic life, including aquatic invertebrates. We agree with the

comment that sediment is important determinant of habitat conditions in all watercourses, and not only in Class I watercourses. We also concur that LWD plays important roles in all stream classes. The Final EIS/EIR and HCP/SYP provide for these LWD functions by prescribing "no-cut" buffers and minimal post-harvest basal areas distributed across a wide range of tree diameter classes. Refer to the response to CAG-54 for a summary of these measures.

The assertion that the proposed RMZs would be "uninhabitable" because of changes in the "climate" in the riparian habitat is not supported by information provided in the comment. Based on the literature cited in the comment, "edge effects," including changes in microclimate in RMZ, are possible after adjacent stands are clearcut. However, such changes would not likely eliminate habitat from these stands for the range of taxa listed in the comment. Note that the RMZ prescriptions in the Final EIS/EIR and HCP/SYP will substantially reduce the potential for these effects to occur within RMZs compared to what the drafts of these documents prescribed.

We do not agree with the premise that RMZs will be entered for harvest more frequently than upland stands. This apparently assumes that upland stands would not be subject to intermediate treatments, and would be entered once during each approximately 60-year rotation. The 20-year restriction applied to RMZs is a minimum. In most cases, RMZs would likely be entered concurrent with harvest of adjacent upland stands.

The commentor expressed the view that "…the less dense a riparian area is to begin with, the more it could be thinned in proportion to an area with higher basal area." The limit of 40 percent basal area reduction, however, would apply to all stands, regardless of pre-harvest basal area, with two important exceptions. First, no harvest could occur until at least 276 square feet per acre basal area occurs in the outer "selective entry band" of the RMZ. Second, this part of the RMZ would need to have at least 400 square feet per acre basal area for a full 40 percent reduction of basal area to occur and still retain the minimum required basal area of 240 square feet per acre. No basis is provided for the opinion that the prescription would create the incentive for PALCO to never allow riparian areas to exceed 500 square feet per acre of basal area. We do not agree that "…the only effective stream buffer portion will be the inner most band…offering little protection except for shade." Refer to response to CAG-54 for a summary of the RMZ measures in the Final EIS/EIR and HCP/SYP.

The comment regarding PALCO's effort of collecting species information is noted. The monitoring of riparian forest conditions and selected species will be conducted through approaches developed through the watershed analysis process. Refer to the response to CAG-48.

The RMZ prescriptions include elements functionally similar to those to which the commentor refers as being in the SNEP report, viz, fixed no-cut buffers and outer, variable-width buffers that change according to slope class. While "soil erodibility" was not explicitly included as one of the criteria for designing buffer widths, the measures that pertain to timber operations in mass wasting areas of concern and the watershed analysis process provide the means to mitigate for soil erosion, including, by adjusting buffer widths.

The Final EIS/EIR and HCP/SYP will prescribe "no-harvest zones" within the RMZs of all watercourses. These will remain as such unless the watershed analysis process calls for harvest within these zones. Refer to the response to CAG-54. Note that Figures 2, 2a and 4 illustrate the effects of referenced alternatives only. Alternative 1 could not be depicted because RMZ widths are variable. Alternative 3 calls for 170-foot-wide RMZs and 100-foot-wide RMZs for Class I and Class II watercourses and for Class III watercourses, respectively. For specific representations of Alternatives 1 and 3 as well as the others, refer to Sections 2.5.1, 2.5.4, and 3.7 and Figure 3.7-3a of the Draft EIS/EIR.

Sections 3.7 and 3.8 of the Draft EIS/EIR provide information on the composition of riparian stands along Class I and Class II watercourses. Table 3.7-8 provides a summary of information on riparian acres by seral stage and hydrologic unit throughout the PALCO ownership. Table 3.8-7 projects the estimated time for riparian stands and habitat conditions to reach fully functional conditions. Based on this information combined with basal area/age relationships reported in Linquist and Palley (1963), inferences can be made regarding the relative basal area found in riparian stands. A review of the distribution of seral stages corroborates the referenced statement in the Draft HCP/SYP regarding the current low stocking in riparian stands. We agree with the statement that “.....past logging has greatly reduced trees [i.e., basal area] in the riparian areas” compared to what existed before logging began near the turn of the century.

Comments regarding the reduction of old-growth forest are noted. Refer to the above response regarding the prohibition of logging in the “no-cut” zones.

We disagree with the opinion regarding the aquatic strategy of the Draft HCP/SYP as being “...a political, economic strategy rather than based on known science” and “...too complicated to be followed or monitored for compliance.” The Draft EIS/EIR presents the scientific basis of the alternatives considered for the plan, including Section 3.7. Also, refer to the response to GP-7. With regard to compliance monitoring, refer to the response to CAG-48. The HCP/SYP requires that watershed analysis be completed within 5 years of the issuance of the ITP. This process actually has already begun. Completing watershed analysis for the entire PALCO ownership within a shorter time frame than three years after the issuance of ITPs would be impracticable. Regardless of when the watershed analysis is completed, the pre-watershed analysis prescriptions described in the Final EIS/EIR and HCP/SYP provide sufficient protection to meet conservation objectives of the plan. The watershed analysis process will only improve the effectiveness of the protection measures of the plan by customizing them to the salient conditions in each watershed. We disagree with the statement "Little has been decided concerning an aquatic/riparian strategy."

NADCE-5

The commentor’s point has been noted. The plot used in Volume IV, Part D, Section 1, Figure 2 shows approximately 95 percent effectiveness for a 30 meter buffer. The plot also shows effectiveness increasing out to a buffer width of 100 meters.

NADCE-7

Grazing will not be covered under the incidental take permit because of a lack of information on the location, size and extent of the actions and impacts; lack of mitigation; and lack of commitment to mitigation. Grazing may be added to the permit at a later date through the amendment process, at which time the activity would be analyzed.

NADCE-8

Volume II, Section F of the Draft HCP/SYP (PALCO, 1998) describes the monitoring approaches and activities that PALCO and the California Department of Fish and Game have been implementing in recent years. These approaches, including the premise that representative reference streams with “pristine” and “undisturbed” conditions can be located and used as controls, will be reviewed by the agencies when hydrologic-unit specific monitoring programs are developed. We agree that the streams PALCO selected for this purpose may not be representative of many of the streams on PALCO land. Changes to the monitoring framework are found in the Final HCP/SYP (see Final EIS/EIR, Appendix P). Refer also to responses to CAG-25 and CAG-28.

NADCE-10

See responses to NADCE-1, CAG-3 and ET-12. The FPRs and provisions of the HCP/SYP require monitoring of the effectiveness of measures to mitigate significant impacts on watershed conditions. The Final HCP/SYP effectiveness monitoring (see Appendix P) has performance criteria that look for improvement and recovery of watersheds from current conditions.

NESN-1

Pending final review pursuant to sections 7 and 10 of the ESA, the Services believe that the HCP complies with the permit issuance criteria at section 10(a) of the ESA.

NESN-2

Public-Law 105-83 provides $250,000,000 for the acquisition of the Headwaters Forest, which comprises 7,500 acres of privately-owned land. According to the U.S. House of Representatives Report accompanying the legislation (H.R. 105-337), any "substantial expansion" of the amount of land being purchased must be specifically authorized by Congress. Any further purchases of PALCO land involving federal funds would have to first be approved by Congress, and therefore are not considered part of the current proposal.

NESN-3

The Services are aware of their federally mandated responsibilities to protect threatened and endangered species. As a result, the Services have undertaken a careful, studied approach to the granting of this ITP. A thorough review of the biological implications of the permit and the HCP have been undertaken, and public comments have been solicited and responses included in the final version of the EIS/EIR.

NESN-4

Because of the complexity of the undertaking presented by this transaction, and the delicate nature of the ecosystem that is impacted, the wildlife agencies ensured that public comment was solicited at several steps in the process. On December 27, 1996, a notice was published in the Federal Register (61 Fed.Reg. 68285) announcing the intent to prepare a joint EIS/EIR on action associated with the Headwaters Forest transaction, including issuance of incidental take permits under the FESA and inviting comments on the scope of the EIS/EIR. The Draft EIS/EIR, was made available for comment on October 2, 1998 (see 61 FR 53089). Moreover, on July 14, 1998, the Services announced the availability for public review and comment of applications for federal incidental take permits filed by PALCO under section 10(a) of the FESA. The Services also held four public hearings across California; specifically on October 27, 1998 in Los Angeles; on October 29, 1998 in Sacramento; on November 5, 1998 in Oakland; and on November 10, 1998 in Eureka. The documents were also made widely available to public, through various means including posting them on government websites and making them available at government office and libraries throughout the state of California. All comments received through this process have been considered and are reflected in these final documents. All efforts were made to assure that the process of issuing these permits be as transparent as possible to the public.

NESN-5

See response to SSC-3.

NESN-6

See response to SSC-7.

NESN-7

See responses to SS. In addition, the agencies consider the analyses in the Draft and Final EIS/EIR to be adequate to make an informed decision. With respect to recovery issues, see responses to ALA-10, ALA-50, ALA-51, and ALA-99.

NESN-8

This comment indicates that a Recovery Plan is needed for each permit species. See response to ALA-10 and ALA-50.

NESN-9

The Services consider the analysis and information provided in the Draft EIS/EIR and Final EIS/EIR to be adequate and acceptable methods to access biological impacts. It is not necessary to use every approach that exists in order to provide appropriate information. Though the referenced article may be a useful approach, dozens of similar articles could be referenced. Not using one particular approach does not mean that the approach used does not provide the necessary information.

NESN-10

The types of available information are presented on page 3-2 of the Draft EIS/EIR. The best available information was used, including data from PALCO and other sources. The information used is identified in the individual resource sections.

NESN-11

Other HCPs were included in the cumulative effects analysis which have been either approved or have been developed to the point where it is reasonably foreseeable to anticipate what conservation strategy might be implemented, thus allowing some assessment of environmental effects. The information and areas considered for cumulative effects analysis is presented in Section 3.2 and the cumulative effects analysis in the individual resource sections.

NN-1

In the discussion of the implementation of AB 1986, the potential acquisition of other lands is indicated. However, whether any funds would remain available after the possible purchase of the Owl Creek tract is unknown. If such funds are available at that time, and PALCO is a willing seller, such a transaction would be possible. However, purchase of lands authorized by the California legislature does not require evaluation in a EIR and that purchase could proceed at any time funding and agreement existed. Additionally, Alternative 4 includes analysis of a 63,000-acre area that includes the area to which this comment refers. As indicated in Section 2.3, the final decisions of the agencies may include components of different alternatives that are based on the analysis in the EIS/EIR.

NN-2

See response to NN-1, that this area is analyzed as part of Alternative 4. As noted in Section 2.3, however, the agencies cannot unilaterally impose some components of the alternatives on PALCO without PALCO's consent. The Reserve design indicated in Alternative 2 is the land PALCO is willing to dispose of as elected in the original September 1996 agreement.

NN-3

Section 3.17 briefly evaluates the recreational potential of the Headwaters Reserve. As noted in the description of reserve management under the description of Alternative 2 in Chapter 2, detailed reserve management is not being proposed or evaluated under this EIS/EIR. If the proposed agreement is implemented, a management plan will be developed. Public comment would be part of that NEPA/CEQA process and the detailed comments presented here would be useful at that time. Effects of the later developed management plan, such as any economic effects, will be evaluated at that time.

II-NN-1

The general components of this proposal are addressed in the Draft EIS/EIR under Alternatives 1 and 3.

NRI-1

The potential for sufficient recovery of coho stocks to support a revitalized fishing industry in northwestern California based on an HCP for approximately 211,000 acres is speculative, especially considering the myriad of other factors contributing to coho abundance which are beyond the scope of this project. Consequently, it was not analyzed in the Draft EIS/EIR.

PB 1 through PB-17

This species has been removed from the list of covered species in the Final HCP.

PC-1

See responses to ABF-8 and ABF-16

PC-2

See responses to ABF-8, ABF-9, and ABF-16

PC-3

See response to ABF-17

PC-4

The wildlife agencies agree that NSO population fluctuations cannot be modeled solely upon gross landscape scale habitat changes. Also see response to ABF-3, ABF-9 and ABF-11.

PC-5

Comment noted

PC-6

See responses to PC-8 and ABF-11

PC-7

The wildlife agencies agree that the PALCO NSO population is an important component in the recovery plan. The question of whether the PALCO NSO population should be treated as one, two, three or even four clusters is moot with respect to meeting issuance criteria for an incidental take permit.

PC-8

The current HCP anticipates that in the "worst-case", the number of activity sites may decline by almost one-third on the ownership. If that occurs, the density of activity sites on the PALCO ownership would be approximately equal to that in a study area near Willow Creek and about one-third greater than on the Simpson ownership. The wildlife agencies do not agree that this circumstance will jeopardize NSO in the coast range.

PC-9

For use at the beginning of the HCP, the classification system for NSO utilization of WHR types has been revised (see proposed HCP) and is relatively more conservative in assigning use by NSOs. As this comment suggests, this system may be modified in the future based upon data from this and other ownerships. Also see ABF-3.

PC-10

The HCP includes a substantial adaptive management component. Also see response to ABF-3 and ABF-22.

PC-11

The HCP has been modified to address the issues identified in this comment and other.

PC-12

This comment accurately describes a scenario which will likely occur at individual activity sites. However, if this occurred over most of the ownership, monitoring data would identify potential encroachment on management objectives which would then be responded to as described in the HCP.

PC-13

Management objectives are specific to NSOs. If barred owls contribute to a decline of NSO activity sites, management will be modified to improve conditions for NSOs. PALCO does not currently have any explicit management responsibility for barred owls under this HCP.

PC-14

See response to ABF-21.

PC-15

There is no requirement that PALCO use the same methods to manage for NSOs. The PALCO NSO HCP does not specifically select the "best" sites, for retention. It is possible that PALCO may decide to harvest some activity sites which currently provide very good habitat for NSOs. However, the HCP creates strong incentive to maintain the most productive activity sites, directing harvest, where it occurs, to those which are less productive. If PALCO does not follow this guidance, management objectives will not be met and more restrictive measures will result. An important distinction is that this plan will manage to maintain a population with certain demographic characteristics. Success is achieved when a certain population is maintained rather than by counting how much take occurs.

PC-16

See response to ABF-8 and ABF-16

PG-1 to PG-12

This species has been removed from the list of covered species in the Final HCP.

PH-1

Thank you for the extensive additional information regarding fish populations and habitat conditions in the plan area. The additional data will be used in future population assessments. The agencies agree that coho salmon populations are depressed from historic levels. Refer also to responses to PH-3 and PH-8.

PH-2

All existing populations of coho salmon (and any other salmonid species that potentially could be listed in the future, such as chinook salmon), both on PALCO lands and elsewhere in the ESU, will be important to any conservation and recovery efforts under ESA. It should be recognized that recovery efforts for coho salmon (which are the only salmonids on PALCO lands that are currently listed under ESA) will cover the entire ESU, and will not be focused solely on PALCO lands. Management actions on PALCO lands will be an important component of the recovery efforts.

As indicated in the comment, specific populations within the ESU that may be considered "unique" could represent important gene resources for these efforts. As part of the ESA listing of coho salmon in this ESU, a recovery plan that includes consideration of specific populations will be developed by the resource agencies.

PH-3

The listing under ESA clearly recognizes that coho salmon in this ESU are threatened and that measures are needed throughout the ESU for conservation and recovery of the species. Current or historic conditions or population levels that led to this listing are important to understand and consider. However, at this time, it is critical that measures be undertaken under ESA to reverse the current situation.

The mitigation measures or prescriptions described in the final HCP and EIS/EIR, Appendix P, are focused on landscape-level approaches that are intended to achieve over time properly functioning aquatic habitat conditions. These measures do not specifically identify any particular populations of coho salmon (e.g., Yager Creek, Van Duzen, or Elk River) or other salmonid species. For example, the HCP and EIS/EIR includes buffers for all Class I, II, and III streams on PALCO lands (except for the Headwaters area, where no harvest will occur) and not for any one particular stream or stream reach.

Similarly, mitigation measures for upslope activities such as road maintenance and construction would be implemented on a landscape level across PALCO lands. These measures would be modified based only on specific watershed analyses, which would incorporate more detailed characteristics of specific areas. The resource agencies believe that this landscape-level approach must be taken to provide protection throughout each watershed in all areas that directly affect aquatic habitat conditions.

The effects of disturbance are evaluated in the EIS/EIR in Sections 3.4 and 3.6. The measures in the HCP and EIS/EIR are intended to mitigate potential effects of disturbance to a level of less than significant. This will be accomplished through landscape-level mitigation requirements (e.g., prescribed buffers on Class I, II, and III streams; prescriptions on upslope activities) followed by more detailed watershed analyses, which will be used to identify critical areas of mass wasting or other potential problem sites and to address potential cumulative effects. The watershed analyses will then be used to formulate specific THPs that incorporate measures that mitigate effects of disturbance that could potentially affect aquatic habitat.

PH-4

The resource agencies agree that refugia are important areas to protect as part of recovery efforts. The prescriptions described in the EIS/EIR are designed to provide this protection in existing refugia areas on PALCO lands and to achieve over time properly functioning aquatic habitat conditions in areas where such conditions do not currently occur. Monitoring and adaptive management (see Section 3.8 of the EIS/EIR) are critical concepts for determining if conservation and recovery efforts for coho salmon in this ESU are effective in protecting the refugia areas and for determining if coho salmon populations from these areas are repopulating other areas not currently used because of poor habitat conditions (e.g., water temperature or sediment, as noted in 303(d) listings - see Section 1.0 of the EIS/EIR). PALCO lands are a small but important part of the overall northern California/southern Oregon ESU (see Section 3.8 of the EIS/EIR). The recovery plan for the ESU (required by ESA) will address areas of refugia, methods for preservation, and approaches that might be used to expand existing populations from these areas to other areas not currently used.

PH-5

The commentor states that "The PALCO HCP does not recognize the actual temperature needs for coho salmon and, therefore, does not deal honestly with how actions under the HCP will effect [SIC] this species." We disagree. The Draft HCP/SYP, Volume IV, Part D, Section 2.1, presents the habitat condition goals for the HCP. These goals in part reflect the targets presented in the aquatic properly functioning condition matrix, which was developed with input from state and federal agencies and is included under Section 6 of Volume IV, Part D. Targets for maximum water temperature and maximum weekly average temperature (MWAT) are provided in the matrix. In addition, the EIS/EIR addresses ranges of water temperature and their possible effects on salmonid species (see EIS/EIR Section 3.8).

With regard to the comment on disclosure of temperature data and changes in water temperature over time, the Draft HCP/SYP does disclose, in Volume II, Part F, stream temperature data collected by the California Department of Fish and Game and PALCO over recent years. Part H of the same volume presents summaries of temperature values for watershed assessment areas (WAAs) in their entireties. Contrary to what is stated, the Draft HCP/SYP does not contend that direct shading is the only mechanism to prevent temperature effects. While the discussion in Volume IV, Part D, Section 1.3.1.3. of the document does focus on the effects of shade reduction on water temperature, other mechanisms influenced by forest management, including channel width and depth and flow, are recognized as well. Further discussion of stream temperatures is in Section 3.8.2 of the Draft EIS/EIR and in this appendix, response to comment CAG-26.

As indicated above and as disclosed in Part H of Volume II of the Draft HCP/SYP, discussions of water temperature in the HCP are not limited to MWAT. We agree, however, that average MWAT values for entire WAAs are of limited utility in determining which streams or reaches are temperature-impaired. These averages, however, provide a "coarse filter" for identifying basins where temperature effects are manifest. The data from which these average values were derived will be combined with other data to further characterize conditions in hydrologic units (including in individual streams within these units where temperature effects occur) during the watershed analysis process. This in turn will lead to prescriptions intended to address temperature effects.

We agree with many of the comments presented under the heading "Assertions by the PALCO HCP with regard to water temperature compared to the other scientific literature and available data". Notwithstanding PALCO's opinions with regard to water temperature effects, the agencies have the role of establishing criteria for aquatic properly functioning conditions. We note that the aquatic properly

functioning condition matrix provides a target temperature range that falls below the value of "20 degrees C", the temperature that was presented in the Draft HCP/SYP.

PH-6

We agree with the comments regarding PALCO's method of categorizing and deriving MWAT. The agencies will continue to employ targets presented in the current draft of the aquatic properly functioning condition matrix when evaluating stream temperatures, until such time that the agencies revise them. In addition, information on both MWAT and peak temperature will be used in combination when evaluating stream temperature regimes. As stated in the matrix, "All indicators are interrelated, many are interdependent, and should be viewed together as a functioning system." We agree that employing MWAT alone could fail to detect actual temperature peaks that could be lethal to salmonids. Finally, NMFS regards MWAT as a "yellow flag" indicator of potential temperature problems. MWAT values less than 16.8 degrees C do not necessarily indicate that water temperatures overall are in properly functioning condition.

PH-7

Although the example provided in the comment may indicate that conditions during 1997 for Bear Creek have moved away from properly functioning aquatic water temperatures (compared to 1996), long-term monitoring is needed (e.g., 10 to 20 years) to achieve over time properly functioning conditions, at least in disturbed areas. The reason for this is that regrowth of riparian vegetation, establishment of pools that offer temperature refugia, and other factors require a much longer time period to reach background conditions compared to the short-term conditions that may have resulted in the example provided in the comment. Long-term conditions also need to consider air temperature to establish its relationship to water temperatures; this is important for determining the relation of climate to corresponding water temperatures. See also responses to CAG-25 and CAG-26.

PH-8

Comments noted. The measures and prescriptions in the final HCP and evaluated in the EIS/EIR are intended to improve poor aquatic habitat conditions (where they presently occur) on a landscape level over all PALCO lands. Although information on current conditions is important for establishing factors that may be limiting coho salmon populations on PALCO lands, it is even more important to develop and implement habitat conservation measures that are targeted at reducing or eliminating unfavorable conditions where they may occur.

PH-9

Comments noted. The effects of shading, streamside buffers, and other factors that affect water temperature are discussed in the EIS/EIR in Sections 3.4 and 3.7. Although air temperature is an important factor in determining stream water temperature, many parameters may affect overall stream water temperature and consideration of multiple factors is often needed. For example, Bartholow (1989) includes a number of parameters that can be important to stream temperature investigations (such as air temperature, relative humidity, percent shade, stream flow, inflow temperature, stream width, solar radiation, roughness, wind speed, and others). He also states that "water temperature can be very sensitive to stream shading, especially for low flow, high width streams in midsummer". Further, he states that "Shading…..screens the water's surface from the direct rays of the sun. Solar radiation may account for over 95% of the heat input during the midday period during midsummer …….. Thus, it is one of the dominant factors affecting maximum daily water temperature, often more so than air temperatures".

As previously stated, the measures and prescriptions described in the final HCP and evaluated in the EIS/EIR are intended to improve potentially poor existing aquatic habitat conditions (where they occur) on PALCO lands. The buffers along Class I, II, and III streams combined with measures for upslope activities are intended to achieve over time a trend toward properly functioning aquatic conditions that, over time, will provide the required habitat for conserving and restoring populations of coho salmon on PALCO lands.

PH-10

Comments noted. The agencies have the role of establishing criteria for properly functioning conditions, including those for stream temperature. Target conditions for water temperature have been incorporated into the properly functioning aquatic habitat conditions matrix described in the final HCP and in the EIS/EIR (see Appendix P). In addition, also note that water temperatures have been evaluated in Sections 3.4 and 3.8 of the EIS/EIR. Also refer to response to comments PH-5.

PH-11

Comments noted. The disclosure and analysis presented in the comment regarding stream temperature regimes will be included in the assessment to be completed as part of watershed analysis, including the analysis of hydrologic units to which these comments apply. Also see response to PH-5 regarding anticipated trends established by prescriptions described in the final HCP and EIS/EIR.

PH-12

Comments noted. Refer to the response to PH-11.

PH-13

See responses to comments PH-9, PH-10 and PH-12. Target conditions for water temperature have been incorporated into the properly functioning aquatic habitat conditions matrix described in the Final EIS/EIR. In addition, water temperatures have been evaluated in Sections 3.4 and 3.8 of the EIS/EIR.

PH-14

See responses to comments PH-9 and PH-13.

PH-15

Comment and information noted. The disclosure and analysis presented in the comment regarding sediment will be included in the assessment to be completed as part of watershed analysis, including the analysis of hydrologic units where these comments apply. Target levels for fine sediments have been established in the final HCP and EIS/EIR (see Appendix K) for properly functioning aquatic habitat conditions. The levels established for particles less than 6.35 mm are 20-25percent; for fines less than 0.85m the levels are 11to16 percent. These conditions are considered necessary for conserving and restoring healthy populations of coho salmon. See response to comment PH-5 and Section 3.8 of the Final EIS/EIR for additional discussion of properly functioning aquatic habitat conditions.

PH-16

Comments noted. The agencies will continue to use the criteria and targets in the aquatic properly functioning condition matrix, including those for fine sediment, not those PALCO presented in the Draft HCP/SYP. See also response to PH-15.

PH-17 and PH-18

See response to comment PH-15.

PH-19

Comments noted. As a response to comments provided on the draft EIS/EIR and draft HCP, more stringent standards will be implemented for operation and maintenance of existing roads, construction of new roads, and decommissioning of other roads. For example, all high and medium risk sites will be stormproofed or properly closed within five years of completion of road assessment, with all stormproofing completed within 20 years of the issuance of the incidental take permit. The reader is referred to Appendix P of the Final EIS/EIR for details on the more stringent standards that have been incorporated into the Final HCP.

PH-20

The final aquatic strategy presented in Appendix P of the EIS/EIR presents additional measures and standards that address mass wasting. These include, for example, no harvest on areas of mass wasting areas of concern and no road construction or reconstruction in those areas unless watershed analysis prescriptions have been approved by the FWS and NMFS.

PH-21

See response to comments PH-15 and PH-19.

PH-22

The Draft EIS/EIR, Section 3.7, provides an analysis of the HCP/SYP buffers. The evaluation of buffer protection took place within the context of riparian management goals, and used scientific standards to judge whether the interim riparian standards are sufficient. For this analysis, the main goal was to provide the level of protection required to maintain the aquatic system. The riparian functions that were specifically evaluated include the following: shade, LWD recruitment, leaf and needle litter inputs, bank stability, and sediment control, as well as microclimate.

Based on public comments and on FESA and CESA issuance criteria, the wildlife agencies believe that additional mitigation beyond that analyzed in the Draft and Final EIS/EIRs would be appropriate in the HCP/SYP to reduce the risk of potential adverse effects. Details of this additional mitigation and the associated monitoring plan are presented in Appendix P of the Final EIS/EIR. With regard to your concern over negotiable riparian zones under watershed analysis, additional language has been added in the Final HCP/SYP and Final EIS/EIR to ensure that post watershed analysis prescriptions maintain riparian function critical to providing a properly functioning aquatic system for fish. The reviewer is directed specifically to the Aquatic Conservation Plan found in Appendix P of the Final EIS/EIR.

Refer to the response to CAG-44.

PH-23

The Final HCP/SYP does not include a goal of providing protection to the level that “take” of species covered under the Incidental Take Permit would be completely avoided, which is what the stream and riparian protection measures referenced in this comment are intended to provide. Consequently, the recommendation that the RMZ widths be expanded and harvest be prohibited within the equivalent of two and one site potential tree (SPT) heights away from Class I watercourses and from Class II and III watercourses, respectively, is mismatched to the objectives of the plan. An equivalent to this recommendation was evaluated under the discussion of Alternative 3 (Property-wide Selective Harvest) in the Draft EIS/EIR in

Section 2.6 and 3.7. Please note that the Spence et. al. (1996) reference was used extensively for evaluating the HCP/SYP prescriptions (see Section 3.7 of the Draft and Final EIS/EIRs).

The Draft and Final EIS/EIRs evaluate the effectiveness of the riparian strategy offered to protect coho salmon and other aquatic species. With regard to the size and role of buffers, please see response to PH-22. The Final HCP/SYP has expanded the 30-foot no-harvest band to 100 feet and has eliminated the "limited entry" zone. The Final EIS/EIR, Section 3.7, evaluates the 100-foot no-harvest band combined with the 70-foot selective harvest band with regard to protection of riparian function.

With regard to your concern for inner gorge protection, the Draft EIS/EIR addresses this under landslide hazard mitigation in Section 3.6. There is not a lack of recognition of inner gorges in the proposed HCP/SYP (PALCO, 1998) and Draft EIS/EIR; inner gorges are specifically addressed in the interim and default prescriptions in both of those documents, which include both avoidance and site-specific analysis. However, based upon further review, the agencies have proposed new mitigation, subject to alteration following watershed analysis, that includes no harvest and no construction of new roads on mass wasting areas of extreme mass wasting hazard, very high mass wasting hazard, high mass wasting hazard, inner gorges, headwall swales, and unstable areas, including those within Riparian Management Zones on Class I, II, and III streams. In addition, the watershed analysis process will require the FWS and NMFS to establish prescriptions for implementation upon the completion of the watershed analysis. Further details concerning the mass wasting avoidance strategy are presented in Appendix P of the Final EIS/EIR.

We agree on the importance of larger pieces of wood, and the topic is addressed extensively in the HCP/SYP and EIS/EIR (see Section 3.7.4.3) The Final HCP/SYP directly provides for large woody debris recruitment by establishing the "no harvest" buffers described above in response to comment PH-22. In addition, within the entire riparian management zones established for all watercourses, no large woody debris will be removed. For post-watershed analysis, the Final HCP/SYP provides the means and targets for large tree recruitment and retention (i.e., the largest 18 trees per acre available in each harvest entry) and a target for diameter class basal area distribution per acre of trees up to 40 inches dbh. Refer to Volume IV, Part D, Section 1.2.2 of the draft HCP/SYP (PALCO, 1998) for a discussion of tree and basal area retention. See Section 3.7.4 of the Final EIS/EIR for a discussion of riparian function criteria.

With respect to your concern for temperature, Spence et al (1996) concluded that three-fourths of a site potential tree (SPT) height is needed to maintain 100 percent of the shade required to maintain water temperature. The Draft EIS/EIR specifically addressed the differing HCP/SYP prescriptions with regard to shade for the maintenance of stream temperature. In addition, stream water temperature issues are adequately addressed in Section 3.4 of the Draft and Final EIS/EIRs.

The current conditions of riparian zones under PALCO ownership were factored into the formulation of the Final HCP/SYP. The riparian condition and time frame of recovery for different riparian functions are specifically addressed in Section 3.7 of the Draft EIS/EIR. In addition, Table 3.7-11 (percentage of total riparian acres found in the HCP/SYP planning area by seral stage and estimated times for recovery of each riparian parameter) specifically takes this into account.

The Draft and Final EIS/EIRs take into consideration the risk of blowdown in evaluating the RMZs. See Section 3.7.4.3.

The riparian lands evaluation is integrated into Section 3.8, where coho salmon are specifically discussed and the level of protection provided by the HCP/SYP is analyzed. The reviewer is directed to this section of the Final EIS/EIR.

PH-24

Federal protection for California Class II streams is not two site potential trees (SPTs). These streams are equivalent to the Federal Northwest Forest Plan (NWFP) perennial non-fish bearing streams and are provided protection out to one SPT.

Please refer to response PH-22 concerning the buffers included in the Final HCP/SYP. See response to PH-23 with respect to water temperatures, landslide prevention, and recruitment of large wood.

The riparian lands evaluation is integrated into Section 3.10 of the Draft EIS/EIR, where tailed frogs and torrent salamanders are specifically discussed and the level of protection provided by the proposed HCP/SYP (PALCO, 1998) is analyzed. The additional mitigation measures included in the Final HCP/SYP (see Appendix P) would reduce the risk of potential adverse effects on frogs and salamanders even more.

PH-25

Refer to the response to CAG-44.

PH-26

Sections 3.6 and 3.7 of the Draft and Final EIS/EIRs include a discussion of watershed analysis. Language has been added in the Final HCP/SYP and Final EIS/EIR to ensure that post-watershed analysis prescriptions maintain riparian function critical to providing a properly functioning aquatic system for fish. The minimum protection post-watershed analyses provide the means to maintain a functioning riparian system that minimizes risk to fish and the aquatic system and targets for large tree recruitment and retention. Please see response PH-23 for further information on this topic.

PH-27

The aquatic conservation strategy of the HCP include a suite of measures that collectively provide for the conservation of the species covered by the ITP as well as to mitigate for incidental "take" of these species to the maximum extent practicable. What is "practicable" must include technical as well as economic considerations. We do not concur with the conclusion that "...the whole process of negotiations with the agencies over riparian skewed away from a scientific basis in favor of an economic basis." The Draft EIS/EIR, including Chapter 3.7, presents the scientific basis of the alternatives considered for the plan. Also, refer to the response to GP-7.

PH-28

Correct. The watershed analysis process will provide a means to adjust buffer widths based on more detailed information. Also see response to DRM-38.

PH-29

Please see response to comments PH-22, PH-23, and PH-24. Thank you.

PH-30

Comments noted. We agree that a measure of canopy cover alone is insufficient in predicting the function of riparian stands in controlling stream temperatures. The aquatic measures in the HCP/SYP (and evaluated in the EIS/EIR) to be applied within the riparian management zone will help ensure that all of the attributes of riparian vegetation that affect stream temperatures along Class I and Class II watercourses (e.g., multistoried canopy, retention of surface vegetation and downed wood) will be retained. This structure will

help to maintain and over time improve microclimate conditions affecting "convective and evaporative energy exchange". Refer also to the response to CAG-25 and PH-9

As indicated in information provided in the comment (Figure 53 - information from the Redwood Sciences Lab), air temperature is linked to vegetation cover types. The streamside buffers for all stream classes (Classes I, II, and III) are intended to provide, to the extent possible, the vegetation needed to achieve over time properly functioning aquatic habitat conditions, including water temperature. Monitoring will be undertaken to ensure that these conditions are met.

PH-31

Comments noted. Refer to the response to GP-17.

PH-32

We disagree with the conclusion "Riparian protection under the HCP is insufficient to help maintain cool stream temperatures for coho salmon and will also hinder recruitment of large woody debris into streams. Therefore, the HCP riparian management strategy is likely to cause jeopardy to coho salmon." The commentor apparently bases this conclusion on the premise that the activities allowed "...within 300 feet of the stream harboring coho salmon...will substantially degrade habitat designated as critical by the Secretary of the Interior." No basis is provided for this premise. With regard to water temperature, refer to the response to PH-5 and CAG-25. Regarding the concern over LWD recruitment, refer to the response to LMR-1.

Regarding the concern over harvest near Class III watercourses, refer to CAG-44. Refer to the response to LMR-1 regarding harvest in inner gorges. The Final HCP/SYP and Final EIS/EIR will not allow harvest in inner gorges until watershed analysis occurs. The commentor presents the inference that the authors of the Draft HCP/SYP assert that only direct shade controls water temperature. This is not correct. Refer to the response to PH-5.

The commentor states, "The current condition of riparian zones on PALCO lands are much more seriously degraded than the HCP acknowledges. Consequently, the HCP fails to meet CEQA requirements with regard to cumulative effects." The commentator does not present the basis for the first statement. Even if we assume the first statement is valid, how the second follows is not clear. To what "CEQA requirements with regard to cumulative effects" the commentator refers is not stated. Consequently, the comment does not present sufficient detail or substance to merit changes to the Draft HCP/SYP or the Draft EIS/EIR. In addition, riparian zone condition is part of the environmental baseline; consequently, they are specifically included in the cumulative effects analysis. Thus, the comment is incorrect.

PJB-1

Thank you for presenting this approach. The agencies, however, consider that the analytical approaches used in the Draft EIS/EIR are appropriate for displaying environmental effects to the public and decision makers.

PL-1 to PL-5

Thank you for your comments. Your requested corrections have been noted, and the proposed changes have been made.

PL-6

The wildlife agencies do not agree that acquisition of the Headwaters Forest is mitigation for the proposed ITPs. The Headwaters Forest is being is being acquired through separate purchase by the Federal and state governments. However, the permanent protection of the Headwaters forest will be taken into account as part of the environmental baseline against which the impacts of take of marbled murrelet (and other covered species proposed by PALCO under the HCP) will be evaluated by the wildlife agencies under FESA and CESA in determining whether to issue ITPs to PALCO.

PL-7 and PL-8

Thank you for your comment. Your requested correction has been noted, and the proposed changes have been made.

PL-9

Comment noted.

PL-10

The Final HCP/SYP has expanded the 10-foot no-harvest band along Class II streams in the interim riparian strategy to 30 feet. Under the Final HCP/SYP, all Class II streams have a 30-foot no-harvest band and a 100-foot selective harvest band. The Final HCP/SYP has also expanded the 30-foot no-harvest band along Class I streams to 100 feet. The reviewer is directed to Section 3.7.4 of the EIS/EIR for a better understanding of the protection provided under the property-wide prescriptions for individual riparian parameters (e.g. shade, LWD recruitment). Also, Table S-3, Table 2.6-1, and all other portions of the EIS referred to in the comment have been updated to include the AB 1986 prescriptions. Thank you for your comment noting that many of the actual on-the-ground practices by PALCO when implementing the interim prescriptions have included more expansive no-harvest buffers along both Class I and Class II streams. Similar to the way watershed analysis was addressed in the EIS/EIR, these modifications of the interim prescriptions are site specific. Therefore it is not possible to analyze these modified prescriptions on a wide-area basis. We are able to analyze the property-wide RMZ prescriptions as noted in Section 3.7 only with regard to their determined widths and the allowable level of activity as specifically described in the prescription.

PL-11

Alternative 1 was determined to have greater protection from sediment delivery to streams by harvest-related mass wasting because the FEMAT buffers analyzed would protect most inner gorges and Class 3 streams. The EBAI assessed the role of buffers as sediment filters from management activity. In addition, the THP process under FPRs are supposed to identify and mitigate for slope stability concerns in a THP planning area.

PL-12

Comment noted. Table S-19 has been corrected as suggested.

PL-13 to PL-16

Thank you for your comment. Your requested correction has been noted, and the proposed changes have been made.

PL-17

The submission has been reviewed and is considered in the Final EIS/EIR.

PL-18

Thank you for your comment. Your requested correction has been noted, and the proposed changes have been made.

PL-19 KC

Please see Webster's Third International Dictionary, page 2,252.

PL-20 to PL-25

Thank you for your comment. Your requested correction has been noted, and the proposed changes have been made.

PL-26-

According to federal and state agency interpretation, maintaining at least the minimum size trees in each size class category meets the size class distribution. If substitution by a larger size class occurs, it is still considered to be meeting the distribution. If substitution occurs from smaller size classes, however, then it is not considered to be meeting the size class distribution. No changes have been made to the text of the Final EIS/EIR in response to this comment.

PL-27

Comment noted.

PL-28

Comment noted.

PL-29

See response to comment PL-26 for an explanation of the agencies' interpretation of meeting a size class distribution. With reference to the portion of your comment concerning AB 1986, see Section 3.7 on page 3.7-86 of the Draft EIS/EIR. The Final EIS/EIR provides a more integrated discussion of AB 1986 under Alternative 2. Please note that AB 1986 is incorporated into both the pre and post watershed analysis buffers.

PL-30

These are summary tables. Please see discussions in Section 3.7 of the Draft EIS/EIR that describe the analysis that evaluated the default and interim strategies with regard to shade and LWD recruitment potential. The shade discussion begins on page 3.7-56 and LWD discussion begins on page 3.7-60.

PL-31

We believe "lesser cathedrals" to be the most descriptive term in this circumstance. The terminology used in the Draft EIS/EIR allows the interested public to recognize that these areas are the ones often referred to as the six groves. Consequently, it is considered appropriate terminology.

PL-32 to PL-34

Thank you for your comments. Your requested corrections have been noted, and the proposed changes have been made.

PL-35

The relationship of AB 1986 to aquatic conditions is discussed under that issue. Additionally, since this is a summary, all issues are discussed further and in more detail in the remainder of the document.

PL-36

Because it is unclear just what change is being requested, no change has been made.

PL-37

Thank you for your comment. Further discussion is required on this issue, therefore, no change has been made.

PL-38

Thank you for your comment. Your requested correction has been noted, and the proposed changes have been made.

PL-39

Thank-you for your comment. We acknowledge the error in the statement that increased flooding has occurred in some streams below PALCO property due to channel aggradation. Because there has been no long-term monitoring of the stream channel, we nor PALCO cannot neither support or refute channel aggradation in many places; however, observations of channel aggradation along many creeks, including Freshwater, is fairly certain based upon the CDF cumulative effects reports on the cumulatively affected watersheds assessments. These watersheds have been observed to be adversely cumulatively impacted by land management activities and floodplain development. We have changed the introductory statement as follows: "Increased channel aggradation has been observed by residents and Resource Agency personnel in some streams below PALCO property. In these aggraded conditions, overbank flooding may occur with increased frequency, and increased sedimentation adjacent to stream channels may be associated with flooding. However, only long-term monitoring of channel conditions and stream flows could confirm an increase in flooding with channel aggradation."

PL-40

Comment noted. The text has been changed.

PL-40 and PL-41

Thank you for your comment. Further discussion is required on this issue, therefore, no change has been made.

PL-42

The location of the Bear and Mattole Rivers at the Mendocino Triple junction indicates a highly unstable tectonic landscape, with high rates of rapid uplift that in turn cause a high rate of natural sedimentation. Tectonic uplift and the subsequent erosion from the rapid uplift are natural processes.

PL-43

The commentor indicates that a second review of the MWAT derivation should be conducted, with particular emphasis on the values projected. The MWAT values are established as target conditions for a properly functioning aquatic habitat. As indicated in the comment, there may be cases on or near PALCO lands where these conditions cannot be met due to extenuating circumstances (e.g., upstream influences, lack of natural vegetation, drought conditions, and others). The information the comment included on potential cases where properly functioning conditions are not found, even though instream, riparian, and upslope conditions would indicate that they should likely occur, is noted and will be incorporated into considerations for the monitoring associated with the HCP/SYP. Following review of the MWAT derivation, no adjustments are being made to the MWAT; the values are adopted as part of the HCP/SYP.

PL-43

This Final EIS/EIR represents the federal and state agencies' evaluation, including maximum weekly average temperature (MWAT).

PL-44

The sentence was clarified to reflect that samples were collected in residential areas downstream of PALCO property.

PL-45

Yes. The document states the latter.

PL-46

The sentence was changed to "during the last 40 years".

PL-47

This is explained on page 3.4-21 of the Draft EIS/EIR.

PL-48

Thank you. The discussion of hydrologic maturity is part of the general discussion of rain-on-snow events, which are in large part caused by immature trees located at particular elevation levels known as the rain-on-snow elevation zone. The discussion concerns the 1964 floods, which have had a persistent impact on the hydrologic and aquatic system in the Project Area. The end of the discussion states that PALCO lands are not likely to be affected by peak flows from such a rain-on-snow event.

PL-49

There is no way to move this section forward. It is consistent with the format of the discussions in the rest of the Section 3.4.

PL-50

Comment acknowledged.

PL-51

The Draft EIS/EIR acknowledges that redwoods often sprout after harvest and therefore their root systems retain a portion of their original root strength (page 3.4-20). However, it is reasonable to assume that fewer

living roots are required to support a few sprouts than were required to support a mature tree. Therefore, some loss of root strength is expected.

PL-52

The section makes reference to studies and specific study areas in California, Washington, and Oregon. Any lack of reference to studies in redwood forests is because there are no applicable studies. However, many of the general conclusions of hydrologic studies in forested environments in the Pacific Northwest are discussed because they are pertinent to the effects of management on the landscape.

PL-53

Section 3.7 of the Draft EIS/EIR addresses redwood root resprouting in more detail.

PL-54

Comment noted. Fog drip is discussed in more detail in the Draft EIS/EIR, page 3.4-22.

PL-55 to PL-57

A brief description of the stream classes was inserted, in parentheses, in the Final EIS/EIR text.

PL-58

On page 3.4-46, the prescriptions for wet weather road use and winter road construction in this alternative do not adequately address and mitigate for the "controllable" delivery of sediment to streams. The agency-proposed mitigation is the mitigation necessary to not exceed the threshold of significance; in other words, the additional mitigation is necessary to meet water quality objectives stated in the NCRWQB Basin Plan.

PL-59

Accepted usage of the words "can" and "may" allows that the words are interchangeable in senses denoting possibility. We do not see a reason to alter the text.

PL-60

The comment notes that not all vegetation removal, road building, and landing construction results in destabilization and that some readers may come to this conclusion.

Response: While the text does not state that "all" vegetation removal, road building, and landing construction is destabilizing, the text has been modified to explicitly note that these land uses are "potentially" destabilizing.

PL-61

The text has been modified to clarify this point. Because not all land is equally susceptible to mass wasting, neither is it equally susceptible to seismically induced landslides. When an earthquake coincides with other factors that can destabilize a hillslope, the likelihood of a landslide increases. Other factors include natural precipitation events and management activities such as harvest that result in loss of root strength. Management activities can increase the likelihood of seismically induced mass wasting when the activities reduce the slope stability and coincide with an earthquake with sufficient ground acceleration to trigger a slide. Because earthquakes are unpredictable, any management activity resulting in conditions that decrease the stability of the land will increase the site's susceptibility to seismically induced mass wasting. Overall, the risk of seismically induced mass wasting is increased in the presence of timber management when compared to natural conditions.

PL-62

The Hookton formation is actually part of the Qol.

PL-63 to PL-65

Thank you for your comment. Your suggested changes have been made.

PL-66

The text explicitly states that the Cederholm and Reid study was conducted prior to the implementation of BMPs and improved road standards. Thank you for the additional references.

PL-67

PL-68

The words “inter-granular friction” were changed to “soil strength (effective normal stress)”.

PL-69

The referenced text is a simple statement when viewed within the concept of a safety factor (FS), which is the ratio of the resisting forces (cohesion, normal stress, internal friction) to the driving forces (weight and gravity). A debris slide that is slowly moving is in a quasi-static equilibrium, with an FS slightly greater than 1. If a stream removes (erodes) some of the material at the base (the lateral support), the resistant forces have decreased and the slide will move by the driving forces (weight of the slide) until the FS becomes slightly greater than 1 again. The statement in the Final EIS/EIR was modified to read, “a stream decreases the support for the block of earth, and contributes to its movement”.

PL-70

Comment noted. The statement has been changed.

PL-71

There is no contradiction, other than the fact that the two studies happened to have different results. Similar discussions pertaining to peak flows also appear in the EIS/EIR.

PL-72

Thank you for the references.

PL-73

Comment acknowledged. In addition to ET, root strength has been found to play an important function in earthflow movements. A recent study by Zhang et. al. (1993) concluded that surface movement rates on forested earthflows are two to three orders of magnitude less than those on grassed earthflows. It was concluded that roots from individual trees interact with those of neighboring trees to retard surface movement and change the rheology of the earthflow compared to grassed earthflows.

PL-74

Comment acknowledged. Floodplains are addressed in the Draft EIS/EIR on page 3.4-28.

PL-75

Thank you for the references. However, Dr. Foltz's papers on road surface erosion are irrelevant to this introductory discussion on surface erosion. The papers are considered in the discussion of road surface erosion.

PL-76

The discussion in this section refers to overland flow in management-disturbed forest environments in which skid trails and harvest have exposed and compacted soils. Exposed soil is subject to overland flow erosion. An undisturbed forest floor is much less susceptible, as you suggest, because of the high infiltration capacities of the forest floor.

PL-77

Thank you for your comments. However, the comments do not warrant further discussion in the Final EIS/EIR because the topic has been adequately addressed and presented in the Draft EIS/EIR.

PL-78

The references have been added to the Final EIS/EIR.

PL-79

The conclusion of the referenced paragraph is that the results are pertinent to current forest practices because they demonstrate a management effect on the landscape. Although there may not be much schist on PALCO land, the point of the study is that management effects are greater on incompetent rock than on competent rock. This is an important point, because much of the Project landscape occurs on incompetent rock.

PL-80

Low order (zero and first order) basins are defined in the Draft EIS/EIR, page 3.6-19.

PL-81

Observation-based science is just as valid or more valid as numerical data collection. In addition, the Kelsey study is much more relevant to the Project Area than the WEPP studies. PALCO itself has stated that there have not been enough studies in redwood forests. Kelsey's work should not be discounted simply because it used observations and estimates.

PL-82

This has been corrected in the Final EIS/EIR.

PL-83

There is some disagreement about whether northern spotted owls are dependent on old growth in Northern California. However, we believe that we are correct in stating that old growth provides important habitat for northern spotted owls and other species.

PL-84 to PL-86

These have been corrected in the Final EIS/EIR.

PL-87

The second sentence should not have been included in the Draft EIS/EIR. We did not intend to make a "significance determination" for the No Action Alternative since it represents the existing condition. This has been corrected in the Final EIS/EIR.

PL-88 to PL-93

This has been corrected in the Final EIS/EIR.

PL-94

No. Although ospreys are currently protected under section 3503.5 and 3505 of the California Fish and Game Code, they do not currently have Fully Protected status. This species is no longer proposed for coverage, see revised list in Appendix P.

PL-95

No. Although egrets are currently protected under section 3505 of the California Fish and Game Code, they do not currently have Fully Protected status. This species is no longer proposed for coverage, see revised list in Appendix P.

PL-96

No. Although snowy egrets are currently protected under section 3505 of the California Fish and Game Code, they do not currently have Fully Protected status. This species is no longer proposed for coverage see revised list in Appendix P.

PL-97

The American Peregrine Falcon is the only Fully Protected species remaining on List A.

PL-98

Comment noted. The text has been changed.

PL-99

Harris (1984) postulates parameters that can be used to measure patch size effectiveness. These parameters are based on his own work and the work of other researchers. It is, as most published works are, the argued opinion of the author.

PL-100

Comment noted. The text has been changed. See references for description of CWWR, 1996 citation.

PL-101

The potential hybridization of the northern and California red-legged frogs has no bearing on the HCP because the status area of the California subspecies does not include PALCO lands, and because hybrids of federally listed species are not protected under Section 7 of the FESA.

PL-102

Productivity data for 1997 were unavailable.

PL-103

Comment noted. The text has been changed.

PL-104

This quote cannot be found in Appendix N. Also, the point of the suggested statement is already made later in the section.

PL-105

Comment noted. No changes were made because current protection for owl sites ranges from 500 - 1000 feet.

PL-106

Comment noted. The text has been changed.

PL-107

This species is no longer on List A proposed for coverage.

PL-108

Comment noted. The text has been changed.

PL-109

Comment noted. The text has been changed.

PL-110

Comment noted. The text has been changed.

PL-111

Comment noted. The text has been changed.

PL-112

Comment noted. The text has been changed.

PL-113

Comment noted. The text has been changed.

PL-114

Comment noted. The text has been added.

PL-115

Comment noted. The correction is not necessary. The words "no harvest" are not used.

PL-116

Comment noted. The text has been changed.

PL-117

Comment noted. The text has been changed. The NSO plan has been revised: see Appendix P.

PL-118

Comment noted. The text has been changed.

PL-119

This item was not edited out of the Draft EIS/EIR but has been deleted from the Final EIS/EIR.

PL-120

Comment noted. The text in the Final EIS/EIR, Section 3.12.3, has been modified to reflect this comment and to be consistent with analysis presented in Section 3.13.

PL-121

The discussion of aerial application of herbicides in the EIS/EIR is relevant because the potential for direct application of herbicide spray to watercourses is far greater from aerial application than from ground application from individuals using backpack spray equipment. Although PALCO does not conduct aerial spraying, the data on the relative lack of impact of aerial spraying support the conclusion that the ground application will have no significant effect.

PL-122

As a generality, pre-emergent herbicides are more persistent than one-time contact or post-emergent herbicides. Because the pre-emergent activity is on seed germination or root growth, the activity is desired in the soil layer a few inches below the surface and should last for at least several months of the growing season when weeds germinate. Pre-emergent activity can usually be found in soil for a year after application. Most label restrictions, such as atrazine, prohibit re-application within a year.

PL-123

Comment noted. The term " rehabilitation" is more accurate because it reflects the objective of improving species distribution and conifer growth in an already forested area. In the text, the term "reforestation" is used as a synonym of rehabilitation. The two terms also appear in PALCO documents, see for example PALCO's standard form for contracting herbicide services.

PL-124 and PL-125

Comment noted. The EIS/EIR and public comment reference academic, technical, and regulatory sources of information. The document submitted by PALCO as part of its comments on the EIS/EIR (report by Dean Thompson) is a valuable contribution. As described in the EIS/EIR, and discussed in general response C-42, the agencies judge the uncertainties surrounding cumulative and long-term impacts of herbicides on listed species to be sufficient that coverage for possible incidental take from herbicides will not be extended in the initial Incidental Take Permit.

The Dean Thompson report includes information necessary for the agencies to process an amendment for herbicide use. That report will need to be supported by appropriate in-field monitoring and subjected to agency and public review.

PL-126 through PL-129

Comments noted. See Appendix P for revised list of species proposed for coverage.

PL-130

Comment noted. The table has been updated.

PL-144

Your comment/opinion is noted.

PL-145

The wildlife agencies agree that the documented increases in landsliding rates after the referenced storm events were likely related to a combination of the effects of the storms and of the management activities (i.e., "logging") that proceeded them. The effects of management activities on forest hydrology and geology are evaluated in Sections 3.4 and 3.5 of the Draft PALCO EIS/EIR.

PL-146

The agencies agree that root stability, in some instances, may not be a dominant factor in hillslope stability. Rather, root strength, a widely recognized influence on slope stability, must be considered along with a suite of other factors. Therefore, this factor cannot be ignored when assessing the potential impacts of timber harvesting on slope stability.

PL-147

Comment noted.

PL-148

This may be true during summer when the marine layer is prevalent along the coast. However, this must be weighed against the loss of evapotranspiration due to timber harvest, which would tend to increase available water. Further, during rainfall events, lack of a forest canopy may reduce interception and therefore increase available water. Any attempt to quantify overall soil water availability must consider an array of factors.

PL-149

Comment noted.

PL-150

Comment noted. However, where adjacent basins are geologically and hydrologically similar, comparisons can provide an added insight into mass wasting characteristics for the basin being analyzed.

PL-151

The agencies agree with this comment. The Final HCP defines inner gorges as slopes greater than 65 percent. However, harvest restrictions are also in place on slopes greater than 50 percent that are adjacent to Class I and II watercourses.

PL-152

Comments noted. We agree that air photo analysis must be conducted by a skilled photo interpreter.

PL-153

Dr. Reid admits her calculations are "very crude." However, the estimates are based on actual field data. Conversely, the Bear Creek report "[did] not quantify the volume of fine sediment delivered to stream

channels associated with surface and rill erosion along cutbanks, road beds, ditches and skid trails throughout Bear Creek ." The Final HCP/SYP discusses the impacts of fine sediments on water quality and aquatic habitat.

PL-154

Disagreement noted. The watershed analysis process will assist in identifying mass wasting areas of concern at both the site level and watershed scale. Refer to the Final EIS/EIR Section 3.6 for a description of this procedure.

PL-155

The agencies agree that landsliding is a natural process and aquatic environments in watersheds such as Bear Creek have evolved with natural rates of landsliding. However, as pointed out in the Bear Creek report and in other studies, timber harvest and related activities (e.g. road construction) can increase rates of landsliding. The purpose of the mass wasting avoidance strategy and watershed analysis procedure outlined in the HCP/SYP is to minimize the effects of land management on rates of landsliding.

PL-156

See response to TA-6 through TA-8, TA-11 through TA-14, supra.

PL-157

See response to C-24.

PL-158

The EIS/EIR does not consider the management of PALCO's lands to be unknown.

PL-159

The wildlife agencies agree with the numerous comments received from the public that the Class III protection and mitigation measures presented in the Draft HCP/SYP should be increased to address concerns expressed regarding potential sediment effects involving Class III watercourses. The Final EIS/EIR and HCP/SYP increase Class III watercourse protection relative to what is presented in the drafts of these documents. Refer to the response to CAG-44.

The commentor presents a list of reasons why the measures in the Draft HCP/SYP would control sediment delivery via Class III watercourses. The first is an example of one experiment where "no more than 45% of the sediment introduced to two ephemeral streams was ultimately transported downstream to the mouth of the tributary they studied." The results of this one study, however, do not appear to address the concerns regarding the role of Class III watercourses in transporting sediment. We also note that the study to which the comment refers was for sediment transport from roads. The study did not include sediment discharge from managed harvest units involving shallow-seated landslides.

The second point is that sediment delivery from Class III watercourses typically occurs during periods of heavy precipitation and runoff, when the "depositional capacity" of downstream areas is "lower" and when " a significant proportion of sediment delivered from Class III streams will be immediately flushed out of the stream system." To where, then, this sediment "out of the stream system" would be deposited is not stated. The effects on aquatic life of high suspended sediment that likely would be created by this "flushed" sediment is not discussed.

We agree that the measures proposed for Class III watercourses in the Draft HCP/SYP described in the next point, including, the provision of an equipment exclusion zone (EEZ), would limit harvest-related ground disturbance and exposed soil, at least compared to current practices. These measures, however, do not address the need for retaining trees as a continuous source of woody material that would contribute to the fine sediment filter strip in the EEZ. They also would not provide trees which roots maintain stream bank stability and that act to prevent shallow-seated landslides from becoming debris torrents.

The next refers to the "greening up" of clearcuts "in 1-3 years following harvest." The revegetation of exposed soil following clearcutting and site preparation can occur well after surface and fluvial erosion has already begun. The initial revegetation is not likely to prevent shallow-seated landsliding or prevent debris torrenting for some time after harvest.

The acknowledged role of large woody debris in and near Class III watercourses emphasizes the importance of having a continual source of wood from standing trees. The Final EIS/EIR and HCP/SYP provides for no-cut buffers along Class III watercourses for this and other reasons.

The mass wasting avoidance strategy is intended to address risk of management-related landsliding, but does not address within harvest unit surface erosion not does in address fluvial (gully and stream bank) erosions that commonly commences after harvest.

While the measures to mitigate sediment discharge and water delivery from roads in the Draft HCP/SYP to Class III watercourses show promise for improvement over current practices, these measures would not likely prevent or allow recovery from sediment effects without the additional protection from stream buffers to mitigate sediment effects related to sources other than roads.

The last item suggests that some members of the public have called for Class III watercourse "no harvest" buffers primarily to prevent delivery of sediment from surface erosion. Our review of the comments, however, indicates that members of the public are concerned with this input mechanism as well as mass wasting and others. We agree that the mass wasting avoidance strategy described in the Draft HCP/SYP requires restrictions on management activities for portions of Class III watercourses that are susceptible to mass wasting, but only for those that can readily be identified. The criteria and procedures for identifying these locations are under development. With regard to the cited "studies" in which the proportion of sediment from surface erosion to all sources was reported as "…less than 10% and perhaps less than 5% of the total sediment delivery to streams," the percentages reported were estimates that were not based on actual measurements. Even if these estimates are accurate, they belie the actual chronic effects of the fine sediment originating from surface erosion on aquatic species and their habitat. We agree that the proportion of sediment from surface erosion reaching Class III watercourses would "represent only a fraction" of the total sediment reaching streams from all sources; however, the "fraction" is likely large given the proximity of these watercourses to where ground disturbance occurs on the hill slope.

PL-160

See response to C-32.

PM-1

The information provided in the comment concerning existing populations of coho salmon in the PALCO area and their importance is noted, and it will be incorporated into considerations for monitoring associated with the HCP/SYP and overall recovery efforts for coho salmon in this ESU. The resource agencies concur with the comment regarding the importance of these remaining populations for potential future recovery efforts. See also responses to PH-2, PH-3 and PH-4.

PM-2

Comments and opinions noted. The opinions expressed indicate that one of the purposes of an HCP is to "...protect completely the remaining coho habitat on their land to make up for past transgressions." Habitat conservation plans, however, are not intended to "completely" protect habitat, but are intended to allow management activities to proceed while providing for the long-term survival and allowing for the recovery of the species and mitigating any incidental "take" to the maximum extent practicable. The purpose of HCPs is not provide a means for landowners to "....make up for past trangressions." Habitat conservation plans are intended to protect threatened and endangered species and their habitats while allowing compatible economic use of private lands. The wildlife agencies do not agree that compromise "can only represent continued decline, perhaps slowed down a bit."

PM-3

The comment notes that logging on PALCO lands will "certainly" result in take of salmon, not only by temporarily disturbing them, but also by causing mortality. This would result in the continued decline of coho populations, eventually to local extinction. The comments are directed at the draft HCP/SYP. The issue of "take" is evaluated in the Draft and Final EIS/EIRs. It is impossible to precisely predict specific population numbers for any particular alternative, particularly if those predictions are for a period that will encompass 50 years. It is also impossible to precisely predict other factors (e.g., ocean conditions, predation, disease, harvest, or competition) that may affect these populations. Therefore, the environmental assessment of potential effects has been focused on habitat requirements. If habitat is properly functioning, then other factors need to be assessed to determine why coho salmon and other salmonid species are either depressed or in need of listing.

To achieve a properly functioning aquatic system and to safeguard priority fish species or populations, unlimited or complete protection across a landscape is not needed to maintain conditions below the threshold of significance. Indeed, this level of protection would minimize potential take to such a level that an ITP and HCP would not be necessary. The proposed HCP's Operating Conservation Program (see Appendix P) and EIS/EIR provides additional conditions for achieving over time properly functioning aquatic habitat conditions that are more restrictive than those described in the draft HCP. These measures and prescriptions apply to instream, riparian, and upslope habitats.

Although current conditions that have resulted from past practices may result in the continuation or even potential decrease in existing populations, the measures or prescriptions described in Appendix P are intended to initiate a long term trend that will conserve and begin to rebuild these populations by providing habitat that meets the requirements for coho salmon and other salmonid species. Therefore, if these conditions, which are based on current understanding of habitat requirements for coho salmon, are achieved (as evaluated through long term monitoring and modified through adaptive management - see Section 3.8 of the EIS/EIR), take will be minimized or avoided.

PM-4

Comments noted. The comments do not provide a basis for the recommended changes in RMZ widths. Note that a buffer need not be "no-harvest" to be a "true buffer" and afford benefits to aquatic species and their habitat as well as protection from impact mechanisms (e.g., those involving tractor logging on adjacent slopes). With regard to the selection of buffer widths, refer to the responses to ALA-28, IFR-9, IFR-11 and CAG-54.

PM-5

Watercourses where fish are present even only seasonally are classified as Class I watercourses. Refer to the responses to ALA-28, IFR-9, IFR-11 and CAG-54 regarding Class II watercourse RMZ widths.

PM-6

Note that Class III watercourses, by definition, do not afford habitat for aquatic life, including for aquatic invertebrates. Refer to the responses to ALA-28, CAG-44 and CAG-54 regarding Class III watercourse protection.

PM-7

The Draft EIS/EIR includes an extensive discussion of the effects of the plan on coho salmon. Refer to Sections 3.4 through 3.9 in the Draft EIS/EIR. This comment provides no new information or analysis to contradict that discussion.

PNG-1

Your concerns regarding THP-1-98-327HUM are noted. As indicated on page 2-67 of the Draft EIS/EIR, the additional mass wasting prescriptions instituted under the proposed HCP/SYP would minimize activities on potentially unstable slopes, which would reduce the risk of hillslope failures. However, because PALCO lands would continue to be managed for timber production, the risk of management-related mass wasting would not be eliminated. Overall, the proposed mitigations associated with the HCP/SYP are anticipated to be less than significant (see Draft EIS/EIR, page 2-67).

PP-1

Please see response to GC-10 and GC-7. The use of present net worth in timber harvest analysis is the standard analytical measure, and the technique that was followed in preparing the Draft EIS/EIR. This comment provides no new information or analysis that contradicts the discussion of economic effects in the EIS/EIR, therefore the text has not been modified.

PP-2

See response to MRC-30.

PP-3

As discussed in Chapter 1 of the Draft EIS/EIR, incidental take permits are allowed under the Endangered Species Act for otherwise lawful activities. The entire Draft HCP/SYP and Draft EIS/EIR evaluate the effects of this potential taking. If the agencies decide to issue an incidental take permit for PALCO's HCP, by definition it would comply with the Endangered Species Act and such permitted takings would not violate that act.

PVC-1

The agencies believe that the classification of late seral forest that was used in the EIS is adequate for the analysis of environmental impacts of the proposed HCP.

PVC-2

The wildlife agencies expect that channel migration zone and riparian management zone restrictions will provide beneficial connectivity across the PALCO ownership.

The wildlife agencies agree that the acreage of old growth and residual old growth habitat will be reduced. The concept of mitigation includes many variations, including the concept of lessening adverse impacts. Various measures for marbled murrelet, NSOs, aquatic species and other terrestrial species will retain and recruit significant acreage of late seral habitat on this ownership. The resulting acreage will be less than currently exists although configured in arrangements suitable for addressing needs of the covered species.

PVC-3

Opinion of the commentor has been noted. Current environmental conditions would not be expected to remain static, in the absence of the proposed action, even if the landowner terminated all commercial activities.

PVC-4 and 5

The Draft EIS/EIR does not consider the Headwaters Reserve as mitigation for PALCO's HCP/SYP. However, it is part of the proposed action and the Headwaters reserve is appropriately considered as part of the environmental baseline in evaluating the effects of the proposed action and in Alternative 4, where a larger Reserve is considered. See also response to comment GEC-32.

PVC-6

The agencies believe that the Draft EIS/EIR provides detailed analysis and evidence concerning how the proposed mitigations will offset the negative impacts of the harvest of LSH.

PVC-7

The mitigation for this impact is the establishment of MMCAs and RMZs which can also act as corridors for some species.

PVC-8

The agencies believe that the limited cumulative benefits are adequately addressed in the Draft EIS/EIR. The intent of the referenced language in the Draft EIS/EIR, page 3.10-159, was to consider the no action alternative as a baseline against which to evaluate cumulative effects of the preferred alternative. The no action alternative in this case represents 'no take' requirements that include allowing harvest of listed species habitat if it is determined to be unoccupied. Habitats may be unoccupied for short periods of time or species may actually occur but are undetected. The long term outcome of this could result in smaller or fewer segments of habitat over the landscape. The preferred alternative, which includes MMCAs, Headwaters, RMZs and maintenance of a proportion of NSO sites, would result in permanent protection of larger, contiguous blocks of higher quality habitat. However, the cumulative effects, considering the future actions of the preferred alternative, still do not result in overall beneficial cumulative effects, and this section has been reworded. It is expected that the preferred alternative will *offset* cumulative impacts to species in the long term due primarily to the reserves and MMCAs

PVC-9

Cumulative impacts have been analyzed in the EIS/EIR. Regarding LSH, the EIS/EIR describes and considers the extent, location and use of LSH in Humboldt County (the majority of it occurring on state and federal lands) and the cumulative effects of each alternative on the existing LSH baseline. Cumulative effects are also described for two LSH-dependent species, the marbled murrelet and the northern spotted owl.

RAM-1

The agencies disagree that the HCP and EIS are not meaningful documents and note the comment on what conditions represent plan fulfillment. Chapter 1 of the Draft EIS/EIR describes and lists the pertinent authorities for the various project approvals and permits. The specific means to demonstrate that PALCO can be made to comply with the terms of the HCP are spelled out in the Mitigation and Monitoring Plan (MMP), Section 2.9 of the Final EIS/EIR, and Appendix P, which is a requirement of California law at the time when the EIS/EIR is certified. With respect to considering PALCO's record, see the responses to BRC-1 and 2, JBBDS-1, and ALA-135.

RAM-2

The agencies note the comment regarding PALCO's adherence to State Forest Practice Rules and some of MAXXAM's financial dealings. A record of PALCO's past violations is not directly relevant to determining whether the proposed plan will work, since the current plan contains many more specific items relating to habitat protection and specifies the means to improve compliance through the MMP. (See the response to RAM-1). The provisions of the HCP and SYP, according to the limits for renewal periods specified in either federal or state law, respectively, would apply to the successors of MAXXAM if the company were sold. See also responses to BRC-1 and BRC-2.

RAM-3

The comment is valid. Effectiveness and compliance monitoring plans have been revised based on agency and public comments. Please see Appendix P in the Final HCP/SYP/EIS/EIR. The MMP for the HCP/SYP is set up so that the company bears the major responsibility for the cost (labor) of monitoring. The monitoring would be done either through independent third parties funded by the company but under the employment of state or federal agencies (similar to what is commonly done in contracting for EIRs), or by the company providing funds so that the agencies would have the manpower to do the monitoring directly. The IA and MMP also contain provisions for penalties and remediation in the event of non-compliance. Such penalties could include the provision that PALCO could not mill or bring to market timber that was cut illegally. Please see section 2.9 in the Final EIS/EIR .

RAM-4

The agencies used the best data available to assess project impacts to fish and wildlife in addition to other affected resources. Effectiveness and compliance monitoring plans have been revised based on agency and public comments. Please see Section 2.9 and Appendix P in the Final EIS/EIR .

RAM-5

The SYP plan is evaluated every 10 years. The other agreements also have different time periods than the 50 years associated with the ITP.

RAM-6

Section 3.20.2 of the Draft EIS/EIR addressed changed circumstances. It indicates that to address potential effects from fire, wind, landslides, floods, and earthquakes, an expedited watershed analysis would be conducted on the impacted hydrologic unit and appropriate measures would be developed to minimize effects to the extent practicable. These changed circumstances do address sedimentation that could detrimentally affect aquatic species including amphibians, reptiles, and fish. There is nothing indicating that the prescriptions cannot be made more stringent if watershed analysis or trend monitoring shows impacts to be

greater than currently anticipated. The ability to make them more stringent is explicitly stated in the HCP and EIS and also in the regulations mandating that watershed analysis or other studies shall be conducted.

RAM-7

We disagree that sensitivity analysis is needed to deal with any lack of data or other uncertainties. In addition to data supplied by PALCO, the agencies examined and used data from numerous other sources (including other professional and scientific opinions) in an effort to accurately assess project impacts (see Draft EIS/EIR citations, references, and appendices). The professional staff of the resource agencies who worked on this project all have considerable expertise in wildlife, aquatics, and other issues, and they also examined and used data from numerous other sources (including other professional and scientific opinions) in an effort to accurately assess project impacts. See the Draft EIS/EIR citations, references (Chapter 4) and appendices; see also the appendices to the HCP itself (Volume 4) for a record of the consultation with the Scientific Review Panel.

RAM-8

The Draft EIS/EIR provided an independent evaluation of the effects of the various alternatives. The agencies consider the type and level of analysis appropriate to inform the public and decision-makers. These analyses used "worst case" or other assumptions, as appropriate to each case, and as stated in the EIS and HCP.

RAM-9

The Draft EIS/EIR addresses the effects of timber harvesting techniques and silvicultural prescriptions such as clearcutting. In particular, Alternative 3, which is a counterpoint to the proposed action, includes property-wide selective harvest, as opposed to clearcutting, and analyzes the environmental benefits that would accrue to a selective harvest regime. In addition, even with an approved SYP, individual THPs must still be submitted, reviewed, and approved. These issues are addressed in that review and are regulated by California FPRs.

RAM-9

Clearcutting under the HCP/SYP will be required to meet requirements of the Forest Practice Rules and additional limitations and mitigation measures included in the HCP/SYP and in Section 3 of the EIS/EIR. In addition, the Forest Practice Rules require THPs to include mitigation for significant effects of proposed timber operations that are not addressed in the HCP/SYP.

RAM-10

An HCP provides impact disclosure and mitigation for incidental take of listed species. It is not a means of revising the administrative procedures of other agencies. Changes to review periods for THPs are controlled by the California State Legislature and the State Board of Forestry. With respect to self-monitoring, see the response to RAM-2.

RAM 11

The Services are concerned about monitoring PALCO's implementation of the HCP to ensure that PALCO fully complies with the conservation and management measures contained in the HCP. As a result, PALCO will be required to fund, for the life of the permits, a third party entity, selected and approved by the Services, to monitor PALCO's implementation of the HCP. This HCP monitor shall be qualified in forestry and fisheries and wildlife biology. The HCP monitor will have full access at all times to PALCO's lands to inspect the covered activities and, specifically, will be on site during each timber harvest conducted by or on

behalf of PALCO. The HCP monitor is charged with immediately reporting to the Services and CDF any deviations by PALCO from conservation and management measures provided for under the HCP, in order for the Services and CDF to take any appropriate action to enforce the permits and any other applicable laws. In addition, the HCP monitor shall report quarterly to the Services concerning implementation and compliance by PALCO with the HCP, as well as on the effectiveness of the HCP's Operating Conservation Program. The intensity of the compliance monitoring by the HCP monitor shall be reevaluated periodically by the Services. See also responses to JBBDS-1 and BRC-1 and 2.

RAM-12

The HCP's IA has been modified to require PALCO to post security with the CDFG in the amount of $2 million (adjusted annually for inflation), based on the annual estimated cost of carrying out the HCP's conservation and management measures. The security may be a pledged savings or trust account, certificate of deposit, irrevocable letter or credit, or other form approved by the Wildlife Agencies. PALCO will be required to renew the security annually and to replenish it as necessary to the amount of $2 million until the HCP obligations have been fulfilled.

PALCO will not be allowed to simply abandon its HCP obligations. If PALCO chooses to relinquish the permits, it will remain obligated to fully mitigate for the impacts of take of covered species that occurred prior to relinquishment. This means that PALCO's obligations under the HCP will continue until the Wildlife Agencies have determined that all impacts of take have been fully mitigated. Additionally, in the event PALCO relinquishes its permits, PALCO will be required to execute and record a binding covenant running with the land that will commit PALCO to restricting or carrying out, as appropriate, activities on covered lands to mitigate fully for the impacts of take of covered species that occurred under the federal and state permit. Mitigation can be required for up to the remainder of the term of the HCP and permits (50 years). The Wildlife Agencies will be named as parties with a right to enforce the terms of the covenant.

RAM-13

Alternative 3 was formulated in response to scoping comments requesting that a number of different management strategies be examined in the Draft EIS/EIR. Selective harvest is not currently a requirement of THPs under the state's FPRs, except in special circumstances. There is no reason why this particular piece of property should be singled out for more stringent operations rules than those stipulated in state law in general. If the rules were to change, they would apply to PALCO as well as to all other timber operators in the state.

The Draft EIS/EIR reported the economic effects implementation of this alternative would likely have on the applicant. That analysis suggested implementing Alternative 3 would not be economically feasible option for PALCO. See Table S-6, which shows a 42 percent diminution in the long-term sustained yield compared to the proposed action. See also the response to RAM-9. Additionally, under CEQA, the lead agency is not responsible for determining what alternatives are economically viable for a company. Despite the fact that Alternative 3 was determined to be the environmentally superior alternative, the lead agency is under no obligation to select it for any of the following reasons:

The proposed project has been mitigated to a level of insignificance.

There is no requirement that a project be mitigated to a level higher than insignificance.

Alternative 3 is merely another means to mitigate the project's environmental effects.

The lead agency need not select the "best" alternative.

The lead agency can adopt a statement of overriding considerations, if need be.

In the absence of adequate mitigations in a proposed project, a lead agency might have to consider adopting another alternative that did mitigate the project's significant effects. That is unnecessary in the present case. In addition, the economic viability of a company under previous ownership and over ten years ago is not the appropriate question here. It is not the role of the federal and state government to set financial goals for individual companies that are permitted. In addition, see responses to ALA-4, 5, 10, 14, and 47.

RAM-14

All appropriate factors will be taken into account when making the final decision about whether or not to issue a permit.

RAM-15

With respect to the maximum extent practicable issues, see response to ALA-4, 5, 10, 14, and 47. The agencies disagree that the mitigation measures and their analysis are weak. The Draft EIS/EIR presents detailed evaluations of all mitigation measures. The final determination if there is sufficient basis for permit issuance will occur in the statement of findings. The rest of this comment is redundant of RAM-13, or represents the opinion of the author, rather than factual questions.

RAM-16

The effects of the default prescriptions, which represent a transition in management, are disclosed in the Draft EIS/EIR. PALCO is not going to harvest 25 percent of their ownership in 5 years, though they will do so in the first decade. Table 2.5-3b has been corrected in the Final EIS/EIR. The interim prescriptions with respect to riparian buffers are not longer part of the HCP because of the integration of AB 1986 into the Final HCP.

RAM-17

As evaluated in Section 3.6 of the Draft EIS/EIR, sediment delivery from clearcuts is minimized because high infiltration rates reduce the potential for overland flow, the slash and disturbed ground within a harvest unit limit the distance sediment can be transported, growth of understory vegetation and new trees limits the time frame that any erosion that does occur actually lasts, and their are erosion control measures applied within the EEZ or Class III streams. The level of habitat disruption from sedimentation in RMZs is minimal because of plant regrowth and duff accumulation. In addition, the proposed Operating Conservation Program contains additional protection measures for Class III streams. See Appendix P.

RAM-18

The erodibility of the PALCO ownership in relationship to bedrock characteristics and soils is evaluated in section 3.6.1 of the Draft EIS/EIR. The Draft EIS/EIR briefly discusses the Erosion Hazard Rating (EHR). The EHR is calculated for each soil using the State of California Board of Forestry Technical Rule Addendum Number 1. The ratings were not reanalyzed in the Draft EIS/EIR.

RAM-19

The agencies disagree that the summary of information in Chapter 2 is misleading. It concentrates on the first decade for some items because to carry the analysis beyond this horizon would be speculative. See the response to GEC-11. The longer-term impacts on employment would, however mimic the long-term sustained yield which is substantially lower under Alternative 3, than under Alternative 2 (see Tables S-6, 9-6b, and 3.9-6 of the Draft EIS). The information presented in the comment is from the Draft EIS/EIR;

consequently, it is obviously disclosed in that document. The indicated reduction in timber harvest in the midterm followed by increases in the later decades is a feature of all the alternatives, not just the proposed action/proposed project. These trends are a result of converting the forested areas that remain outside of no- or limited-harvest areas to second growth with higher rates of growth.

The sensitivity analysis for sediment loading to streams requested by the comment will be part of the watershed analysis carried out in the first few years of the HCP, as described in the HCP and the EIS.

RAM-20

Comment noted.

RC-1

Comment noted. However, the existing data for PALCO lands do not suggest there is the suggested level of error.

II-RF-1

See response to comment BRC-1 and BRC-2.

II-RF-2

See response to SCE-9.

II-RF-3

With respect to RMZs, a wide variety of alternative prescriptions are considered in the Draft EIS/EIR and their effects are disclosed. As indicated, the Class I and II prescriptions for the proposed alternative/proposed project provide moderate to high levels of protection for the indicated species. The alternatives analyzed in the Draft EIS/EIR encompass the suggested range of variability.

See responses to ALA-5, ALA-10, ALA-14, ALA-48, and ALA-50.

II-RF-4

Partial cut timber harvest was evaluated with respect to all issues in Alternative 3.

II-RF-6

The indicated issues are not an effect on the environment and not subject to NEPA or CEQA review. In addition, they relate to choices by PALCO that are not related to the application for a ITP or SYP.

III-RF-1

See response to NRI-1.

III-RF-2

See response to DRM-38.

III-RF-3

Based on public comments and FESA and CESA issuance criteria, additional mitigation measures have been added to the Control of Sediment from Roads and Other Sources component of the Aquatic Species Conservation Plan, Final EIS/EIR, Appendix P. Many mitigation measures pertain to the reduction of road-

related sediment. Also see response to DJK-17 for a discussion of how the disturbance index can limit harvest and road-building activities.

III-RF-4

See response to BRC-1 and BRC-2, and ALA-135.

RHA-1

Opinions and comments noted. Providing "stand level data" and "quantitative, site-specific information pertaining to existing stand-level conditions within riparian management zones and upland zones and how they are projected to change in response to planned activities..." is beyond the scope of the disclosure for the HCP/SYP and the EIS/EIR, which are for an approximately 200,000-acre ownership. Sections 3.7 and 3.8 of the Draft EIS/EIR provide information on the composition of riparian stands along Class I and Class II watercourses. Table 3.7.-8 provides a summary of information on riparian acres by seral stage and hydrologic unit throughout the PALCO ownership. Based on this information combined with basal area/age relationships reported in Linquist and Palley (1963), inferences can be made regarding the relative basal area found in riparian stands. Available stand-level data and additional data will be obtained during the assessment phase of watershed analysis. The Draft EIS/EIR does provide projections of how the landscape will change under the described alternatives.

RHA-2

Comments and opinions noted. The procedural modifications to the Washington State Department of Natural Resources watershed analysis process are described in Volume IV, Part D, Section 4 of the Draft HCP/SYP. The Final HCP/SYP and the Final EIS/EIR include further revisions to this process under the section describing the "Aquatic Conservation Plan, Watershed Analysis" (see Appendix P of the Final EIS/EIR).

RHA-3

Comments noted. The Final SYP/HCP and the Final EIS/EIR present modifications to the strategy for large tree retention that was presented in the Drafts of these documents. The modified strategy calls for an expanded no-harvest RMZs for Class I watercourses and a minimum "side board" after watershed analysis of retaining the largest 18 trees per acre during any harvest entry. Both obviate the need for permanently marking trees for retention and the concerns regarding whether trees would be retained beyond the minimum basal area requirements.

RHA-4

We agree that Class III watercourse protection needs to be enhanced. Refer to the responses to ALA-48 and CAG-44.

RHA-5

CDF disagrees with the conclusion reached in the comment. The projected decline in late-seral forests should not be confused as applying to the RMZs. The implementation of Table 17 (plus the provisions of AB 1986), the decline of late-seral forest <u>outside</u> of the RMZ, and the estimation of growth on PALCO's lands are all consistent and meet the Forest Practice Rules. Also see responses to IFR-4 and IFR-5.

RHA-6

Comments noted. What is presented in the comment does not provide a basis for an alternative prescription. Nevertheless, the extent of the RMZs within which the prescription requiring the minimum 240 sq. ft. per

acre basal area will be modified in the Final SYP/HCP and the Final EIS/EIR. Refer to the response to CAG-54.

RHA-7

Based on the response of redwood stands to commercial thinning and single tree selection prescriptions, the "desired future condition" of 85 percent overstory canopy closure would be expected to be achieved within a few years after each periodic harvest entry in the outer bands of Class I and II RMZs. This would occur through in-growth of shade-tolerant conifers or through expansion of crowns into the growing space created during the single tree selection or both. The period during which canopy closure in RMZs would be reduced to less than 85 percent will be constrained by the requirement that harvest entries occur no more than once every 20 years. The goal of achieving high canopy closure to address the interests of maintaining shade, microclimate, and cool water temperatures must be balanced with the goal of maintaining tree diameter growth (for "key piece" large wood recruitment) and recruitment of new tree age classes. Refer to Sections 3.7.4.1 and 3.7.4.3 of the Draft EIS/EIR for discussions of expected percent canopy closure.

RHA-8

See responses to ALA-77 and NADCE-3.

RHA-9

See response to NADCE-3.

RHA-10

CDF disagrees. Map number 8 (PALCO 1998) meets the minimum requirement of the Forest Practice Rules. The color coding for the roads is clear on CDF's copy of the map.

RHA-11

The comment's author has misinterpreted or misstated PALCO's commitment for recruiting late-successional forest. The recruitment will be primarily in the Class I and II RMZs and in the MMCAs. Also see responses to IFR-5 and ALA-18.

RHA-12

CDF disagrees. See Volume 5, Map 20, of the Proposed HCP/SYP (PALCO, 1998). This map fully complies with 14 CCR 1091.6(c)(2)(B).

RHA-13

The comment notes that at the planned intensity of harvesting there is an extremely high likelihood of significant adverse cumulative impacts to water quality and beneficial uses.

See responses to ET-12, NADCE-1, and NADCE-3.

RHA-14

See response to IFR-4, IFR-5, ALA-18, and RHA-11.

RHA-15

This comment is correct. The watershed sensitivity analysis is not employed in the HCP/SYP. Rather, watershed sensitivity will be addressed through the watershed analysis process. Appropriate prescriptive

measures will be implemented at the agencies' discretion in sensitive areas. This process is discussed in PALCO's Draft HCP/SYP in Volume IV, Part D, Section 1.2.9.

RHA-16

See responses to ET-12 and NADCE-3.

RHA-17

The LTSY definition that the comment refers to applies only to uneven-aged stands, not even-aged stands. The definition that PALCO uses is more conservative than the Forest Practice Rules. This is why it is allowed. Also see response to IFR-4.

RHA-18

PALCO's approach to calculating the LTSY contribution of uneven-aged stands is valid, as determined by research conducted by Davis and others (1997) and according to the Board or Forestry response to a specific question on this issue in the TwoYear Report to the California Board of Forestry on Maximum Sustained Production of High Quality Timber Products, May 7, 1996. Also see response to IFR-4.

RHA-19

The potential allowable cut effect of intensive forest management is addressed through the "Provisions for Monitoring Intensive Management Treatments" in the Proposed HCP/SYP, Volume III, Part G (PALCO, 1998). Also see response to IFR-4.

RHA-20

WHR classifications with respect to late-seral are discussed in section 3.10 of the EIS/EIR. In addition, see responses to RN-1.

RHA-21

The full range of PALCO's submissions will be considered prior to any decision.

II-RHA-1

Comments noted. The Final EIS/EIR and HCP/SYP present modifications to the strategy for large tree retention presented in the drafts to these documents. The Final HCP/SYP clearly states that within the "Late Seral Selective Entry Band" of Class I and II RMZs, the "…tree size and quantities shall be retained per Table 17 (July 1998 Draft HCP, Volume I). Larger tree size classes (including those larger than 40") shall be used for replacement if stated size classes are not present." The compliance monitoring framework of the HCP/SYP will help ensure that the provisions of the aquatic conservation strategy, including those regarding basal area retention, will be made enforceable under timber harvest plans and implemented. Refer to the response to CAG-48 regarding the monitoring framework of the HCP.

RN-1

The Draft EIS/EIR uses the California WHR system to classify late-seral/old-growth habitat (LSH). Based on this definition (a stand containing trees over 24 inches DBH and beginning to develop a multi-storied structure), the Draft EIS/EIR correctly states that LSH usually occurs in stands over 50 years old.

RN-2

We agree that the proposed silvicultural system would not produce true old growth. It is designed to produce stands that meet the California WHR definition of LSH. See also response to RN-1.

RN-3

The wildlife agencies agree with most of this statement. To the extent that habitat which currently affords nesting opportunities for marbled murrelets will be harvested there will be a decline in the population.

RN-4

We do not disagree that old-growth redwood canopies are likely to have a more complex structure than stands that meet the WHR definition of LSH. The comment may be correct in indicating that "It is not unlikely that species new to science will be discovered in these and other habitats of late-seral forests"; however, this is speculative.

RN-5

We agree that fog drip is an important component of the ecology of the redwoods (see Section 3.9.1.1 of the Draft EIS/EIR). It is likely that large patches of old-growth trees would be more effective in "stripping" moisture from the atmosphere than younger stands.

RN-6

The comment confuses the percent of redwood versus Douglas-fir in a redwood stand with the percent of harvest of redwood versus Douglas-fir across the landscape in the twelfth decade compared to the first decade. Different areas would be harvested in the twelfth decade compared to the first decade. The majority of PALCO's lands are not redwood, they are Douglas-fir forests. Therefore, it would be expected that more Douglas-fir would be harvested than redwood.

RN-7

Management by PALCO is expected to reduce the extent of "true late seral and old growth habitat" as defined by the commentor. A considerable acreage of these habitat types will remain in protected areas. Whether this outcome constitutes a "failure to maintain" is arguable. While the wildlife agencies believe that "late seral" forest, as defined in the HCP has many of the attributes of older forests, these "late seral forests" are only old in the context of harvest rotations on commercial timberlands. A 60 year old forest is young when compared to the forests which were present prior to the onset of commercial timber harvest.

RRC-1

Thank you for your comments. The Draft EIS/EIR addresses the management effects on peak flows, low flows, and flooding in Section 3.4, Watershed Impact Mechanisms.

RRC-2

The Draft EIS/EIR addresses the issue of Class III stream sediment contributions to the drainage network in Section 3.4., p. 3.4-44.

RRC-3

Thank you for your professional opinion. However, there have been many studies that have shown buffer strips to act as sediment filters for overland flow-related erosion. See the discussion and EBAI analysis in the Draft EIS/EIR, p.3.6-21.

RRC-4

Thank you for your comments. The Draft EIS/EIR addresses the limitations of the landscape-level geomorphic sensitivity analysis on page 3.6-34.

RRC-5

Predicting the effects of floods on channel conditions is difficult. The point that a "100-year" event restores pool and riffle habitats in contentious. The same applies for a 20-year event in a "balanced" watershed. Many streams in the Plan area are still recovering from impacts initiated during the December 1964 flood. Changed circumstances occur for any peak flow of a 50-year to 100-year recurrence interval at the hydrologic unit scale. Such an event would trigger an expedited watershed analysis to evaluate the impacts of the event and guide future land management activities. Any flood in excess of the 100-year event would be considered unforeseen circumstances.

RRC-6

Thank you for your comments. Cumulative effects are addressed at the end of Section 3.4 Hydrology and Water Quality, Section 3.6 Soils and Geomorphology, Section 3.7 Riparian Function, and Section 3.8 Fisheries.

RRC-7

Thank you for your professional opinions. The Draft EIS/EIR addresses riparian function of the RMZ in Section 3.7. With regard to water quality, the effects of the RMZ on water quality are addressed in Section 3.4.

RRC-8

The complex interaction of management activity, sediment delivery, hydrology, and stream channel morphology are addressed in the Draft EIS/EIR in Sections 3.4 and 3.6.

RRC-9

Thank you for your comment. This comment provides no new information or analysis to contradict the discussion on road assessments. Consequently, the EIS/EIR has not been modified.

RRC-10

Thank you for your professional opinion. However, we disagree. The thresholds of significance for sediment are based upon the management objective of reasonably controlling sediment discharge. The objectives do not state that sediment delivery cannot occur. The NCRWQCB Basin Plan states "When other factors result in the degradation of water quality beyond the levels established herein as water quality objectives, then controllable factors shall not cause further degradation of water quality. Controllable water quality factors are those actions, conditions, or circumstances resulting from man's activities that may influence the quality of the waters of the State and that may be reasonably controlled." This means that management activities that reduce the delivery of sediment to streams are actions that may be acceptable according to the State. This is the threshold and it was evaluated based upon sediment management of the HCP/SYP. Applicable laws must set the threshold for a legal document.

RRC-11

Thank you for your comments and opinion. However, the comments provide no new information or analysis to contradict discussions of hydrology and geomorphology discussed in Sections 3.4 and 3.6 of the Draft EIS/EIR. Consequently, the document has not been modified.

RRC-12

See response to comment RRC-11.

RRC-13

Thank you for your professional opinion on low flows. This comment provides no new information or analysis to contradict the discussion on low flows. Consequently, the EIS/EIR has not been modified.

RRC-14

Thank you for your professional opinion. However, the agencies believe that soil productivity is adequately addressed in the Draft EIS/EIR. In addition, the complex interactions between management activity, sediment delivery, hydrology, and stream channel morphology are addressed in the draft document in Sections 3.4, 3.6, 3.7, and 3.8.

RRC-15

Thank you for your comment. The threshold of significance has been reviewed and agreed upon by associated state and federal agencies (FWS, CDF, and NMFS). Additionally, wetland ecosystems provide a variety of physical, biological and socioeconomic functions (i.e., nutrient removal, sediment retention, groundwater recharge, etc.). The degree to which these functions are performed varies from one wetland to another. All wetlands do not perform all functions. Nor are all of the functions unique to wetlands. In California, in order to protect the various functions/values, wetlands have been managed under regulations related to both land use and water quality (COE and CDF). Certain activities, including forestry activities, and the construction and maintenance of forest roads when in accordance with best management practices, are exempt from regulation under Section 404(f) of the Clean Water Act.

SCE-1

NMFS responded to EPIC's July 24, 1998, FOIA request. EPIC filed suit against NMFS on September 9, 1998, alleging NMFS' failure to make timely responses. NMFS has provided hundreds of documents to EPIC pursuant to FOIA requests and is working toward completing its responses.

SCE-2

The agencies disagree that the environmental setting is not adequately described. Each resource section has extensive discussion of the components of the environmental setting. Additionally, the point listed in (1) is addressed in Appendix N of the Draft EIS/EIR. With respect to (2), the fact that the entire project area has not been surveyed for marbled murrelets is disclosed in the Draft EIS/EIR.

SCE-3

Disclosing options within an alternative is a description of the alternative or project. The agencies disagree with the commentor's assertion that the project description is inadequate. Although final agreement as to whether Owl Creek or Grizzly Creek may be harvested, the DEIS/EIR examined the environmental effects of both scenarios. The HCP and Draft EIS/EIR adequately describe all aspects of the HCP including covered activities, proposed species on the permit, etc. All of the documents referred to in the IA were available via

the internet in addition to being available at select government offices and in over 50 public libraries. The differences in acreages reported for various forest types, including residual and unentered old growth, were minor and resulted in only slight variations in GIS databases. Full integration and environmental analysis of AB 1986 was not appropriate at the time the Draft EIS/EIR was published because the applicant had not given any indication that the provisions of AB 1986 would be adopted as part of the HCP.

With respect to point (2), no details are provided, so no response can be drafted.

With respect to (3), the IA is a formal agreement among the parties. The agreement commits PALCO to carry out the HCP, explains the procedural and substantive rights of the parties in the event of permit suspension, revocation, or relinquishment, and provides mutual assurances to both PALCO and the federal and state signatory agencies. Detailed explanations of the covered activities, the Operating Conservation Program, and maps of the MMCAs, etc., are contained in the HCP. Many of the IA exhibits were included in the draft HCP; therefore, they were available for public review during the public comment period. The remaining exhibits consist of publicly available federal and state regulations or specific examples of covenants, conditions, and restrictions for MMCAs applicable in the event of sale of an MMCA or early permit termination. Review of proposed covenant language is not necessary for a reasoned evaluation of the proposed HCP and ITPs and those proposed exhibits have been deleted. Specific covenant language will be developed if and when MMCA lands are transferred or the permit is terminated before the end of the 50 year term. As provided in sections 5.5 and 8.5 of the IA, the covenants will require protection of transferred MMCA lands in accordance with HCP restrictions for a period of 50 years from the date of permit issuance and, in the case of early permit termination, until the impacts of all past take have been fully mitigated. The wildlife agencies intend to include all IA exhibits with the final approved HCP. Full integration and environmental analysis of AB 1986 was not appropriate at the time the Draft EIS/EIR was published because PALCO had not given any indication the provisions of AB 1986 would be adopted as part of the HCP.

With respect to point (4), no details are provided, so no response is possible.

With respect to point (5), the Draft EIS/EIR does fully consider AB 1986 within its effects analysis.

SCE-4

The agencies disagree that the Draft EIS/EIR does not evaluate the mitigation measures. First, the comment completely contradicts the basic tenets of Grassetti Environmental Consulting, which are also Sierra Club-EPIC comments, one of whose primary criticisms is that the Draft EIS/EIR only evaluates mitigation. With respect to those comments, see the responses to GEC, particularly GEC-1 and GEC-9. Since the two claims are so completely contradictory it is not possible for the agencies to ascertain what the actual comment is. In addition, the listing of mitigation referred to in (1) is obviously not analysis; analysis is contained in the body of the Draft EIS/EIR. With respect to the listed comments, the overall and specific effects of the various mitigation measures are evaluated throughout the various resource sections in Chapter 3 of the Draft EIS/EIR. It is not necessary for the Draft EIS/EIR to evaluate each specific statement in the Draft HCP/SYP; rather, the Draft EIS/EIR must evaluate the effects of the alternatives.

With respect to (3), the agencies disagree. The Draft EIS/EIR discusses the overall effects of reduced lower quality habitat from the harvest of redwood residual, the protection of high quality habitat, and the improvement in habitat by protecting most residual associated with old-growth habitat. The residual can then develop into better quality habitat over the term of the ITP. In addition, see the responses to Harry Carter (HC) and Kim Nelson (KN).

With respect to (4), no information is provided to support this claim, consequently, it cannot be responded to.

With respect to (5), the Draft EIS/EIR does not make the same claim relative to marbled murrelet flight paths.

With respect to (6), monitoring is not an environmental effect; consequently, it does not require analysis in the Draft EIS/EIR.

With respect to (7), Public Resources Code 21081.6, although the comment does not state its specific objection, we assume that the complaint is that the draft EIR does not contain the mitigation monitoring or reporting program called for in the cited section. This section does not require that the mitigation monitoring program be included in the draft EIR. The political agreement that made it possible for this section to be enacted provided that the MMP not be made part of the required contents of an EIR. As a result of this agreement, the requirement for the MMP was placed in Chapter 2.6 of CEQA titled, "General." It was not placed in Chapter 3, which contains among other items the list of required contents of an EIR.

This interpretation was confirmed in the court decision of Christward Ministry v. County of San Diego (Christward Ministry II) (4th Dist. 1993) 13 Cal.App.3d 31. There the court rejected the petitioner's argument that the MMP had to be included in the EIR. The court responded as follows:

The law clearly contemplates otherwise, for the mitigation monitoring program is required to be adopted '[w]hen making the findings required' (sec. 21081.6), and those findings are made after considering the final EIR. (See sec. 21081.6; Guidelines, sec 15091.) Nothing in CEQA or the Guidelines requires the mitigation monitoring plan to be in the EIR." Ibid. at 49.

With respect to (8), this issue is discussed in Section 3.10 of the Draft EIS/EIR.

With respect to (9), there is no reference that allows this comment to be responded to.

With respect to (10), the comment asserts that requiring post-approval studies to develop mitigation measures necessary to reduce or avoid significant adverse environmental impacts, including impacts to endangered or threatened species, violates CEQA, as shown by the decision of Sundstrom v. County of Mendocino (1988) 202 Cal.App.3d 296.

Deferring specific mitigation until after post-approval studies does not violate CEQA. The Sundstrom case ruled that an agency could not approve a negative declaration which must be based on a finding that the project will not cause a significant effect on the environment, where the mitigation was not specified and was made contingent on future discretionary decisions based on future studies. The studies and decisions were to be made without future public review, and the negative declaration would serve to cut off that public review.

The situation here involves an EIS/EIR that provides for detailed public review of the potential significant effects, mitigation measures, and alternatives. With EIRs, the courts have allowed the deferral of mitigation measures until after future studies or monitoring, especially where there will be later decisions subject to CEQA analysis and public review. See Laurel Heights Improvement Association of San Francisco, Inc., v. The Regents of the University of California (1988) 47 Cal.3d 376, 412, where the court approved the deferral of specific mitigation until problems were detected through monitoring activities. In Sacramento Old City Association v. City Council of Sacramento (3d Dist. 1991) 229 Cal.App.3d 1011, the court approved deferring the analysis of parking mitigation for a project until the CEQA documents were prepared for future parking projects. In Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners (2d Dist. 1993) 18 Cal.App.4th 729 the court approved a "first tier" EIR for a port master plan against an attack claiming that impacts of future site specific projects were not adequately analyzed. The court noted that deferral of more detailed analysis to a later project EIR is legitimate. Ibid. at 749. Also see the response to GEC-1. However, the HCP does not

defer mitigation; it includes detailed mitigation measures which are subject to future refinement and modification through the plan's adaptive management provisions.

With respect to (11), this is an introductory section. The reviewer is directed to the actual alternatives analysis on the subsequent pages.

SCE-5

With respect to (1), see discussion in Section 3.10 and Appendix N of the Draft EIS/EIR.

With respect to (2), it is illogical to assume that a statement about future actions is unsupported by evidence.

With respect to (3), the Draft EIS/EIR evaluates the various alternatives without making this assumption.

With respect to (4), the analysis in the Draft EIS/EIR assumes occupancy of these stands; consequently, it is a worst-case analysis and with complete surveys the actual effects could only be as analyzed or lesser.

With respect to (5), the analysis in the Draft EIS/EIR does not make the same assumption.

With respect to (6), see response to SCE-9.

SCE-6

The agencies disagree that there is inadequate analysis of significant adverse impacts in the Draft EIS/EIR. The Draft EIS/EIR extensively discusses the environmental effects of timber harvesting and the effectiveness of the proposed mitigation.

With respect to (1), the EIS/EIR analyzes the impacts resulting from the proposed actions which are the issuance of incidental take permits for a 50-year period. The 50-year permit term was chosen in part because a permit period of that length is important to insure that the mitigation provided for the marbled murrelet will be fully realized and that properly functioning aquatic conditions will be achieved for coho salmon. There is no requirement under NEPA or CEQA to address longer or shorter permit terms, particularly where, as here, the applicant has requested a 50-year term and the wildlife agencies believe such a 50-year term is necessary to mitigate for the effects of take of the covered species.

With respect to (2), the analysis in the Draft EIS/EIR assumes occupancy of these stands; consequently, it is a worst-case analysis. With complete surveys, the actual effects could only be as analyzed or less.

With respect to (3), see the response to GEC-15. Also, with respect to short-term direct effects the agencies disagree. It is exactly these types of effects that are considered in the Draft EIS/EIR analysis and conclusions.

With respect to (4), see the response to Nelson (KN) and Carter (HC). Also, the Draft EIS/EIR assumes a population decline in marbled murrelets in the region and aims for maintaining populations on PALCO ownership with the possibility of federal lands increasing habitat and marbled murrelet populations increasing. The inadequacy of data for use of population models is addressed in Appendix N.

With respect to (5), see the response to GEC-10.

With respect to (6), see the response to GEC-1 and GEC-9.

With respect to (7), see the response to GEC-8 and GEC-18. In addition, the Draft EIS/EIR considers the appropriate effects on a local and regional basis. For example, water quality is considered within the entire basins evaluated, and habitat for species and the likely effects are evaluated regionally. The comment

provides no specific information that is lacking in the Draft EIS/EIR; consequently, a more specific response cannot be provided.

With respect to (8), we disagree that the IA modifies the proposed action. The IA documents the commitments made under the HCP; explains the procedural and substantive rights of the parties in the event of permit amendment, suspension, revocation, or other early permit termination; and provides mutual assurances, consistent with governing laws and regulations, between the company and the signatory agencies. The IA does not change the nature of the proposed action, which is detailed in the HCP, or the environmental effects of the action, as analyzed in the draft EIS/EIR.

With respect to (9), the Draft EIS/EIR also discusses three possible approaches to analysis. The reasons for choosing the indicated analysis are explained in Section 3.10 and Appendix N. The assumptions with respect to the referenced Table 4 are indicated in the footnote to that table and also in Appendix N, part 2 of the Draft EIS/EIR.

With respect to (10), the Final HCP contains additional language and mitigation designed to limit the effects of such disturbances. A more complete discussion of these effects has also been added to the Final EIS/EIR.

With respect to (11), no information is provided as to why the analysis is inadequate. Consequently, no response is possible. The agencies consider the analysis in the Draft EIS/EIR to be appropriate.

With respect to (12), see the responses to Kim Nelson (KN).

With respect to (13), see the response to ALA-8.

With respect to (14), Figure 5 presents the information indicated in the figure explanation, i.e., survey results from 1993 to 1997. No explanation is provided as to why the figure's statement is incorrect. These data are discussed in Section 3.10 of the Draft EIS/EIR.

With respect to (15), the Draft EIS/EIR considers the development of habitat on federal lands over the period of the proposed incidental take permit.

With respect to (16), the Draft EIS/EIR extensively discusses the potential environmental effects, makes conclusions on significance based on these analyses, and does not agree with the conclusions of this statement. In addition, the FWS biological opinion and statement of findings will provide a final determination as to whether the HCP meets issuance criteria, which include point 1 listed in this comment.

With respect to (17), see the response to (2) under SCE-6.

With respect to (18), the area has not been mapped with respect to individual trees, but Table 3.10-6 does show potentially suitable habitat within critical habitat. These are the best data available at this time. Various surveys are also included in the monitoring plan (Appendix R).

With respect to (19), the agencies disagree that the Draft EIS/EIR does not consider the consistency with the marbled murrelet recovery plan. This issue is discussed in Section 3.10 starting on page 3.10-49. Additionally, it is discussed in Appendix N.

SCE-7

With respect to (1), an analysis of the cumulative effects of allowing harvest in one or more of the MMCAs, should the USFWS determine that the criteria for removing the marbled murrelet from the list of threatened and endangered species have been met, will occur when PALCO requests such an amendment. Part of the Section 7 analysis that will be required at that time will include an evaluation of the cumulative effects of

such harvest on the murrelet and other resources. The cumulative effects analysis must be based on the best available science regarding the murrelet and then on existing habitat conditions. A cumulative effects analysis of such a potential permit amendment is not required at this time. If and when an amendment is requested, full compliance with all applicable federal and state laws will be required. This will include an opportunity for public review and comment under NEPA, CEQA, FESA, and CESA.

With respect to (2), see the responses to GEC-8, GEC-18, GEC-10, and GEC-52.

With respect to (3), this is not an assumption; it is based on the analysis in the Draft EIS/EIR.

With respect to (4), these issues are considered as part of the direct and indirect effects of the alternative. See the response to SCE-6, point (10).

With respect to (5), the Kure oil spill impact is part of the existing condition, and existing murrelet populations are considered in the Draft EIS/EIR.

With respect to (6), we disagree that the proposed action includes "safe harbor" assurances. The cumulative effects of the project are analyzed in the Draft EIS/EIR. The comment does not indicate how or what cumulative effects are expected to result from application of the no surprises policy. We do not agree that there are such cumulative effects. By definition, the no surprises rule applies only to circumstances which cannot reasonably be anticipated to occur. As such, unforeseen circumstances do not constitute reasonably foreseeable effects of the proposed action for which a cumulative effects analysis is required or can be carried out.

With respect to (7), this is not a cumulative impact; rather it is a direct impact. See the response to (2) under SCE-6.

With respect to (8A), these issues are considered with respect to edge effects and interior forest. With respect to (8B), (8C), and (8D), the agencies considered all factors with respect to marbled murrelet populations, but discussed cumulative effects of the project with respect to habitat.

With respect to (9), murrelet population trends are considered in the discussion of all alternatives over the 50-year term of an ITP permit.

With respect to (10), IA PARA 5.2(a) this is not the intent of that language. The intent is that owls on acquired lands are included in the overall management strategy for the ownership.

With respect to (11), this HCP was considered. See Section 3.2.

With respect to (12) and (13), the HCPs considered in the cumulative effects analysis in the Draft EIS/EIR were those considered appropriate for the regional analysis. The authorized incidental take of northern spotted owls under the northwest forest plan was analyzed in the biological opinion for that EIS/EIR and continues to be analyzed on an individual project basis by the individual biological opinions related to those projects. The past take (including all authorized ITPs) is incorporated into the baseline for the biological opinion for this project (including marbled murrelets, northern spotted owls, and other covered species). The wildlife agencies do not concede the accuracy of these numbers; however, the analysis in the biological opinion for this project includes the types of information indicated in this comment.

The statements quoted (14) are correct. The exact circumstances at that time are obviously unknown at present and would be subject to existing law and regulation at that time. These future actions are far too speculative to include in a cumulative effects analysis.

SCE-8

The agencies disagree with the commentor's assertion that the alternatives analysis is inadequate. With regard to the No Action/ No Project alternative, the agencies appropriately assessed what actions would be expected to occur over the same time period as the proposed permit period if the proposed acquisition did not occur and the proposed permits were not issued. Because it is not reasonable to conclude all timber harvesting would cease on the ownership under the No Action/No Project alternative, this scenario was not examined.

A reasonable range of alternatives has been examined. These include different harvesting schedules (alternatives 3 and 4), different land bases (alternatives 3 and 4), a "FEMAT" like scenario (alternative 1 and 3) and a variety of other management scenarios.

SCE-9

See responses to ALA-5, ALA-10, ALA-14, ALA-48, and ALA-50.

The Services recognize that Section 10 of the Endangered Species Act requires PALCO to minimize and mitigate the impacts of take to the maximum extent practicable under an approved conservation plan. This does not mean, however, that the Fish and Wildlife Service and the National Marine Fisheries Service will require an applicant to overhaul its economic structure and financial operation in order to satisfy Section 10 issuance criteria. These kinds of economic decisions are generally beyond the Services' expertise. Neither the ESA nor its implementing regulations require that the impacts of take allowed pursuant to a Section 10 permit be minimized and mitigated to the extent technically possible, without regard for economic or operational feasibility. No approved HCP has required that the impacts of take be minimized and mitigated based solely on what is technically possible.

Instead, the Services work with an HCP applicant to minimize and mitigate take within the overall framework of the plan developed by the applicant in conjunction with the Services. As described in the Services' HCP Handbook, it is the applicant who decides during the HCP development phase what measures to include in the HCP. The Services ultimately determine whether the applicant's proposed mitigation program satisfies the statutory issuance criteria but it is up to the applicant, not the Services, to make decisions regarding the applicant's economic structure and financial operation. The Services believe that the measures contained in the PALCO HCP will fully mitigate the impacts of take of covered species over the 50-year term of the HCP and the incidental take permits. In the event that PALCO chooses to relinquish the permit prior to the end of the 50-year term or the permit is revoked, PALCO will remain obligated to fully mitigate the impacts of all take that occurred prior to relinquishment or revocation. Mitigation can be achieved by continuing to apply the HCP's Operating Conservation Program until the Services have determined, according to the standards described in section 8.2 of the Implementation Agreement, that the impact of take of covered species has been fully mitigated.

As explained below, the wildlife agencies believe that changes to the Proposed HCP's Operating Conservation Program have addressed the concerns stated in the comment regarding the marbled murrelet components of the HCP.

PALCO provided an analysis of the practicability of employing seasonal restrictions upon harvest activities in the draft SYP/HCP (see Draft HCP Part B in Vol. IV). Moreover, in the final HCP and the Operating Conservation Program, additional mitigation measures have been included by the Wildlife Agencies that address the issues raised in the comment.

For example, for harvests outside the MMCAs, project implementation will now be scheduled in cooperation with FWS and DFG to avoid adverse impact to murrelets by means of a habitat classification process which will take into account the physical components and constituent elements of suitable habitat in the subject timberstands. This evaluation will facilitate a rating and prioritization of the various habitat blocks across the landscape, and will include a recognition of and coordination with other HCP resource management objectives, especially aquatic protections.

Prioritization methodology will include use of such factors as the proximity of evaluated stands to MMCAs or other known occupied stands, canopy closure, stems per acre, volume per acre, stand size, etc. Better habitat stands, as evaluated through this process, will be subject to take minimization and prioritization processes described below.

To minimize take of nesting murrelets, eggs and young, in the stands rated as better habitat, and in all stands authorized for harvest now known to be occupied, operations associated with timber falling (e.g., marking, layout construction and falling, etc.) will occur outside the murrelet breeding season. Yarding, loading and hauling of these previously entered stands may occur at any time of the year, except 1) where within 0.25 miles of MMCAs or other occupied habitat; 2) as restricted by other HCP measures; or 3) where restricted by other laws or regulations.

Also, additional 300' buffers will be established at certain points along the south edge of he Headwaters Reserve and the northwest edge of the North Fork Elk MMCA. In MMCAs or within 0.25 miles of MMCAs, known occupied or potentially suitable habitat, impacts to murrelets will be further minimized through a consultation and review process. During THP review, a checklist will be used which details the nature of the proposed project and other activities in the area. Consideration will be given to associated road storm-proofing or maintenance activities, quarrying, nearby harvest, salvage or thinning activities, if any, etc. Minimization measures, such as limitations on hours of operation during the murrelet breeding season, equipment limitations to reduce noise and disturbance impacts, or seasonal restrictions on project implementation may also be employed.

Assessment of the practicability of take minimization and mitigation measures, as incorporated in the final HCP, must include a recognition of the acreage of habitat which is dedicated to murrelet conservation management for the life of the 50 year permit (in the MMCAs). Approximately 7,800 acres in MMCAs will be even further expanded by the addition of 270 acres of expansion around Owl Creek MMCA. Over the short term, as a result of AB 1986, the Grizzly Creek tract, as expanded by an additional 350 acres, will be also be withdrawn from harvest and management activities for at least five years. At the end of the five years, the Grizzly Creek tract will be protected as an MMCA for the life of the ITPs if necessary to avoid jeopardy to marbled murrelets.

All these measures leave PALCO relatively little remaining available big timber to actively manage. Of that timberland, all the now known occupied habitat will be managed using seasonal take avoidance measures, as will the best of whatever other potential habitat remains, based on prioritization and analysis of physical habitat constituent elements.

The vast majority of all quality murrelet habitat in the relevant bioregion has now been conserved through these measures.

Added to all these mitigation and minimization measures, in the final HCP, there is an additional requirement that PALCO fund $1,500,000.00 in murrelet research to be directed by an independent science advisory panel over a 10 year period, and that PALCO continue to fund offshore murrelet censusing to track population trends for the first five years of the permit.

Considering all these measures, far exceeding those detailed in any other single murrelet management or habitat conservation plan, the Services believe that the impacts of permitted take have been minimized to the maximum extent practicable.

SCE-10

(A): Comment noted. The agencies disagree that PALCO has not provided assurances of adequate funding in accordance with federal and state incidental take permit issuance criteria. PALCO has stated that funding for out of pocket expenditures under the HCP will be derived in part from the company's timber operations. Pursuant to 3.3 of the IA, by February 1 of each year, the company must provide to the Wildlife Agencies an annual budget, approved by its Board of Directors, which demonstrates that sufficient funds are available to carry out its operations under the HCP during the year. Section 3.3 also requires PALCO to post security in the amount of $2 million with CDFG to cover expenditures under the HCP. This amount, which has been determined by the Wildlife Agencies to be sufficient to fulfill PALCO's annual road stormproofing, monitoring and other out of pocket expenditures, must be maintained for the life of the permit and adjusted annually for inflation. See Section H, Funding, in the HCP. These measures will ensure adequate funding will always be available to carry out the company's obligations under the HCP.

(B): Comment noted. PALCO's draft HCP did include an analysis of impacts likely to result from the HCP. In addition, the impacts likely to result from the HCP are identified and analyzed in the Draft EIS/EIR, and the impacts from the proposed final HCP, which includes additional mitigation and minimization measures included by the Wildlife Agencies, are also analyzed in the Final EIS/EIR. The commentor does not provide any support for the conclusion that the analysis is deficient.

(C): The proposed final HCP includes substantial additional minimization and mitigation measures included by the Wildlife Agencies to minimize and mitigate the impacts of the proposed take on the Covered Species. Additional measures are identified in the IA.

SCE-11

Increases in predation are considered with respect edge effects. The commentor gives no idea of what net mortality they may be considering. Future oil spills and other pollution are unknown and stochastic events. Attempts to quantify spills, El Nino events and other more well known circumstances on marbled murrelet were unsuccessful (Appendix N). The rate of marbled murrelet decline is considered in the evaluation and in the biological opinion.

Items D, E, G, H, I, J and K are addressed in the HCP and/or IA. The harvest of residual and old growth redwood outside of MMCAs (item E) is part of the proposed action analyzed in the HCP and EIS/EIR. Additional seasonal, daily, and phasing restrictions on harvest have been added to the HCP to minimize impacts to marbled murrelets from such harvest outside of protected MMCAs. Material changes in the company's financial resources are addressed in section 3.3 of the IA . See Response SCE-10.

Item H, extension of the ITP boundaries beyond those identified in the HCP, would require a permit amendment accompanied by full compliance with NEPA, CEQA, FESA and CESA. See sections 5.1 and 5.2 of the IA. Potential additions to permit boundaries will be appropriately addressed at such time.

Items I, J, and K are also fully addressed in the IA. If PALCO relinquishes the permit, sections 8.4 and 8.5 of the IA require HCP restrictions on the Covered Lands to remain in place until the impacts of all past take of the covered species are fully mitigated. Similarly, sections 5.3 and 5.4 of the IA address the disposition of covered lands both within and outside of the MMCAs. Wildlife agency approval is required for all such transfers. In addition, unless the lands disposed of remain restricted by the terms of the HCP for the life of

the permit through legally binding agreements, a new ITP or other adequate assurance (such as a permit amendment) that the lands will continue to be managed in accordance with the HCP is required prior to transfer. Such permit amendment will require full compliance with NEPA, CEQA, FESA, and CESA, at which time the impacts of the land disposition will be fully analyzed. Pursuant to section 7.2.3 of the IA, harvest within an MMCA will also require a permit amendment accompanied by full NEPA and CEQA compliance. Section 7.2.3 provides that such an amendment will only be approved if the wildlife agencies determine that the marbled murrelet has recovered to the point that it is eligible for removal from the list of threatened and endangered species. This provision ensures marbled murrelet habitat in the MMCAs will be protected so long as the marbled murrelet remains in need of the protections afforded by the ESA and CESA.

See response to ALA- 12 for a further explanation of "changes to circumstances".

SCE-12

See response to comment ALA-86 for the discussion of critical habitat and adverse modification.

SCE-13

See responses to Harry Carter and S. Kim Nelson. With respect to (2), comment noted. With respect to (3), the commentor is incorrect. See section 3.10 of the EIS/EIR and the biological opinions.

SCE-14.1

Regarding critical habitat, see response to KN-14.

SCE-14.2

Regarding residual habitat, see response to KN-2, KN-3

SCE-14.3

The monitoring plan elements described in the Final HCP will be designed and implemented by the Scientific Panel to meet the monitoring objectives. The commentor does not describe the basis for his concern, so the comment cannot be further evaluated.

SCE-14. 4

The commentor provides no documentation for his statements regarding the amount of habitat in HRSP, nor for statements rejecting the analysis by Ralph and Miller. See response to comment KN-15.3.

SCE-14.5

Commentor provides no support for his statement. See response to comment KN-15.3.

SCE-14.6

Regarding harvest during the breeding season, see response to comment KN-5.3.

SCE-14.7

The supporting information does not substantiate the commentor's claim. Although biological opinions have authorized take of murrelets under certain circumstances, the majority of the species' habitat is in fact protected under the Northwest Forest Plan.

SCE-14.8

Regarding effects of Northwest Forest Plan and biological opinions, see response to response to comment SCE-14.7.

SCE-14.9

Regarding need to survey potentially suitable habitat, see response to comment KN-10

SCE-14.10

Regarding rate of population decline, see response to comment KN-15.2

SCE-14.11

Comment noted. Regarding harvest in contiguous stands, see response to comment KN-9

SCE-14.12

The commentor provides no specific information upon which to base a response.

SCE-14.13

Regarding fidelity, dispersal, and occupation of new habitat, see response to comment KN-6.3.

SCE-15

We disagree that the HCP/SYP impermissibly limits agency discretion or unlawfully delegates agency authority to PALCO.

(A) Comment noted. The commentor does not provide any basis for the conclusion that section 2.4 of the IA constitutes an unlawful delegation of authority by CDF. Nothing in that section limits the agency's decisionmaking authority under state law and regulations. See also response to SCE-47.

(B)Removal of trees for road use. The commentor does not explain how this provision limits agency discretion or constitutes an unlawful delegation of authority. The agencies consider it reasonable to allow the company to remove trees blocking its roads. Language has been added to 3.1.1(a)(5) to require that such trees be left near the location of their removal from the road so that they are not used for commercial logging purposes.

(C) Removal of timber from MMCAs. Section 3.1.1(b) expressly provides that any removal of timber other than for approved MMCA conservation activities, must be approved on a case by case basis by the Wildlife Agencies and must be based on a finding that such removal is compatible with, or beneficial to, the marbled murrelet and other covered species. Full compliance with applicable federal and state laws, including NEPA and CEQA, is required prior to any agency approval of timber removal. This provision clearly retains agency control and discretion over timber removal activities.

(D) Watershed analysis. The wildlife agencies retain the authority under the watershed analysis provisions in section 3.1.3.1(e) of the IA to establish site-specific prescriptions for each watershed which, pursuant to 3.1.3.1(g) of the IA, PALCO is then required to implement.

(E) Material changes in PALCO's funding resources. Section 3.3 of the IA requires PALCO to notify the Wildlife Agencies promptly of any material change in its funding resources. This is an appropriate obligation to vest in the company, which is in the best position to determine its ability to meet its HCP funding commitments. Nothing in this section affects the Wildlife Agencies' independent authority to inquire about

the company's financial status through review of the annual budget supplied to the agencies by PALCO or otherwise, and to take appropriate action under the permit should PALCO fail to maintain adequate funding for the HCP.

(F) Annual Report provision for limiting certification. Section 3.4.2 of the IA requires a responsible company official to certify the accuracy of the contents of each annual report. This provision does not in any way limit agency discretion or delegate agency authority. It is intended to reinforce the company's obligation to provide true and accurate information about its activities under the HCP and ITPs.

(G) and (H) The limitations on requiring additional mitigation from PALCO in the event of changed or unforeseen circumstances are consistent with the NESA and the No Surprises rule codified at 50 C.F.R. §§ 17.3, 17.22(b)(5) and (6), 17.32(b)(5) and (6) and 222.3 and 222.22.

(I) The commentor does not explain how these provisions limit agency discretion or constitute an unlawful delegation of authority to PALCO. These provisions of the IA were renumbered to 6.2.3.2, 6.2.3.2.2, and 6.2.3.3.2, respectively. These provisions reflect a reasonable and appropriate exercise of agency discretion consistent with CESA implementing regulations, given that the HCP minimizes and fully mitigates over the 50 year term of the permit for all impacts of take of the covered species incidental to the covered activities under CESA and all other permit issuance criteria have been met. Planning for foreseeable changes in circumstances and requiring specified conservation and mitigation measures in such cases is reasonable and appropriate. To the extent an unforeseen circumstance occurs, it is reasonable and appropriate to limit any additional conservation and mitigation measures required of PALCO to modifications of activities within the conserved habitat areas and to modifications of the operating conservation program for the affected covered species, and not require PALCO's commitment of additional land, water or financial compensation or additional restrictions on the use of land, water or natural resources without the consent of PALCO, unless pursuant to CESA implementing regulations, amendment of the State Permit is required by law.

(J) The commentor states that if this provision of the IA, which has been renumbered to 6.2.3.3.1, allows the CDFG Director to designate his or her duty to find an unforeseen circumstance to a non-governmental entity, it limits the exercise or discretion of CDFG or otherwise constitutes an unlawful delegation of agency authority to PALCO. This provision is not intended to allow the CDFG Director or designate his or her authority to find an unforeseen circumstance to a non-governmental entity. Instead this provision is intended to provide that the CDFG Director may designate his or her authority to a person within the CDFG to find an unforeseen circumstance. Thus, this provision does not limit the exercise or discretion of CDFG or otherwise constitute an unlawful delegation of CDFG's authority to PALCO.

(K) The provision referred to in this comment has been deleted from the IA.

(L) The provision referred to in this comment has been deleted from the IA.

(M) Section 6.3.1(c) of the IA provides that, to the extent permitted by law, the FWS and NMFS will not require additional mitigation for take of the covered species by PALCO beyond that required under the HCP with regard to the agencies' authorities under NEPA, NESA, the Federal Water Pollution Control Act, and other related fish and wildlife statutes. This commitment is consistent with the no surprises rule and is reasonable considering that the purpose of the HCP is to mitigate for all impacts resulting from take of the covered species resulting from PALCO's covered activities. If such covered activities require additional federal approvals under NESA or other federal statutes, the agencies do not believe it appropriate, nor do they intend to request, additional mitigation for the same take that is authorized under the ITPs and that has been mitigated through the HCP.

SCE-16.1

Final HCP includes increased mitigation and monitoring. Commentor provides no evidence to support argument

SCE-16.2

This species has been removed from the list of species to be covered in the ITP

SCE-16.3

Final HCP includes increased mitigation and monitoring. Commentor provides no evidence to support argument regarding appreciable reduction in survival and recovery.

SCE-16.4

This species has been removed from the list of species to be covered in the ITP

SCE-16.5

Burrowing owl has been removed from the list of species to be covered in the ITP. Commentor provides no evidence to support argument regarding appreciable reduction in survival and recovery of other species mentioned.

SCE-16.6

Final HCP includes increased mitigation and monitoring. Commentor provides no evidence to support argument regarding appreciable reduction in survival and recovery.

SCE-16.7

Final HCP includes increased mitigation and monitoring. Commentor provides no evidence to support argument regarding appreciable reduction in survival and recovery.

SCE-16.8

Final HCP includes increased mitigation and monitoring. Commentor provides no evidence to support argument regarding appreciable reduction in survival and recovery.

SCE-16.9

Final HCP includes increased mitigation and monitoring. Commentor provides no evidence to support argument regarding appreciable reduction in survival and recovery.

SCE-16.10

Final HCP includes increased mitigation and monitoring. Commentor provides no evidence to support argument regarding appreciable reduction in survival and recovery.

SCE-16.11

This species has been removed from the list of species to be covered in the ITP

SCE-17

Failure to include exhibits referenced in the IA. See response to SCE-3, point 3. Maps number 2, Volume V of the July HCP show the Covered Lands. More detailed maps are available to the wildlife agencies in

reviewing the proposed HCP. However, such maps are not necessary to enable an informed review by the public of the impacts of the proposed action. There is no requirement that the Covered Lands be identified by formal legal description.

SCE-18

The lands to be purchased by the Federal government and state of California as the Headwaters Reserve are identified at Map No. 1, Volume V of the July HCP. A detailed legal description of the lands to be acquired will be required to complete the land transaction. The 1996 Agreement does not control the terms of the HCP, IA or ITPs, and there is therefore no requirement that its provisions be repeated in the IA.

SCE-19

Comment noted. Recital H accurately states one of the several criteria for issuance of an ITP under FESA. The findings that must be made in order for FWS and NMFS to issue ITPs are stated in sections 2.1 and 2.2, respectively, of the IA.

SCE-20

We disagree. See response to SCE-9.

SCE-21

The Services are not violating their ESA section 7 responsibilities by assuring PALCO that additional conservation and mitigation measures will not be required without the company's consent. This assurance is provided pursuant to the no surprises rule codified at 50 C.F.R. 17.3, 17.22(b)(5) and (6), 17.32(b)(5) and (6), 222.3 and 222.22 and is consistent with the Services' responsibilities under Section 7. The commentor does not explain the basis for his/her view that such assurances violate Section 7. The IA at section 10.16 makes clear that all covered activities under the Federal and state ITPs must be in compliance with applicable Federal and state law including Section 7 of the ESA and section 2081(c) of CESA.

SCE-22

Adaptive management through watershed analysis and other components of the HCP's Operating Conservation Program allows for modifications in mitigation requirements based on information developed over time about the covered species, their habitats, and the effectiveness of the HCP's conservation and management strategies. Because adaptive management is a central part of the HCP's mitigation program, changes resulting from such management, including additional mitigation, are not limited by the no surprises rule, which otherwise restricts the Services from imposing additional mitigation on PALCO without its consent. The Services are not aware of a safe harbor policy applicable to this HCP.

SCE-23

The additional lands are lands within one mile of the main contiguous portion of the PALCO ownership. The impacts of take of the covered species resulting from acquisition of such lands is addressed in the HCP and EIS/EIR and is being considered now by the wildlife agencies in determining whether to issue the ITPs. As such the Services will be exercising their discretion regarding coverage for the Additional Lands through their decisions to issue or deny the ITPs. The Additional Lands are identified in Volume V, Map 4 of the Draft HCP.

SCE-24

The assurances rule was published in the Federal Register on February 23, 1998 at Vol. 63, pp. 8859-8873, is codified at 50 C.F.R. 17.3, 17.22(b)(5) and (6), 17.32(b)(5) and (6), 222.3 and 222.22, and is otherwise

available to the public. An extensive public review period for the no surprises rule was provided at the time the rule was first proposed on May 29, 1997.

SCE-25

Comment noted. The Changed Circumstances section of the draft HCP simply applies the changed circumstances provisions of the no surprises rule to this HCP. The changed circumstances provisions, which have been revised in part in the final HCP, provide additional protective plan responses to foreseeable circumstances that may result in substantial adverse impacts to the covered species or their habitat on covered lands. The commentor's objections to the limits on changed circumstances recited in the draft HCP and IA are better directed at the no surprises rule itself. The no surprises rule is consistent with the Services' obligations under NEPA and Section 7 of the ESA.

SCE-26

Comment noted. The commitments made by PALCO in the HCP are consistent with the conservation and mitigation obligations required of permit applicants under section 10 of the ESA.

SCE-27

The description of PALCO's timber harvest operations, its road construction, improvement, maintenance, use and scientific surveys and studies, and activities included within the HCP's Operating Conservation Program are adequately described in Volume 1 of the Draft SYP/HCP to extend full permit coverage to those activities. The descriptions of PALCO's rock extraction from borrow pits and two commercial rock quarries are adequate to provide more limited coverage for these activities under the ITPs. We agree with the commentor that the other activities applied for by the company, including herbicide and fertilizer use, sand and gravel mining, grazing, recreational use, stream enhancement projects, and operation of fish rearing facilities were either not adequately described in the HCP or their impacts could not be adequately assessed by the wildlife agencies. These activities will not be covered under the ITPs without future permit amendment. Coverage of rock extraction from borrow pits under the ITPs is provided for a limited five year period pending receipt of additional information from the company to assess the impacts of, and identify appropriate mitigation for, such extraction over a 50 year period. Coverage for PALCO's two commercial rock quarries is limited to a two year period for the same reason.

SCE-28

Comment noted. See response to SCE- 3, point 3, and SCE- 17.

SCE-29

The list of species for which coverage is requested by PALCO is identified at Volume 1, page 7 of the draft HCP. The commentor states that the covered species list may not include unlisted species but does not provide an explanation of that position. The FWS and NMFS believe it is appropriate to encourage private landowners to provide conservation measures for unlisted species as well as listed species to reduce the chances that such species will require the protection of the FESA in the future. To be included as a covered species, sufficient information about the species and its habitat requirements must be available to the Services, adequate conservation measures for the unlisted species must be provided under the HCP's Operating Conservation Program, and the permit issuance criteria must be met for the species. Determinations of whether or not to include unlisted species as covered species under an ITP are made on a case by case basis. After reviewing public comment and the treatment of several unlisted species in the draft HCP, the FWS, NMFS, and CDFG have determined that ITP coverage will not be provided for the following species: Pileated woodpecker, Vaux's swift, Purple martin, Double-crested cormorant, Great blue heron,

Great egret, Snowy egret, Black-crowned night heron, Sharp-shinned hawk, Cooper's hawk, Northern goshawk, Ferruginous hawk, Burrowing owl, Osprey, Golden eagle, Pacific lamprey, Humboldt marten, Yellow warbler, Yellow-breasted chat. As for coverage of unlisted species by CDFG under CESA, see response to ELF-22.

SCE-30

Comment noted. See response to SCE-29.

SCE-31

Comment noted. As the commentor acknowledges, the MMCAs are depicted on Map 25, Volume V of the draft HCP. Maps of the MMCAs, including the expanded Owl Creek MMCA and the additions to the Grizzly Creek tract are shown on maps A, B, and C, Section L of the Final HCP. See response to SCE-3, point 3 and SCE - 17.

SCE-32

Marbled murrelet conservation activities are identified at pages 49-50 of Volume 1 of the draft HCP and are further identified and restricted under section 3.1.1 of the IA.

SCE-33

We disagree. The Operating Conservation Program proposed by PALCO consists of the mitigation, minimization, management and monitoring measures and reporting obligations identified in the draft HCP, primarily in Volumes I and IV and in the IA, for the protection of the northern spotted owl, marbled murrelet, coho and other species of concern. Appendix P has been added to the Final EIS/EIR and Final SYP/HCP to provide a single document containing all such measures as modified in the final HCP. Volume IV of the HCP at Section H contains an extensive discussion of changed circumstances and the responses required by PALCO to address such circumstances. The description of certain changed circumstances has been modified in the final HCP.

SCE-34

Comment noted. See response to SCE-3, point 3 and SCE-17.

SCE-35

The comment does not provide a basis for the view that inclusion of candidate species as State Listed Species violates CESA and CEQA. Neither CESA nor CEQA prohibits the inclusion of candidate species as State Listed Species. The provisions of CESA generally apply to candidate species. In addition, CESA specifically provides that CDFG may authorize by permit the taking of candidate species if all of the permit issuance criteria set forth in Section 2081 of CESA are met. (See California Fish and Game Code sections 2081 and 2085.)

SCE-36

Comment noted. The definition of Unforeseen Circumstances in the IA is the same as the definition codified at 50 C.F.R. §§ 17.3 and 222.3.

SCE-37

Comment noted. See response to ALA-4, ALA-47, and ALA-51. The Services will prepare a formal document providing the basis for their respective findings under § 10(a)(2)(B) of the ESA at the time the decisions

regarding issuance of the ITPs are made. The IA (which will only be executed by PALCO, the wildlife agencies, and CDF if the permits are issued) simply recites the findings the Services are required to make.

SCE-38

See response to SCE-29. The Services are relying on the best available scientific information about the species in determining whether to include in the permit unlisted species requested for coverage by PALCO. Cumulative impacts of future activities on both listed and unlisted species have been considered in the EIS/EIR. The cumulative effects of future activities, which will take into account the effects of the SYP/HCP, will be assessed at the time those activities are proposed.

SCE-38

Comment noted. The comment provides no support for the legal conclusion that § 7 of the IA is inconsistent with 50 C.F.R. §13.23(b). That section refers to the FWS' right to amend a permit for cause upon a finding of necessity. Section 7 of the IA addresses minor modifications to the HCP as well as permit amendments proposed by PALCO. Section 7.1. requires that any modifications to the HCP that would result in operations significantly different from those analyzed in connection with the original HCP, adverse effects on the environment that are new or significantly different from those analyzed in the original HCP, or additional take not analyzed in connection with the original HCP be processed as amendments to the ITPs. See also responses to SCE-140, SCE-147 and ELF- 20.

SCE-39

The inclusion of unlisted species on the Federal ITPs does not foreclose, practically or legally, the future listing of those species. If, and when, one of the unlisted species is petitioned or otherwise considered by the Service for listing the Service will carefully review the five factors identified under section 4(a)(1) of the ESA. As part of that review, the Services will consider the effects of the SYP/HCP on such species.

SCE-40

Section 3.1 of the IA states that "PALCO will fully and faithfully perform all obligations assigned to it under the [IA], the Federal Permit, the State Permit and the HCP...." Section 3.1.3 further commits PALCO to implement all of the conservation and management measures included in the HCP's Operating Conservation Program. While the Services are not bound by the language in the San Bruno Mountain HCP, the above language is consistent with the language quoted by the commentor from the San Bruno Mountain HCP. Section 6.3.1 provides that wildlife agency assurances are conditioned upon PALCO's compliance with the terms and conditions of the Federal Permit and the State Permit and the IA. Finally, in Section 6.4.1 the PALCO companies recognize that "any breach by it with regard to its obligations under this Agreement and the HCP may result in the suspension and/or termination of the Federal Permit and State Permit.

SCE-41

Comment noted. The procedures and substantive requirements governing revocation of the USFWS ITP are found at 50 C.F.R. §13.28 and for the NMFS ITP at 50 C.F.R. § 222.27 and 15 C.F.R. § 904.

SCE-42

See response to ALA-14. CDFG will provide its decision-makers with the basis for its findings under Section 2081(b) of CESA before any decision regarding issuance of the State Permit is made. The IA, which will only be executed by PALCO, the wildlife agencies, and CDF if the ITPs are issued, simply recites the findings CDFG is required to make.

SCE-43

Section 3.1 of the IA states that "PALCO will fully and faithfully perform all obligations assigned to it under this Agreement, the Federal Permit, the State Permit and the HCP..." Section 3.1.3 further commits PALCO to implement all of the conservation and management measures included in the HCP's Operating Conservation Program. Section 6.3.1 provides that wildlife agency assurances are conditioned upon PALCO's compliance with the terms and conditions of the Federal Permit and the State Permit and the IA. Finally, in Section 6.4.1 the PALCO companies recognize that "any breach by it with regard to its obligations under this Agreement and the HCP may result in the suspension and/or termination of the Federal Permit and State Permit.

SCE-44

Comment noted. The procedures and substantive requirements governing revocation of the State Permit are found at California Code of Regulations, title 14, section 783.7.

SCE-45

Comment noted. Section 2.4 of the IA accurately states CDF's obligation regarding the HCP in the agency's review and approval of THPs.

SCE-46

Comment noted. The commentor does not provide any basis for the legal conclusion asserted in this comment. CDF will carefully review the SYP in accordance with applicable state law and regulations.

SCE-47

Comment noted. Section 2.4 appropriately commits CDF to cooperate with PALCO to implement the IA, and the agency declines to modify the quoted language.

SCE- 48

Section 3.1 of the IA commits PALCO to complying with all of the obligations assigned to it under the HCP, the IA, and the Federal and State Permits. Section 3.1.3 of the IA further commits PALCO to implement all of the conservation and management measures included in the HCP's Operating Conservation Program. The measures provided under the HCP's Operating Conservation Program apply collectively to all of the covered species. The complete package of conservation and management measures required under the HCP have been have consolidated in Appendix P to the Final EIS/EIR. It is not necessary or appropriate to repeat in the IA each and every conservation and management measure contained in the HCP, nor is such repetition required by 16 U.S.C. 1539(a)(2)(A) (iv) and 1539(a)(2)(B)(v). Those provisions of the ESA refer to the HCP, not the implementation agreement.

SCE-49

See response to comment SCE-31, SCE-3, point 3 and SCE- 17.

SCE-50

The draft IA was written prior to enactment of AB 1986 and has been modified to incorporate relevant requirements of that statute. AB 1986 does not, as the commentor suggests, define both the Owl Creek and Grizzly Creek tracts as MMCAs. The legislation excludes the Grizzly Creek tract from MMCA status but prohibits harvest and other management activities in the tract for a period of five years to provide an opportunity for purchase and permanent protection of the grove. Section 3.1.2 of the IA prohibits timber

harvest and other management activities in the Grizzly Creek Complex for a period of five years from the effective date of the Federal and state ITPs. Section 3.1.2 further provides that the Complex, which has been enlarged in the final HCP by 353 acres, shall become an MMCA at the end of five years if, at that time, the wildlife agencies conclude that conservation of the grove is necessary to avoid jeopardy to the marbled murrelet.

SCE-51

See response to SCE- 50. The Agencies do not agree that the additional mitigation provided for under AB 1986, which have been incorporated into the final HCP and IA, and which lessen the impacts of the proposed action, requires recirculation of the documents for public review.

SCE-52

See response to SCE-32. The agencies believe the description of MMCA conservation activities in the HCP and IA is adequate to enable informed public review and comment.

SCE-53

The MMCA conservation activities have been reviewed by the wildlife agencies and are subject to the restrictions clearly identified on pages 49 and 50 of Volume I of the HCP and under § 3.1.1 of the IA. These activities have been determined to be compatible with protection of or beneficial to the marbled murrelet. The commentor provides no support for the statement that such activities, as restricted in the HCP or IA, are detrimental to the marbled murrelet or other Covered Species.

SCE-54

The depiction of roads on PALCO's ownership on Map 8, Volume V of the July HCP provides the public with adequate notice of the roads that are subject to stormproofing or will be closed or decommissioned during the term of the ITPs.

SCE-55

Comment noted. The agencies disagree that their written concurrence is necessary prior to removal of trees in connection with road use, maintenance and storm proofing. Section 3.1.1(1) of the IA has been revised to clarify that all trees removed to allow use, maintenance or storm proofing of existing active roads within any riparian management zone (RMZ) must be left near the location of their removal. Section 3.1.1(5) of the IA has also been revised to clarify that all trees blocking roads must also be left near the location of their removal.

SCE-56 and 57

PALCO will receive coverage for the two quarries located in the Yager Creek drainage as well as the Lawrence Creek drainage of the Yager Creek watershed. These two quarries are permitted under local use permits, and they will be covered under the ITPs for two years. These quarries operate seasonally, with most activities taking place from April through November. PALCO will also receive coverage for operation of its borrow pits, which do not require separate permits, for a period of five years from the effective date of the ITPs. The impacts of these operations were balanced against their role in PALCO's road and sediment control program, providing as they do material for road maintenance, road stormproofing, and drainage facility repair. The need for dry and stable road surfaces outweighed any short-term impacts, thus the operations will continue for a limited time.

See response to comment KN-16.11.

SCE-58

Due to a lack of information, and assessment of impacts, the ITP will not cover the scientific collection of coho salmon.

Surveys are described in general in the Monitoring Conservation Plan sections of Final HCP.

SCE-59

The commentor provides no data or analysis to support the opinion that fuel removal results in significant environmental impacts. The agencies disagree that preparation of a specific Fire Management plan is required to prior to issuance of the permits. Preparation of a Fire Management plan that the agencies must review and approve is a specific measure required under the HCP to minimize impacts to the covered species. The details of the plan are not necessary for informed public review and comment regarding the proposed HCP.

See response to comment HC-12. Commentor provides no evidence to support argument.

SCE-60

Fish releases have been excluded from the list of activities covered under the permit.

SCE-61

The commentor provides no support for the statement that hunting will result in significant impacts to the marbled murrelet or other covered species. As stated under section 3.1.1(a)(10) and at page 49 of Volume I of the draft HCP, no hunting is allowed in the MMCAs during the marbled murrelet nesting season. The licensed hunting that is allowed outside of the murrelet nesting season should have little or no impact on the covered species. While hunting in the MMCAs is allowed in accordance with the restriction identified in Section 3.1.1(a)(10), hunting is not a covered activity under the ITPs.

SCE-62

Comment noted. In addition to compliance with all applicable Federal and state laws, including NEPA and CEQA, any activities, other than MMCA conservation activities identified specifically in section 3.1.1, must be consistent with the HCP. The HCP requires that such activities be either compatible with protection of or beneficial to the marbled murrelet. The wildlife agencies consider it important and appropriate to adhere to the protective standard for marbled murrelets provided for in the HCP and IA in reviewing any future activity within an MMCA. The phrase “compliance with all applicable laws” obviously includes the ESA and CESA. Specific reference to those statutes is not necessary.

SCE-63

Comment noted. Section 3.1.1(b) of the IA clearly states that timber removal other than that allowed under the MMCA conservation activities must be approved by the wildlife agencies and based on a determination that such removal will be beneficial to the marbled murrelet and its habitat and in conformance with the Aquatics Conservation Plan. The intent of this section is to allow timber removal in those specific circumstances where the wildlife agencies determine it will benefit the murrelet, such as thinning conducted to remove competition and allow faster attainment of old growth habitat characteristics. Permission to undertake any timber removal will require compliance with all applicable laws, including NEPA and CEQA, and could require a permit amendment under certain circumstances.

SCE-64

Comment noted. The provision recognizes that the MMCA activities have been analyzed in the EIS/EIR and have been found to be compatible with protection of the marbled murrelet and its habitat in the MMCAs.

SCE-65 to SCE-67

The MMCA conservation activities have been reviewed by the wildlife agencies and, as restricted in the IA at §3.1.1 and at page 49 of Volume I of the HCP, determined to be compatible with protection of the marbled murrelet and its habitat. These activities are small in scope and impact. It is not reasonable or necessary to impose an absolute requirement on PALCO to identify each instance where an MMCA conservation activity will be undertaken during a particular year or to preclude the company from carrying out any MMCA conservation activities it has failed to identify. For example, the circumstance of a tree blocking a road may not exist at the time PALCO submits its annual report to the wildlife agencies specifying which MMCA activities it expects to undertake during the coming year. For this reason, § 3.1.1(c) requires such activities to be specified in the annual report to the extent known by the company.

SCE-68 to SCE-73

Comments noted. This section has been completely revised to reflect the provisions of AB 1986. As revised, § 3.1.2 requires protection of the Owl Creek tract as an MMCA for the life of the permit, prohibits timber harvest, including salvage logging and other management activities within the Grizzly Creek tract for a period of five years from the date the permits are issued, and requires that Grizzly Creek tract be preserved as an MMCA for the life of the permit if it is determined by USFWS or CDFG that protection of the tract is necessary to avoid jeopardy to the marbled murrelet. The Owl Creek tract has been enlarged by 274 acres and the Grizzly Creek tract by 353 acres in the final HCP to provide additional protection to the marbled murrelet and its habitat.

SCE-74

Comments noted. See response to comments SCE-33 and SCE-48.

SCE-75

The Draft HCP contains a detailed list of mitigation and minimization measures that apply for protection of aquatic covered species prior to watershed analysis. [site to January 7 document in HCP??] Those measures have been substantially strengthened in the Final HCP. A complete list of such measures is provided under the Aquatics Conservation Plan component of the HCP's Operating Conservation Program in Appendix P of the Final EIS/EIR. It is not the case, as the commentor suggests, that mitigation for aquatic species has been deferred pending watershed analysis. Comprehensive prescriptions will apply to stream side covered activities from the date the ITPs are issued. It is only through watershed analysis that those prescriptions may be modified as appropriate to address the site specific conditions of each watershed.

SCE-76

Because the IA was drafted prior to enactment of AB 1986 it did not include the restrictions provided under that statute. Section 3.1.3.1 of the IA and the final HCP have been modified to incorporate the requirements of AB 1986.

SCE-77

See response to SCE-75.

SCE 78

"Properly functioning riparian habitat conditions" were defined and discussed in the Draft HCP, both in Volume I and Volume IV, in section (c) of the Aquatic Species Conservation Plan, including a detailed matrix clearly delineating the habitat condition goals for the area. These include specific targets for water quality, habitat elements, riparian buffers, including water temperature, sediment, LWD, pool quality, and tree abundance.

SCE-79

Section 3.1.3.1(a) has been modified to require watershed analysis and require PALCO to implement the site specific prescriptions required by the wildlife agencies following completion of watershed analysis. The wildlife agencies disagree with the commentor's suggestion that PALCO should not be represented on the watershed analysis teams. The company has comprehensive knowledge about the conditions on its property and is best able to assist the wildlife agencies in selecting prescriptions that both insure protection for the covered species and are feasible to implement by the company. The final selection of site-specific prescriptions will be made by the wildlife agencies.

SCE-80

We disagree. It is appropriate to permit the company to disagree with a proposed prescription.

Section 3.1.3.1 has been substantially revised to provide that if either the company or one of the Wildlife Agency participants on the watershed analysis team disagree with a particular prescription, a five member independent scientific review panel will be convened to review the prescription and make a recommendation to the wildlife agencies. This panel will be comprised of one member selected by PALCO, one member selected jointly by NMFS and FWS, one member selected by CDFG, and two members selected unanimously by the other three members. This process will help to insure the process is fair and considers the best available science in developing appropriate watershed prescriptions. The authority to determine all site-specific prescriptions will remain vested in with the wildlife agencies. Under § 3.1.3.1(e) the wildlife agencies commit to work together to establish a uniform set of prescriptions that are most compatible with PALCO's operational needs, consistent with protection of the covered species as provided under the Aquatics Conservation Plan component of the HCP's Operating Conservation Program. However, it is recognized that NMFS and FWS each retain independent authority under FESA and CDFG retains independent authority under CESA to establish prescriptions. Consistent with AB 1986, § 3.1.3.1(f) provides that if one or more of the agencies imposes a prescription that differs from that recommended through the watershed analysis process, the agency will state in writing its reasons for doing so.

SCE-81

See response to comment SCE-80.

SCE-82

See response to SCE-75.

SCE-83

The State of Washington Department of Natural Resources watershed analysis process is explained in Part D, Volume 4 of the draft HCP.

SCE-84

We disagree that the terms “modification,” “amendment,” or “original HCP” as used in § 3.1.4 (now § 3.1.5) of the IA require definition. The original HCP is the HCP as approved by the wildlife agencies in issuing the ITPs. An amendment is a change in terms and conditions of the ITP. A modification is a change in the HCP, which if it would result in an increase in take, will require an amendment to the ITPs.

SCE-85

The commentor is apparently misinterpreting § 3.1.4 (now § 3.1.5). It is only through a permit amendment (which requires additional NEPA analysis), a finding that the issuance criteria under § 10 of FESA have been met with respect to the amendment, and a new Section 7 biological opinion that an increase in take beyond that authorized under the ITPs can be allowed.

SCE-86

The term “direct control” is taken from the FWS' general permit regulations at 50 C.F.R. § 13.25. The term means that PALCO is responsible for insuring that all employees, contractors, and other third parties who conduct covered activities comply with the provisions of the HCP and ITP and that PALCO is liable if any third party under its control violates the terms of the ITPs or HCP.

SCE-87

Comment noted. See response to SCE-33, SCE-48, and SCE-75.

SCE-88

See response to comment SCE-27.

SCE-89 through 95

See response to SCE-10.

SCE-96

A detailed explanation of the monitoring program required of PALCO is included in the HCP’s Operating Conservation Program attached as Appendix P to the EIS/EIR. In addition, the company is required to fund an independent HCP Monitor, approved by the wildlife agencies, to monitor its compliance with the HCP and ITPs and, if requested by the one or more agency, the effectiveness of the HCP’s Operating Conservation Program. The Monitor is required to be present during all timber harvest operations conducted by or on the company’s behalf and to immediately report any deviation from the terms and conditions of the HCP or ITPs to the wildlife agencies and CDF so that the agencies may take appropriate enforcement action.

SCE-97

The basis for the opinion that the IA requires survey and data collection for only certain Covered species “….violates the cumulative impact standard and the best available scientific evidence standards of NEPA/CEQA and the ESA respectively” is not clear. The comment lacks sufficient specificity to provide a basis for modifying the Draft EIS/EIR. To what cumulative impact and best available scientific evidence “standards” the comment refers is not stated. The Final HCP/SYP and the Final EIS/EIR describe what wildlife and botanical surveys will be required prior to conducting timber operations to mitigate impacts to Covered species. Other surveys and means of data collection, however, will continue to be employed as part of the timber harvest plan preparation and review process pursuant to the requirements of CEQA and the Forest Practice Rules. Surveys, however, are only one means of collecting information on the location and

status of species and their habitat for the purpose of meeting the CEQA and NEPA requirement for disclosure and analysis of baseline conditions, trends and project effects. Published literature and continually updated databases showing the location and range of species as well as their habitat associations will remain available to and used by resource professional participating in project planning and implementation. The watershed analysis process will include inventories and assessments of habitat conditions in each hydrologic unit on a recurring basis. The monitoring framework will generate additional baseline and trends information on habitat conditions that will inform cumulative effects analysis.

SCE-98

The term Operating Conservation Program is defined in the definitions section of the IA as follows:

Operating Conservation Program means the conservation and management measures provided under the HCP to minimize, mitigate and monitor the impacts of Take of the Covered Species as described in Appendix P of the EIS/EIR and this Agreement. The Operating Conservation Programs conservation and management measures include PALCO's reporting obligations under the Federal Permit and State Permit and those measures described at Section K, Attachment no. 4 of the HCP to respond to Changed Circumstances.

SCE-99

Section 3.4.2 of the IA specifies that PALCO must submit the "results" of the surveying and data collection required under the HCP. Survey and data collection requirements are identified in the monitoring sections of each individual conservation plan section of the HCP

SCE-100

See response to SCE- 15(F). The intent of the certification requirement is to heighten the company's obligation to provide true, accurate, and complete information to the wildlife agencies in each annual report. The responsible company official who signs the report on behalf of the company is required to make appropriate inquiries of all individuals involved in its preparation to insure its contents are accurate.

SCE-101

The comment does not provide a basis for the view that the HCP/SYP and IA fail to comply with CEQA's requirement for mitigation monitoring and reporting. CEQA provides that when a public agency makes CEQA findings prior to approving a project, the requirements for adopting a reporting or monitoring program apply. (See Public Resources Code section 21081.6 and CEQA Guidelines 14 C.C.R. Section 15097.) Such requirements will be met.

SCE-102

See response to comment SCE-103.

SCE-103

Comment noted. The term "best efforts" has been replaced by "reasonable efforts." The commentor provides no legal support for the contention that the quoted phrases in § 3.4.2 of the IA violate FESA, CEQA or NEPA and the agencies believe that the contention is without merit. Contrary to the commentor's assertion, under the Freedom of Information Act, trade secrets and other "commercial and financial information obtained from a person and privileged and confidential" are exempt from disclosure. 5 U.S.C. Section 552(b)(4). See 43 C.F.R § 2.13(c)(4) and 15 CFR §4.7. The federal wildlife agencies are required to provide notice and an opportunity to object to the release of such information to PALCO prior to its release. See 43 C.F.R. §2.15(d) and 15 CFR §4.7. The IA expressly states that this provision is not intended to limit the applicability of the

California Public Records Act (CPRA). Thus CDFG's responsibilities under the CPRA and its independent discretion to determine whether documents are exempt from disclosure under the CPRA are not restricted by this provision. However, the CPRA does not prohibit CDFG from providing notice and an opportunity to PALCO to object to the release of information PALCO considers to be confidential prior to its release, so long as pursuant to the CPRA, CDFG properly responds to a request for such information and does not obstruct the inspection or copying of any information that is not otherwise exempt from disclosure. As the last sentence in Section 3.4.3 of the IA makes clear, the final decision regarding release of any information designated as "confidential" by the company rests with the wildlife agencies.

SCE-104 and I05

Comments noted. The requirement to allow wildlife agency inspection of all records required to be kept under the HCP encompasses the underlying documents and data that support statements made by the company in its Annual Reports or otherwise. This section recognizes the wildlife agencies' unrestricted right to enter upon all PALCO lands where Covered Activities are carried out to monitor the company's compliance with the ITPs and the agencies' right to inspect at any reasonable hour company records or documents required under the HCP. In addition § 3.4.3 clarifies that its provisions do not apply to or limit the authority of Federal law enforcement agents or peace officers authorized by law to enter the Covered lands to enforce the HCP, FESA or CESA or other Federal laws or the right of access of the third party HCP Monitor referenced in § 3.4.1.

SCE-106

Comment noted. See response to SCE- 33, 48 and 75. Section 4 of the IA is a standard clause inserted into implementation agreements which clarifies that the provisions of the HCP's Operating Conservation Program are incorporated by reference into the IA, but that in the event of a contradiction between the terms of the HCP and the terms of the IA, the terms of the IA control. A statement has been added which clarifies that in the event of a contradiction between the terms and conditions of the ITPs and the IA, the ITP terms and conditions control.

SCE-107

See response to comment SCE-11, item H and SCE-23. As provided in § 5.1, the inclusion of new Covered Lands apart from the Additional Lands already analyzed requires an amendment to the ITPs.

SCE-108

Comment noted. See response to SCE-17 and SCE-23.

SCE-109

Due to revision of owl conservation strategy, this measure no longer applies.

SCE-110

The wildlife agencies disagree. The conservation strategy provides adequate direction and mitigation for owls added to plan coverage.

SCE-111

See IA Section 5.2a(iii).

SCE-112

Comment noted. Revised conservation plan defines standards more fully.

SCE-113

Comment noted. See response to SCE-11, item H and SCE-23.

SCE-114 and SCE-115

The commentor has apparently misinterpreted § 5.2(c). This provision requires that, notwithstanding expiration of the 50 year ITPs or early relinquishment or revocation of the ITPs, PALCO must continue to manage Additional Lands added to the permit until all past take resulting from Covered Activities affecting the Additional Lands has been fully mitigated. The provision allows the provisions of the HCP to remain in effect as necessary to mitigate for the impacts of past take for a period of up to 50 years from the date that the Additional Lands are added to the ITPs, notwithstanding expiration of the original 50 year term of the permit. Under this provision PALCO could be required to manage Additional Lands added to the ITPs in year 45 of the original permit term for up to 40 years beyond expiration of the 50 year permit term if such management was required to fully mitigate for the effects of past take. The conservation and management measures required under the HCP's Operating Conservation Program apply to all lands originally included in the ITPs and all Additional Lands added to the ITPs during the period the ITPs remain in effect and, in the case of early permit relinquishment or revocation, until the impacts of all past take have been fully mitigated, which in the case of Additional Lands could easily extend beyond the original 50 year permit term. PALCO would only be allowed to terminate its HCP obligations upon early ITP relinquishment if the company had already fully mitigated for the impacts of past take of the Covered Species. The requirement of full mitigation meets or exceeds the requirement under §10(a)(2)(B)(ii) that the impacts of take be mitigated to the maximum extent practicable, and meets the requirement under CESA § 2081(b) that the impacts of take be fully mitigated.

SCE-116

Comment noted. See response to SCE-23. Commentor is apparently referring to §5.2(d). The provision requires that PALCO provide proof to the wildlife agencies that it has the right to engage in the Covered Activities on the Additional Lands and to implement the terms of the HCP, IA and ITPs on such lands before it may extend the ITPs to such lands. This provision insures that any Additional Lands included in the permit will be managed in accordance with the HCP.

SCE-117

Comment noted. The agencies disagree that an amendment to the ITPs is required where Covered Lands are transferred out of PALCO's ownership accompanied by adequate commitments that the lands will be managed in accordance with and for the duration of the 50 year HCP and ITPs. Dispositions of Covered Lands under terms which insure that the HCP protections will continue to apply to such lands would not result in new or greater environmental impacts to such lands beyond those analyzed in the EIS/EIR. However, except where a new ITP is issued to the subsequent owner of such lands, no incidental take of any threatened or endangered species would be allowed on the transferred Covered Lands. Agency approval is required for all dispositions of Covered Lands pursuant to § 5.3.1(a).

SCE-118

Comments noted. All applicable requirements of Federal and state law will be followed.

SCE-119 and SCE-120

Comment noted. See response to comment SCE-23. A permit amendment is not required where the disposal of Covered Lands is accompanied by inclusion of Additional Lands of approximately equivalent acreage and habitat value and where such substitution would not result in any environmental impacts that are different or greater than those analyzed in the EIS/EIR and no take beyond that authorized under the permit will occur.

SCE-121

See responses to SCE-23 and SCE-116.

SCE-122

The agencies have considered the impacts of removal of up to 500 acres out of a total of 211,700 acres covered by the ITPs and HCP. Such acreage could not be removed from any MMCA and could only be removed from the Covered Lands as a result of minor boundary adjustments with adjacent landowners. Such removal would have little or no impact on the effectiveness of the HCP and would not result in significant new or greater environmental impacts beyond those analyzed in the EIS/EIR. The allowance of removal of up to 500 acres would be permitted under the ITPs; no additional statutory authority is required.

SCE-123

Comments noted. See response to SCE-3, point 3 and SCE-11, item J. Transfers of Covered Lands in MMCA status should not require a permit amendment where, pursuant to §5.5 of the IA, PALCO demonstrates to the satisfaction of the wildlife agencies that the protection afforded to the marbled murrelet and its habitat in the MMCA by the third party transferee will be equal to or greater than that provided under the HCP for a period of 50 years from the date the ITPs are issued. All applicable requirements of state and Federal law will be followed.

SCE-124

Comment noted. See response to SCE-33, SCE- 48 and SCE-75.

SCE-125

The commentor does not provide any support for the legal conclusions made in the comment. See response to SCE-29 and SCE-38. The EIS/EIR and Section 7 biological opinion prepared for the proposed action analyze the effects of the Covered Activities on the Covered Species, both listed and unlisted.

SCE- 126

Section 6.1.3 of the IA provides that “to the maximum extent permitted by law and regulation” FWS or NMFS will not impose new, additional or different conservation or mitigation measures on PALCO in connection with biological opinions issued with respect to the Covered Activities after the effective date. Because the impacts of take of the Covered Species resulting from the Covered Activities will have been fully analyzed in the biological opinion issued in connection with the HCP and ITPs, it is appropriate to conform, to the extent permitted by law and regulation, any take minimization measures identified in a subsequent biological opinion issued with respect to a Covered Activity to those already analyzed and required under the HCP and ITPs. Nothing in this provision restricts the Services from considering all available scientific information in subsequent biological opinions or from requiring different take minimization measures for a Covered Species in such biological opinions where such information compels that result.

SCE-127

Comment noted. We disagree. The final critical habitat rule for the marbled murrelet codified at 50 C.F.R. § 17.95(b) defines critical habitat to exclude lands covered by a legally operative ITP that addresses the conservation of the marbled murrelet. As explained in the final critical habitat rule at 61 Fed. Reg. 26270-71 (May 24, 1996), removal of critical habitat designation from areas covered by approved HCPs is appropriate because the purpose of critical habitat is to identify those areas within the area occupied by a listed species on which are found those physical or biological features which are essential to the conservation of the species and which may require special management considerations or protections. See § 3(5)(A), 16 U.S.C. § 1532(5)(A). Management measures necessary to protect the marbled murrelet and allow its recovery are included in the HCP, including the conservation of the murrelet's old growth habitat and surrounding areas in MMCAs and measures to minimize take outside of the MMCAs.

SCE-128

Comment noted.

SCE-129

Comment noted. The extensive take mitigation and minimization measures and habitat protection habitat protection provided under this HCP for the Covered Species addresses the special management that would be required should critical habitat be designated on the Covered Lands for any listed Covered Species. The assurances of no new or different conservation or mitigation in the event critical habitat were designated for any of the Covered Species provided under § 6.1.4 is consistent with the no surprises rule codified at 50 C.F.R. §§ 17.3. 17.22(b)(5)(6), 17.32(b)(5) and (6), 222.3 and 222.22.

SCE-130

Comment noted. It is reasonable to take into account the conservation and mitigation measures already provided under the HCP in determining what additional measures may be needed to issue an ITP to PALCO for a newly listed species which is not a Covered Species. It is also reasonable when selecting among conservation and mitigation measures of equivalent biological protection to select those measures which minimize impacts to PALCO's Covered Activities consistent with the requirements of Section 10 of FESA.

SCE-131

Comment noted. See SCE-21. We agree that the Federal wildlife agencies have a duty to avoid jeopardy to listed species. Nothing in § 6.1.6.1 of the IA or the no surprises rule abrogates that duty.

SCE-132

Comment noted. Section 10.3 of the IA has been modified to state that those regulations in effect as of the date an action is taken will apply except in the event of a future amendment to the no surprises rule which provides less regulatory certainty to PALCO, PALCO may rely on the no surprises rule in effect as of the date the ITPs are issued unless such reliance is prohibited by statute or court order. Allowing PALCO to rely on the current no surprises rule furthers the purpose of the rule which is to provide certainty to landowners who undertake significant conservation measures for the benefit of threatened and endangered species under HCPs that the requirements imposed on them will not be increased without their consent. As noted above, PALCO would not be permitted to rely on the current no surprises rule if such reliance were prohibited by statute or court order.

SCE-133

All reasonably changed circumstances have been considered. The effects of any such changes will be considered with expedited watershed analysis. That is the appropriate time to evaluate and respond to these specific effects.

SCE- 134

Comment noted. The commentor has not identified any changed circumstances omitted from Volume IV, Part H of the draft HCP.

SCE-135

Volume IV, Part H of the draft HCP contains an extensive discussion of both physical and legal changed circumstances. Plan responses are identified for both types of circumstances. Expedited watershed analysis which will result in site specific prescriptions which factor in the effects of fire, windthrow, landslides, flood, etc. is required for all of physical changed circumstances.

SCE-136

Comment noted. See response to SCE-21. The commentor does not provide any support for the contention that assurances to PALCO of no additional mitigation violates NEPA or CEQA or "required cumulative impacts analysis."

SCE-137

The resources available to the FWS and NMFS in the event that additional measures are needed to protect the Covered Species are detailed in the final no surprises rule at 63 Fed. Reg. 8862 (February 23, 1998) and include land acquisition, or exchange, habitat restoration or enhancement, management of lands under Department of the Interior jurisdiction to benefit the species, and use of subsequent Section 7 biological opinions and Section 10 HCPs to protect the species. The existence of such legal authorities is not an effect on the human environment required to be analyzed in the EIS/EIR.

SCE-138

The comment does not provide a basis for the view that this section of the IA contractually eliminates the State's discretion to deny an ITP. This section does not eliminate or diminish CDFG's discretion; it merely describes the procedure that would apply in the event PALCO applied for incidental take authority under Section 2081(b) of CESA for a species that is not covered under the ITP that may be affected by the Covered Activities and that is or becomes listed or a candidate for listing under CESA. In accordance with CESA, CDFG would issue an ITP for such species after any required public and/or environmental review if CDFG determined that PALCO's application satisfied all applicable statutory and regulatory requirements.

SCE-139

Comment noted. See responses to SCE-117, SCE-122, SCE-123 and SCE-119-120.

SCE-140

Comment noted. The language of §7.2 of the IA is consistent with the general permit amendment provisions provided at 50 C.F.R. § 13.23(a) which govern amendments to ITPs proposed by applicants.

SCE-141

See response to SCE-11, item K.

SCE-142

Comment noted. The applicant has applied for ITPs covering a 50 year term. If ITPs are issued, they will be for a 50 year term.

SCE-143

The bracketed language is language upon which PALCO and the federal wildlife agencies had not come to agreement at the time the draft IA was circulated for public review. The brackets have been removed from the final IA. The final IA states that if a suspension of the FWS or NMFS ITP has not terminated after a period of three years, the applicable Service will within 90 days of a request from PALCO either terminate the suspension or commence a proceeding to revoke the ITP. The bracketed language relates to the process applicable to permit suspension; it does not affect the description of the proposed action or its environmental effects as analyzed in the EIS/EIR.

SCE-144

Comment noted. Suspension of an ITP would require PALCO to modify its Covered Activities, including timber harvest activities, as necessary to avoid take of the species included in the suspended permit. PALCO is required to continue its obligations under the HCP's Operating Conservation Program during the term of the suspension.

SCE-145

Comment noted. There is no inconsistency between the language of § 8.2 of the IA and the Services responsibilities under 16 U.S.C. § 1539(a)(2)(C) to revoke an ITP if the permittee is not complying with its terms and conditions. The commentor does not provide any explanation of this contention that the provisions of the IA conflict with 16 U.S.C. § 1539(a)(2)(C).

SCE-146

Comment noted. The language requiring an adjudicatory hearing before the NMFS ITP is revoked is required by 15 C.F.R. Part 904.

SCE-147

We agree that the provision in § 8.2 of the IA which referenced § 6.l.6 is ambiguous. The language has been deleted. In place of that provision, a new provision has been added to § 7.2.1 of the IA which specifies that the USFWS will interpret its authority to amend the ITP under 50 C.F.R. § 13.23(b) consistent with the assurances provided under the no surprises rule.

SCE-148

Volume I of the HCP summarizes the conservation and management measures required under the HCP's Operating Conservation Program. The reference to Part A was in error. The reference will be corrected to refer to Appendix P of the Final EIS/EIR which incorporates all of the measures required under the HCP's Operating Conservation Program.

SCE-149

This section has been revised so that it is consistent with final CESA implementing regulations governing ITP suspension and revocation. (C.C.R, t.14, § 783.7.) Such regulations shall govern ITP suspension and revocation. They provide that any action to suspend or revoke any privileges under the ITP shall be limited

so as to address the discrete action or inaction that has resulted in the suspension or revocation, to the extent consistent with species protection purposes of the ITP.

SCE-150

See response to SCE-149.

SCE-151

This section has been revised so that it is consistent with final CESA implementing regulations governing ITP suspension and revocation. (C.C.R., t.14, § 783.7.) Such regulations shall govern ITP suspension. They require that the permittee be notified in writing of the proposed suspension.

SCE-152

See response to comment SCE-149. Suspension of privileges under the ITP could include timber harvest activities if the discrete action or inaction that has resulted in the suspension involves such activities.

SCE-153

Comment noted. This section has been revised so that it is consistent with final CESA implementing regulations governing ITP suspension and revocation. (C.C.R., t.14, § 783.7.)

SCE-154

Comment noted. The reference should have been made to Section 6.3.1(a) of the IA. This section has been revised so that it is consistent with final CESA implementing regulations governing ITP suspension and revocation. (C.C.R., t.14, § 783.7.)

SCE-155

We agree. The language of § 8.5.2 of the IA requires among other factors that the "location, quantity and quality of habitat of Covered Species modified" be taken into account in determining PALCO's full mitigation obligation. This factor includes the habitat conditions of any residual old growth harvested outside of the MMCAs.

SCE-156

Comment noted. The brackets have been removed from the language in the first sentence of § 9.1(a) and subparagraph 4 of § 9.1(a) has been deleted in its entirety. New language has been added to subparagraph 3 of § 9.1(a) which specifies that for purposes of applying the penalty provisions of FESA and other Federal law and CESA and other state law, each instance of harvest, destruction or cutting of a single merchantable tree (defined as a tree 8 inches in diameter at breast height) in violation of the terms of the Federal and state ITPs shall be considered a separate violation of such ITPs. Additional remedies are identified in §9.1(c). See also response to JBBDS-1.

SCE-157

Comment noted. Section 9.2.1(c) clearly provides that the meet and confer provisions of that section do not apply to any action by the wildlife agencies to restrict the Covered Activities or the scope of any Covered Activities where the applicable agency determines that action must be taken immediately to avoid violation of applicable law including jeopardy to the continued existence of a Federal or state listed species. The suggested revision to the provision would not alter the meaning of the provision as currently written.

SCMMG-1

The agencies are aware that if a permit is granted, incidental take of some occupied murrelet habitat would occur. Murrelet surveys have been completed on almost all of the uncut old growth stands on the property, and approximately half the residual stands (see Appendix N, Draft EIS/EIR). The agencies believe that most of the remaining unsurveyed residual old growth habitat not proposed for protection is of low quality and has a lower likelihood of being to be inhabited by murrelets.

Regarding surveys, also see response to comment to KN-10. Regarding residual habitat, see response to comment KN-2 and KN-3.

SCMMG-2

It is agreed that the Draft HCP was missing information. Please refer to Section 3.10 in the Draft EIS/EIR for a detailed analysis of the impacts of the proposed HCP on these species.

SCMMG-3

The commentor does not specify what an adequate level of surveys would be. The agencies believe that enough surveys have been done to determine an acceptable level of incidental take. Please refer to Appendix P for information on the establishment of an effectiveness monitoring process and research fund that will assist in obtaining further information on conservation needs of this species.

SCMMG-4

The agencies do not agree. See response to comment FS-15 and the revised Murrelet Conservation Plan in Appendix P.

SCMMG-5

MMCAs will be reserved for at least the life of the permit, at which time their protection will be reevaluated based on the status of the species and law existing at the time. Furthermore, AB1986 has provided an opportunity for the permanent acquisition of both Owl Creek and Grizzly Creek groves. Please see the revised Murrelet Conservation Plan in Appendix P.

SCMMG-6

Refer to Appendix N in the Draft EIS/EIR for a detailed discussion of the agencies' rationale for the assumption that residual habitat receives less murrelet use than uncut old growth. Also see responses to comments KN-2 and KN-3.

SCMMG-7

Regarding population level impacts, see response to comment HC-1.

SED-1

The EIS/EIR is programmatic for purposes of CEQA in that additional detailed data and analysis can be included in each THP. Also see responses to ET-12 and CAG-15.

SED-2

The comment notes that the published HCP/SYP and its EIS/EIR is inadequate in its analysis and disclosure of information, and that this does not comply with CEQA or the Forest Practice Rules because so much of the

impact assessment and development of specific mitigation measures is not in the HCP/SYP that the THPs will refer.

The Director of the CDF can require additional mitigations in THPs to reduce significant adverse impacts to less than significant. Also see response to SED-1.

SED-3

See responses to SED-1, ET-12, and NADCE-3.

SED-4

See responses to IFR-5 and ALA-34.

SED-5

See responses to ET-12, CAG-1, NADCE-3.

SED-6

The comment has no explanation of how this SYP will not meet MSP. However, see response to IFR-4.

SED-7

The site index sample size was expanded to increase the sample size and distribution. There was no significant change in site index estimation based on this additional sampling. The effect of harvest practices on site index over time is a very long-term monitoring issue that may be addressed with periodic inventories.

SEW-1

The responsible agencies have based their evaluation of effects to cultural resources on the best available information. As stated in the Draft EIS/EIR (p. 3.15-8), this comes primarily from past archaeological surveys conducted in conjunction with the preparation of timber harvest plans. Archaeological field survey of all 211,000 acres of PALCO lands included in the HCP/SYP is not feasible because of the high cost. Results of past surveys provide an indication of the types of cultural properties that may be expected to occur in the project area. This permits the agencies to make a landscape level determination of potential adverse effects. Furthermore, the California FPR and CEQA require that site-specific effects to cultural resources be evaluated for every timber harvest plan. Management of cultural resources (including such protective provisions as monitoring) would therefore be addressed on a site-specific basis under individual timber harvest plans.

SEW-2

As stated on page 3.15-12 of the Draft EIS/EIR, California has the most comprehensive program in the nation for managing cultural resources in conjunction with timber harvest plans. Procedures for ensuring adequate protection for cultural resources are written into the California FPRs (14 CCR Section 929.1) and are presented in the Draft EIS/EIR, beginning on page 3.15-12.

Archaeological surveys for timber harvest plans are not conducted by unqualified registered professional foresters, but by professional archaeologists or persons who have received archaeological training in accordance with 14 CCR 929.4, 949.4, and 96.9.4. Furthermore, as stated on page 3.15-13 of the Draft EIS/EIR, the CDF has a thorough review procedure for these surveys. This procedure requires that CDF's regional archaeologists review all archaeological surveys for timber harvest plans.

It is true that the present condition of archaeological resources recorded in the past within the project area is unknown. However, the conclusion that archaeological resources will be wantonly destroyed without further evaluation of their condition and potential significance, as implied by the comment author, does not inevitably follow. In fact, as stated on page 3.15-12 of the Draft EIS/EIR, the FPRs require that CDF first conduct a records search at the appropriate California Historic Resources Information System (CHRIS) Information Center and then follow the records search with field survey and verification of previously recorded sites. Recorded sites are typically flagged and avoided. State law prohibits PALCO and other logging companies from knowingly destroying cultural resources.

SEW-3 :

The CDF has a rigorous program in place that guards against the destruction of ephemeral prehistoric sites and other cultural resources during logging, road building, and other operations covered by PALCO's HCP/SYP. Systematic archaeological surveys must be conducted for each timber harvest plan submitted to the CDF. See also responses to comments SEW-1 and SEW-2.

The FWS and NMFS disagree with the author of this comment that they have not fulfilled their responsibility under the National Historic Preservation Act to take cultural resources into consideration and to determine whether its actions could have an effect on historic properties. The FWS, NMFS, and CDF have considered the potential effects to cultural resources and have determined that this action will not have significant direct effects on cultural resources. Secondary effects, including the effects of logging, road building, etc., under an approved HCP, would be considered by CDF during the processing of individual timber harvest plans.

SF-1

Other HCPs and THPs were included in the cumulative effects analysis in the Draft EIS/EIR. See Section 3.2. They are also considered in the Services' Biological Opinions.

SF-2

The Draft EIS/EIR contains extensive discussion of temperature effects on salmonids, existing riparian conditions including potential shading, and effects of various RMZ prescriptions on temperature. Table S-2 incorrectly does not contain Yager Creek's listing on the 303(d) impaired water bodies list for sediment. Yager Creek is not listed for temperature. Table 3.4-4 correctly lists Yager Creek. Temperature data for Yager Creek and Lawrence Creek are listed in Table 3.4-5.

SF-3

The reader will find this discussion in Section 3.22.4 of the Draft EIS/EIR under Possible Conflict with Plans and Policies of Other Jurisdictions. Cumulative effects are discussed in the Draft EIS/EIR at the end of each resource section.

SF-4

Missing number. There is no comment SF-4.

SF-5

Cumulative effects, including the land uses of private property, are analyzed in each resource section of Chapter 3 of the Draft EIS/EIR. Section 3.2 identifies actions used to evaluate cumulative effects, and Section 3.6.6 identifies land uses in watersheds in which PALCO has ownership. Section 3.8.5 discusses most of the issues brought up in this comment, and the agencies consider the cumulative effects analysis

contained in the Draft EIS/EIR appropriate to evaluate effects on water quality, aquatic habitat, and fish species. Also, see response to GEC-18. In addition, the final decision will also consider the NMFS' biological opinion which considers all ongoing activities in the ESU as part of the environmental baseline. In that opinion, analysis considers the status of the landscape and activities across the entire ESU, although not at the same level of detail as the project area.

SF-6

Please see Section 3.8 of the Draft EIS/EIR (e.g., Figures 3.8-3a to d and 3.8-4).

SF-7

PALCO is not responsible for all the private land in the ESU. However, the Draft EIS/EIR considers the cumulative effects in the ESU, as do the FWS and NMFS Biological Opinions.

SF-8

This effect is considered by evaluating the condition of habitat throughout PALCO's and adjacent land.

SF-9

Jeopardy is determined in the NMFS and FWS Biological Opinions. See also response to SF-18

SF-10

See response to SF-6.

SF-11

These lands are considered by use of tables and maps in sections 3.6.6 and 3.11, including Figure 3.11-1. It is not necessary for each project-level EIS or EIR to produce detailed and complete maps of every component of the entire region. The various documents are referenced.

SF-12

See response to SF-11. Additionally, it is not necessary for an EIS/EIR to provide interactive maps for reviewers in order for issues to be evaluated.

SF-13

The reviewers is directed to Section 3.11. In addition, see response to SF-11.

SF-14

The reviewer is directed to Section 3.9 and Figures 3.9-1 and 3.9-2.

SF-15

See response to SF-11.

SF-16

See response to SF-5.

SF-17

The reviewer is directed to Section 3.8, which evaluates a variety of alternatives for managing PALCO lands.

SF-18

As part of approving the final HCP/SYP, the agencies, under Section 7 of the Endangered Species Act, must demonstrate that the plan "is not likely to jeopardize the continued existence of any endangered species or threatened species." Refer also to the Draft EIS/EIR, Sections 3.4 through 3.9, for detailed discussions of anticipated effects of the plan on coho salmon and associated habitat.

SF-19

As stated in Section 3.19 of the Draft EIS/EIR, titled Tribal Trust Resources and other Indian Tribal Issues, the Services believe there would be no effects on traditional cultural properties under any of the alternatives, since no traditional cultural properties are known to exist on the project lands. It should be noted that habitat conditions for salmon are expected to improve under all the alternatives, a situation which would be consistent with the Services' tribal trust responsibilities.

SF-20

See response to BRC-1 and BRC-2 and ALA-135 addressing the ability of the FWS and NMFS to issue an ITP to the applicant. The agencies note the commentor's alternative preference.

SF-21

The FWS and NMFS are giving the permit application very close scrutiny, as noted by the extensive documentation provided to date and careful analysis given to public comments. In addition, see response to TNL-2, SF-5, SF-6, SF-10, SF-11, SF-12, SF-13, SF-14, and SF-15.

SF-22

The comment has been noted. Please see response to DRM-18.

SJS-1

Thank you for your comment. Table S-7 has been revised and now includes PALCO production figures. These figures are included for each alternative considered in the Final EIS/EIR.

SJS-2

The no-surprises policy is not discussed in the indicated question and answer sheet or in the Draft EIS/EIR summary. By their nature, these materials cannot contain everything that is in the two-volume document. The no-surprises policy, however, is presented in Chapter 1 of the Draft EIS/EIR under discussion of federal HCPs on page 1-9.

SS-1

The reviewer is correct in that no use versus availability analyses were conducted for the purposes of the EIS/EIR evaluation. Collecting the necessary field data to conduct use versus availability analyses, and then conducting these analyses, for each species proposed for inclusion in the ITP is beyond the scope of this analysis and deemed an unnecessary scale of analysis to compare the relative effects of the proposed alternatives on the various species proposed for inclusion in an ITP. Instead, the best available scientific information was used to describe basic habitat relationships and to determine the priority habitat for the species, which is typically the habitat known to be the limiting factor, and thus the focus of management attention, for the species in the portion of the range encompassed by the project area. The effects of the proposed alternatives on these priority habitats was used as an index to anticipated effects on these species and is a standard and accepted approach used in HCPs and EIS's. The fact that some species have more

information (e.g., the spotted owl) than others does not establish the standard for the amount of information necessary to make informed decisions regarding the effects of the proposed alternatives on each of the species proposed for inclusion on the ITP, whether federally listed or not. Those species not considered to have enough available information to determine overall effects of the proposed actions will not be included in an ITP.

SS-2 to SS-4

The EIS/EIR did not use the habitat guilds defined in the HCP to determine anticipated effects of the proposed alternatives on species.

SS-5

With respect to the habitat guilds, the EIS/EIR did not use the habitat guilds defined in the HCP to determine anticipated effects of the proposed alternatives on species. With respect to habitat boundaries depicted on maps, recognizing the complicating factors identified by the reviewer, defining such boundaries is a standard and accepted approach in the scientific literature, HCPs, and EIS/EIRs for delimiting and quantifying habitat and is considered adequate for comparing the relative effects of the proposed alternatives on species' habitats. In terms of the distinction between Old Growth and Late Seral Habitat, the reviewer is incorrect. Page 3.10-22 of the Draft EIS/EIR states that both uncut and residual stands of old-growth forest are a <u>component</u> (not separate) of what is termed Late Seral Habitat.

SS-6

See response to SS-5 above.

SS-7

With respect to the use of 1986 aerial photos for vegetation mapping, please note that Page 3.10-20 of the Draft EIS/EIR points out that the information on these photos was updated to include more recent timber harvest and vegetation growth. With respect to the WHR database, as presented throughout Section 3.10 of the Draft EIS/EIR, this database was used in combination with the best available scientific literature to define species habitat associations.

SS-8

The marbled murrelet was not considered an "umbrella" species and this assumption by the reviewer is not stated in the Draft EIS/EIR. Rather, similarities in mitigation among late-seral/old growth forest associates is based on similarities in priority habitat associations as defined. Furthermore, Page 3.10-18 of the Draft EIS/EIR does not state or suggest (as suggested by the reviewer) that the murrelet was selected as an "umbrella" species due to its listing status. However, the potential risks of the proposed actions on marbled murrelets in the Bioregion as described in the draft, warranted more in-depth analysis and conservative mitigation measures for this species.

SS-9

As explained on page 3.10-28 of the Draft EIS/EIR, the 400-foot value used to evaluate effects on interior habitat represents a median value based on a range of values presented in the scientific literature. This value was not intended to provide a precise definition or quantification of interior habitat but was selected as an index from which to determine relative effects of the proposed actions on interior forest for those species associated with such forest conditions. Furthermore, as stated on page 3.10-28 of the Draft EIS/EIR, this median value has provided the basis for other large-scale, landscape-level effects analyses elsewhere in the

range of the marbled murrelet. With respect to the definition of habitat fragmentation the reviewer contests, there is no definition of habitat fragmentation on page 3.10-20 of the Draft EIS/EIR.

SS-10

See response to comment SS-8 above.

SS-11

The PVA referred to was not used to prepare the EIS/EIR.

SS-12

PVAs are not required for either listed or nonlisted species to be included in an ITP, but are considered on a case-by-case basis as warranted and deemed appropriate. The best available scientific literature and expert judgment, not PVAs, were utilized for evaluation purposes for both listed and nonlisted species addressed in the Draft EIS/EIR, an accepted and standard practice for evaluation of effects of many similar projects.

SS-13

The reviewer presents an interesting analysis; however, the presentation of the analysis is seriously flawed by lack of information such as sample size, location of studies included in the analysis, et cetera. Please note that PALCO is applying for an Incidental Take Permit for these species and as such, some loss of individuals is expected to occur, but not to the extent that a species population is jeopardized. Effects of a proposed action in the project area are considered at a landscape scale and for the species population as a whole, not just in the Project Area alone. Mitigation for the incidental take of species (as presented in an HCP) is to be commensurate with the anticipated effects of the proposed action on species populations as a whole. An assessment of the proposed take is included in the Final HCP.

SS-14

Goshawks are no longer proposed for coverage under the Incidental Take Permit.

SS-15

Contrary to the reviewer's assertions regarding the stated occurrence and habitat use of the wolverine, as shown in Table 3.10-4 and explained on page 3.10-83 of the Draft EIS/EIR, the wolverine is suspected to occur on both the Elk River Timber Company property as well as the PALCO property. Furthermore, the habitat associations described in Table 3.10-4 and page 3.10-82 of the Draft EIS/EIR are not restricted to boreal forests but include remote montane forests, riparian and wetland meadows, and mature conifer forests along the North Coast of California. Both the habitat and occurrence descriptions for this species in the Draft EIS/EIR are based on the best available scientific literature.

SS-16

The Draft EIS/EIR mistakenly referred to the white-tailed kite as the black-shouldered kite, which is a common name still used by major references on California wildlife. It has been corrected in the Final EIS/EIR.

SS-17

The best available science, including range and habitat information, was used to determine the potential use of the area and effects of the proposed actions on species not yet documented to occur in the Project Area.

SS-18

Effects of the proposed actions on pertinent and measurable elements of the ecosystem relevant to the proposed actions were evaluated in a manner consistent with evaluations of similar actions.

SS-19

Comments noted.

SS-20

Among other things, gains or losses in acreage and/or quality of habitat are considered an "ecological impact". Other pertinent and measurable elements of the environment (e.g., erosion and sediment) affected beyond acreages of habitat are addressed in separate sections of the EIS/EIR.

SS-21

The reviewer is incorrect in assuming that the No Surprises Policy would "negate any requirement for Pacific Lumber Company to manage adaptively". Adaptive management is a key component of the HCP and are unrelated to the No Surprises Policy. As such, modifications to the proposed mitigation in response to adaptive management are not prohibited by the No Surprises Policy.

SS-22

New monitoring and mitigation strategies have been developed to monitor the effectiveness of the proposed HCP and are described in Appendix P of the Final EIS/EIR.

SS-23

Please see responses to previous comments regarding the reviewer's asserted misuse of the term "habitat", the need for what is loosely term an "ecosystem analysis" (see response to SS-18), and problems with the habitat guilds used in the HCP (see response to SS-5). The reviewers assertion that the FREIGHTS model projections were based on erroneous assumptions is unfounded. Finally, the fact that no uncertainty or sensitivity analysis was applied to the GIS maps is not relevant to the adequacy of these maps for displaying accurate vegetation and habitat information for analysis purposes in the EIS/EIR.

SS-24

The literature cited section of the EIS/EIR includes all the standard information necessary to locate any of the literature cited. All reports cited include the best available scientific information on the various subject matters, whether it be unpublished reports or "compendia".

SS-25

Species data gathered in the Project Area is considered reliable to support or confirm the occurrence of those species expected or suspected to occur in the Project Area for the purposes of the EIS/EIR.

SS-26

Thank you for your comments.

SSC-1

The Services believe that the HCP will conserve and, over time, enhance habitats of the covered species. The HCP will conserve the ecosystems upon which the covered species depend and is consistent with the

purposes of the ESA, set forth at 16 U.S.C. Section 1531, and with the Services' responsibilities regarding these species.

SSC-2

The four public hearings that were held to receive comments from the public on the HCP, SYP, EIS, and EIR produced important information that was carefully considered by the Wildlife Agencies. For example, comments from scientists and other experts regarding riparian buffers have resulted in the application of a 30-foot no-cut buffer on Class III streams on the Covered Lands. None of the agreements or associated documents leading up to the development of the HCP were pre-judged the outcome. The Wildlife Agencies agreed only to attempt to develop a plan that would be scientifically defensible and biologically justified, and have done so with the Final HCP. The public has not been excluded from the decision-making process, but rather has played an important role in shaping the Final HCP. The Services believe they have acted in a manner that is consistent with their authorities and responsibilities.

SSC-3

Acquisition of the PALCO ownership as an alternative in the EIS/EIR was rejected for the reasons stated in Pages 2-6 and 2-7 of the Draft EIS/EIR. These include the failure to identify a source of private funding to acquire PALCO property; the rejection by California voters to acquire the Headwaters forest through passage of a bond; and the recognition that a "debt for nature" swap would fall outside the jurisdiction of the Wildlife Agencies.

SSC-4

The Services have determined that the No Surprises policy has a useful and legally valid function in the HCP. As applied here, the policy is consistent with the Services' regulations published at 50 CFR sections 17.3, 17.22(b)(5)(iii)(B), 17.32(b)(5)(iii)(B), and 222(g)(3) (63 Fed.Reg. 8859), and is also consistent with the legislative history of the ESA (H.R. Rep. No. 835, 97th Cong., 2d Sess. 29 [1982]).

SSC-5

Considering the time frames stipulated by PL 105-83, that the HCP/SYP was available for public review for over three months, and that the Draft EIS/EIR was available for public review for 48 days, the agencies elected not to extend the comment period.

SSC-6

The complexity of the project and the highly technical nature surrounding the scientific analysis has resulted in the need for extensive documentation and highly technical scientific analysis. The agencies have done their best to explain the complexity of the project components and provide a balance between providing a technically accurate scientific analysis which is accessible by the lay person.

SSC-7

While it is impossible to predict future environmental events and their effects with absolute certainty, the agencies have striven to disclose the expected environmental effects based on the reasonably foreseeable actions using best available scientific information to assess likely environmental outcomes.

TA-1

We concur with this point; see responses to TA-12 and TA-13.

TA-2

See response to TA-12. In addition, mitigation measures will be part of the gravel mining amendment to the HCP.

TA-5

The indicated gravel mining operations are also evaluated in the Draft EIS/EIR. In addition, NMFS has determined that the ITP will not include gravel mining.

TA-6 through TA-9, and TA-11 through TA-14

Gravel mining is no longer part of the HCP and will not be covered under the federal incidental take permits. PALCO will continue to operate under its current permit from the U.S. Army Corps of Engineers, which remains in effect until the end of 1999. Over the next year, the Services will review information from PALCO concerning gravel mining operations on the Covered Lands and will work to amend the incidental take permits if they determine that incidental take authority can be granted.

TA-10

See responses to TA-12 and TA-13.

TA-15

See responses to TA-12 and TA-13. Additionally, the effects of gravel bar skimming on both stream morphology and riparian vegetation will be analyzed during the gravel mining amendment process to the HCP.

TA-16

See responses to TA-12, TA-13, and TA-15. In addition, we concur that using established road corridors to minimize the impacts to riparian vegetation is not effective if gravel mining is occurring on the entire gravel bar.

TAM-1

As noted in the Draft EIS/EIR, in the subsection titled Reporting Annual Monitoring, under Section 3.9.5.2, annual performance summaries and monitoring will occur so that anticipated results can be reviewed and responded to.

TAM-2

See response to C-46.

TAM-3

The reviewer is directed to the Draft EIS/EIR for additional discussion of alternatives. In addition, see responses to GEC-9 and TNL-30. PALCO's current inability to harvest timber in areas such as Owl Creek is addressed in Alternative 1 in the Draft EIS/EIR. The purpose of PALCO's application is to receive an incidental take permit; consequently, alternatives to its proposed project are addressed in the Draft EIS/EIR.

Based on public comments and FESA and CESA issuance criteria, effectiveness and compliance monitoring plans have been revised. Please see Appendix P in the Final EIS/EIR.

TAM-4

The agencies disagree with this comment that an additional set of analysis of Alternative 3 is necessary. The indicated constraint of harvesting 2 percent of inventory for Alternative 2 is related to minimizing potential environmental effects by reducing overall harvest levels under the selective harvest alternative. This approach directly reflects the responsiveness to public comment asking for PALCO to manage its lands under a third-party forest certification procedure (see sections 2.3 and 2.4). In addition, the range of alternatives analyzed in the Draft EIS/EIR contains a wide decision space within which the agencies can choose.

TAM-5

The agencies disagree with the contention of this comment that the alternatives analyzed do not provide a meaningful comparison of LTSY. The Draft EIS/EIR evaluates a wide range of issues brought up during public scoping including different land bases, different levels of mitigation and take, and different levels or types of timber harvest (see sections 2.3, 2.4, and 2.5, plus Appendix D Scoping Report). These are the primary constraints on LTSY, and the resultant LTSYs are disclosed in the Draft EIS/EIR. The agencies disagree that there is not a competent analysis of other issues in the Draft EIS/EIR. The various resource sections discuss in detail the effects of the alternatives and they provide a wide decision space for the decision makers. In addition, see responses to GEC-1 and GEC-9.

TAM-6

See response to TAM-5.

TAM-7

As noted in the Habitat Conservation Planning Handbook, contribution to species recovery is often an integral part of an HCP, but it is not necessarily an explicit statutory requirement. With regards to the HCP overall, see responses to ALA-4, ALA-5, ALA-10, ALA-14, ALA-47, and ALA-50.

TAM-8

Opinion noted. The effects of this definition of late seral is what is analyzed in the EIS/EIR and its limitations are noted. The stands are not mapped, there are a constraint on the model and their existence would have to be demonstrated in each THP.

TAM-9

The methodology for the disturbance index has been made more specific in the Final HCP (see Appendix P of the Final EIS/EIR) with respect to size of the area evaluated and restrictions on activities within them.

TDR-1

Comment noted. Refer to the responses to ALA-27 and IFR-11.

TDR-2

We agree that Class III watercourse protection needs to be enhanced. Refer to the responses to ALA-48 and CAG-44.

TDR-3

The Draft EIS/EIR presented extensive discussion on the effects of the plan on coho salmon. Refer to Sections 3.4 through 3.9 in the Draft. This comment provides no new information or analysis to contradict that discussion.

TLG-1

Comment noted. Data have been incorporated into Section 3.10 of the Final EIS/EIR.

TNL-1

A signed and dated application from PALCO was forwarded by FWS to NMFS. The FWS application form has been accepted by NMFS and determined to be sufficient for processing by NMFS.

TNL-2

In September 1996 Agreement among the federal and State of California governments, MAXXAM and PALCO represented an agreement to go forward with several regulatory and transactional processes rather than a commitment to specific actions or outcomes. Thus NEPA and CEQA compliance was not required at the time the Agreement was signed. The agencies are currently completing their NEPA, CEQA, ESA, CESA and State Forest Practices Act processes prior to implementing any of the state or federal actions outlined in the September 1996 Agreement. The agencies disagree with the commentor's contention that the EIS does not serve as a means of assessing environmental impact and that it justifies decisions already made. First, no decision has yet been made. Second, the release of the Draft EIS/EIR for public comment, and the response to that comment in the Final EIS/EIR, does follow the appropriate NEPA, CEQA, and SYP procedures for disclosing and mitigating effects, and for receiving and considering public comment. Consequently, it fulfills exactly the provided citations.

The feasibility of the project as a whole is dependent upon appropriations by both the Congress and the state legislature, and such appropriations have "sunset" dates after which they are not available or must be re-authorized. Since re-authorization is far more difficult than initial authorization, and may well be impossible, the practicality of the project and the timeline for the process to complete it are inexorably constrained by the budget sunset dates. Within such constraints, all of the legal requirements for issuance of an ITP by March 1, 1999 have been or will be fulfilled.

TNL-3

Studies do not need to be published in order to be used as the basis for information in an EIS/EIR. It is common for studies or field work to be carried out to provide information for use directly in an EIS/EIR without the study being put into published form. So long as the information can be understood in the EIS/EIR, there is no requirement to provide a separate write-up of the study or a copy of the field notes for public review.

The agencies believe that all pertinent information has been readily available to the public for review. See response to SCE-3.

TNL-4

The Draft EIS/EIR reviews a wide variety of literature and information specifically pertinent to PALCO's ownership. The Draft EIS/EIR does not misrepresent the environmental setting as suggested by this comment. The information in the selective quote at (a) is specifically addressed in the Draft EIS/EIR,

including discussion and reference to the quoted final rule. That final rule, however, also addresses the other environmental issues such as ocean conditions that the indicated Draft EIS/EIR quote refers to.

TNL-5

The Draft EIS/EIR does not ignore documentation of the existing conditions on the PALCO ownership. The conditions described in the exhibits provided fall within the range of descriptions provided within the Draft EIS/EIR particularly in sections 3.4, 3.6, 3.7, and 3.8 including, but not limited to, discussions of 303(d) impaired water bodies and drainages identified by CDF as cumulatively impacted by sediment. The effects of timber harvest and the effectiveness of proposed mitigation measures are evaluated extensively in the Draft EIS/EIR. In addition, the issues discussed in the literature cited in exhibit 3 are also discussed in the Draft EIS/EIR. Consequently, the agencies disagree with the contention of this comment. In addition, see responses to GEC-8, GEC-10, and GEC-52.

TNL-6

The Draft EIS/EIR addresses the current degraded aquatic condition and evaluates the effectiveness of the proposed mitigation in Sections 3.4, 3.6, and 3.8. The agencies consider that this level of analysis is appropriate to determine if the indicated mitigation measures will provide for a properly functioning aquatic habitat over the life of an ITP. In addition, based on public comments and issuance criteria, the agencies consider additional mitigation to be appropriate with respect to the cumulative effects/disturbance index, as indicated in the Final EIS/EIR, Appendix P.

TNL-7

The Draft EIS/EIR presents discussion of the current condition of PALCO ownership in the affected environment portion of each section. In addition, the five watersheds identified by CDF as cumulatively impacted by sediment are discussed as are streams listed on the 303(d) list. It is obvious that the conditions on this landscape relate to both natural and management activities. The effects of past management activities and natural events are discussed in section 3.6.1.4 and 3.7.4.2. See also response to comment GEC-45.

TNL-8

The effects of timber harvest activities, and their mitigation, on fish is discussed in section 3.8.

TNL-9

Table S-2, column labeled “Prior Impacts to Watersheds” only lists watersheds that are identified by CDF as cumulatively impacted by sediment. The information mentioned in the comment is included in the column “Other Measures to Reduce Sediment to Streams” .The Draft EIS/EIR does identify the indicated waters as 303(d) listed in Table 3.4-4. Jordan Creek, Bear Creek, and Stitz Creek are tributaries to the Eel River and are included in that listing. The Draft EIS/EIR also identifies and discusses the five watersheds identified by CDF as cumulatively impacted by sediment.

TNL-10

The assertion that a project description must discuss an impact is incorrect. Discussion of the impact of any taking of coho salmon is an effect of the project, not a component of the project description. The Draft EIS/EIR adequately described the environmental setting including detailed descriptions of affected resources and detailed discussions of anticipated changes in those affected resources for each alternative.

TNL-11

The decision whether to issue an ITP is based not only on the applicant's HCP but also on the analysis in the associated EIS/EIR, the agencies' biological opinions, and whether permit issuance criteria have been met (documented in the Services' Statement of Findings). Although there were some disagreements or slight inconsistencies between the Draft HCP/SYP and the Draft EIS/EIR, the effects associated with the proposed action with respect to the issue of tree size distribution that was analyzed in the Draft EIS/HCP constituted a worst-case analysis. Consequently, the potential effects are disclosed to the public and the decision makers. In addition, the basal area on the ground is the target, while the tables are illustrative.

TNL-12

Any analyses that would occur in the future (e.g., watershed analysis) would increase the specificity or increase the effectiveness of protection over that analyzed in the Draft EIS/EIR. Consequently, with respect to these future analyses, the Draft EIS/EIR analyses worst-case scenarios. In addition, their presentation in the Draft EIS/EIR informs the public and decision makers of processes that would allow mitigation modification and under what circumstances mitigation modification could occur. See also response to comment RAM-6 and RAM-19.

TNL-13

With the implementation of AB 1986 and the additional mitigation added to the Final HCP (see Final EIS/EIR, Appendix P), the points in this comment regarding tree retention are addressed.

TNL-14

It is difficult to understand the presumption of this comment that the Draft EIS/EIR does not evaluate the effects of PALCO's timber harvest. All the information in the quote from Robert Hrubes is taken from the Draft EIS/EIR which indicates that that document certainly does address those effects. The effects of this level of harvest is discussed throughout every resource section Chapter 3 in the Draft EIS/EIR. Additionally, as stated in the section 2.8, an HCP is a mitigation plan and the effectiveness of the proposed mitigation must also be evaluated in the NEPA/CEQA document. In direct contradiction of the commentor's contention, the NEPA/CEQA document would be deficient if it did not address the effects and effectiveness of proposed mitigation. In addition, see responses to GEC-1, GEC-9 and GEC-11. With respect to future studies, see response to TNL-12 and GEC-1. In the same manner, the cumulative effects analysis correctly analyzes both the effects of the timber harvest and associated activities and the effects of the associated mitigation. In addition, the comments at TNL-14 all have to do with effects, they have nothing to do with the commentor's header "VI Failure to Present an Accurate and Stable and Finite Project Description." Effects are the result of project implementation; they are not part of a project description.

TNL-15

With respect to post-approval studies, see response to TNL-12. Because the analysis in the Draft EIS/EIR is worst case in these examples, the agencies disagree that the effects are left indeterminate and uncertain. Rather these effects are specifically disclosed.

The federal and state governments are considering issuance of an ITP for coho salmon because it is part of PALCO's application. Whether an ITP is issued for coho salmon will be based on the entirety of information considered in the Draft HCP/SYP and the Draft EIS/EIR, public comments on the draft documents, the biological opinions, and whether permit issuance criteria have been met. Issuance of ITPs are not based solely on information discussed in the quote of Chris Frissel.

TNL-16

Channel Migration Zone (CMZ) evaluation and mapping will be conducted as part of the watershed analysis process. All segments of Class I and II watercourses that have a Rosgen (1996) type C, D, or E channel morphology will be examined to identify the current boundaries of the CMZ. The CMZ boundary generally corresponds to the modern floodplain, but may also include river terraces that are subject to significant bank erosion. The CMZ is the area adjacent to streams constructed by the river in the present climate and inundated during periods of high flow. The floodplain is delineated by either the flood-prone area or the 100-year floodplain, whichever is greater (Rosgen 1996).

Prior to watershed analysis, areas must be analyzed separately by PALCO on a THP basis using a qualified fluvial geomorphologist before any THP that includes a CMZ, or that may be affected or affect a CMZ can be approved. Additionally NMFS, CDFG, FWS, and EPA or NCRWQCB will be consulted regarding any such mapping.

Within CMZs:

1. PALCO shall not harvest, including sanitation salvage and exemption harvest, in the CMZ.
2. In cases of emergencies that could result in the loss of life or property, and in accordance with prior agreement with the wildlife agencies, harvest may be allowed in the CMZ. Loss of property is defined as a demonstrated high risk of loss of capitol improvements such as bridges, roads, culverts, and houses; however it does not include the loss of vegetation.
3. No herbicides or pesticides will be used in the CMZ. Aerial fertilization is excluded from the CMZ.

In response to public comments and permit issuance criteria, the following procedure will be followed for implementing prescriptions developed through watershed analysis. The agencies will review each watershed analysis upon its completion. The agencies will establish the site-specific prescriptions for implementation upon the completion of watershed analysis. A peer review process is required if any PALCO or wildlife agency member of the watershed analysis team disagrees with the prescriptions recommended by the analysis team.

The range of prescriptions for buffer widths does not include additional protections for mass wasting areas of concern and surface erosion. The range of buffer widths may exceed the maximum limits if mass wasting or surface erosion is identified as potential impact mechanisms. Maximum prescriptions for mass wasting areas of concern can include exclusion of all harvest and road building. Please see the response to GP-11 for differences in prescriptions.

TNL-17

Correct. The PWA procedure provides more detailed, site-specific data than the current Washington method. However, the data generated by both approaches is similar and will integrate easily into the watershed analysis process. See also response to DRM-7.

TNL-18

See responses to CAF-5, CAF-6, CAF-7, LMR-12, LMR-15, ME-4, DRM-38 and CAG-16.

TNL-19

See response to TNL-18.

TNL-20

See responses to comments by TA.

TNL-21

With respect to claimed post approval studies, see response to TNL-12, GEC-1 and GEC-12. With respect to the citation of page 3.6-36, that is a simple statement of fact. See also Appendix P for the updated versions of HCP habitat protection provisions (e.g. winter road construction).

TNL-22

See response to comment RAM-3.

TNL-23

Comment noted. The wildlife agencies disagree that the sideboards placed on aquatic protection measures or the provisions of the IA constitute an unlawful delegation of authority to PALCO. The sideboards contained in the final Aquatic Conservation Plan of the HCP's Operating Conservation Program attached to the Final EIS/EIR as Appendix P reflect the exercise of agency discretion in establishing appropriate boundaries on the conservation and management measures to be required of PALCO under the ITPs as a result of future watershed analyses. Those sideboards are based on the agencies' judgement regarding the measures necessary to obtain properly functioning riparian habitat conditions based on the best available science and information about the Covered Lands and the mitigation and minimization measures necessary to satisfy the permit issuance criteria under § 10 of FESA and § 2081 of CESA..

TNL-24

The agencies disagree that the analyzed time frame is inappropriate. The generally degraded existing aquatic conditions are discussed in detail. There is no practical method to make aquatic habitat better in the immediate short term. It is NMFS policy to attain properly functioning aquatic habitats, and these effects require a long-term approach. This is what is proposed in the HCP and evaluated in the Draft EIS/EIR.

The agencies agree that short-term impacts may occur as part of implementing the HCP/SYP. For example, the road storm-proofing program may result in short-term increases in fine sediment as stream crossings are removed or replaced. However, the consequences of not implementing the storm-proofing program would likely result in far greater impacts both short- and long-term. Estimating the potential losses of fish in interim would be very difficult if not impossible and any such results would likely involve assumptions that would render the results questionable, at best. The current state of the fisheries is discussed in the Draft EIS/EIR Section 3.8.

In response to public comments and permit issuance criteria, additional mitigations are intended to benefit aquatic habitat. The agencies agree that benefits to aquatic habitat and coho salmon may take several years or decades.

Terrestrial habitat is only one of many significant factors that influence trends in coho salmon population. Because activities in terrestrial aquatic habitats cannot control any of the factors resulting from non-terrestrial conditions (e.g., ocean conditions, climatic variations, and ocean harvest), addressing the success of this HCP with regards to fish numbers would be inappropriate. Analyzing population trends would not necessarily be related to effects of PALCO's HCP, whereas the effects on habitat are related to population trends.

TNL-25 and TNL-26

The agencies disagree with the assertions of this comment. As noted in response TNL-7, the existing condition is extensively discussed in the affected environment sections of Chapter 3. In addition, see responses to GEC-8, GEC-10, GEC-11, GEC-18, and GEC-64. The effects of each alternative are specifically described in terms of effects related to the application of the proposed actions and associated mitigations with respect to the existing condition of the landscape. This comment incorrectly states that effects are only considered with respect to other alternatives. With respect to section 3.7, in direct contradiction to this comment, the Draft EIS/EIR explicitly states that implementation of all alternatives will reduce potential cumulative impacts by minimizing sedimentation, enhancing LWD and shade, and restoring diverse riparian forests (page 3.7-87 to 3.7-89). All of these statements are considered in direct comparison to existing conditions. Again, on page 3.7-89, the effects of implementation of a variety of new management plans on "Current degraded aquatic and riparian habitat" are discussed. Consequently, this comment completely misinterprets the Draft EIS/EIR.

With respect to the comments on Section 3.8 and other sections, since the baseline utilized is correct the indicated analysis is also correct. The repeated assertion that this is not what was done in the Draft EIS/EIR is incorrect.

Similar to comment GEC-64, the commentor seems to consider the "no project" condition to be a complete cessation of logging now and in the future, which is not a correct interpretation of a permitted land use on property lawfully zoned and designated for timber production. In addition, the very purpose of an SYP under the states Forest Practice Rules is to maximize "sustained yield" (read "harvest") – production of an ecologically and economically valuable resource. The No Project alternative, as defined in the EIS and extrapolated into the future, is a reasonable attempt to define what would happen in the event that no ITP were issued. Alternative 1 thus compares the future (i.e. logged) conditions with no permit with "the conditions on the ground today"– the baseline.

TNL-27

See responses to comments GEC-8, GEC-18, GEC-64.

TNL-28

Other HCPs were included in the cumulative effect analysis which have either been approved or have been developed to the point where it was reasonable foreseeable to anticipate what conservation strategy might be implemented thus allowing some assessment of its environmental effects. It would be highly speculative to assume any particular management prescriptions for HCPs in the preliminary planning stages.

TNL-29

The DEIS/EIR concluded that the mitigation measures in the HCP would offset the adverse effect associated with forest management conducted under the HCP and thus, not incrementally contribute to cumulative adverse effects. The DEIS/EIR did not suggest that implementation of the HCP would avoid cumulative adverse impacts on resources resulting from other land management activities occurring in the region.

TNL-30

The agencies disagree with the commentor's assertion that the alternatives analysis is inadequate. Also, see responses to GEC-9. They also disagree with Mr. Lippe's assertion that the no project alternative consists of "no logging." (See response to comment TNL-25 and TNL-26.) As described on page 2-9 of the draft EIR, PALCO is in the forest products business. The existing condition on PALCO land is management of the

timberlands for production of forest products. The company is cutting, replanting, and growing timber for production. This activity has included some cutting of old growth redwoods and efforts to cut more. Purely in terms of timber production, old growth areas are regarded as stagnant because growth of wood is slow and is roughly balanced by death and decay. The production goal of the company has been to convert old growth stands by cutting the old trees and replacing them with vigorous young trees that will generate more new wood per acre.

Under the existing condition that CDF regards as the "no project alternative," PALCO has been managing its lands a commercial timberlands for many years. The company has been seeking approval of THPs in old growth stands while actively harvesting second and third growth stands. CDF has disapproved some THPs when it has been shown that the THP as proposed would cause a take of one or more threatened or endangered species and when PALCO has been unable to identify ways to avoid the take. Other THPs have been delayed while CDF has asked PALCO for more information to show whether threatened or endangered species are present and if so, whether a take could be avoided. Other issues such as maintenance of examples of all forest stages, continuity between late seral stands, and the need to develop mitigation for significant environmental effects have also delayed the processing of THPs involving old growth. But the delays of these THPs is not expected to be a permanent ban on harvesting the areas involved. When and if the problems can be resolved, harvesting could proceed in some manner.

In contrast to the existing and projected activities on the PALCO ownership, the purpose of the proposed Headwaters acquisition is to protect that area from the timber harvesting that the landowner is seeking to carry out under existing law. If there would be "no logging" in the absence of the Headwaters acquisition proposal, there would be no need for the expenditure of public funds to purchase the Headwaters Forest.

On the remainder of the PALCO holdings, the no project alternative to the HCP, the incidental take permit, and the sustained yield plan is incremental THP by THP approval of timber harvesting combined with replanting and growing of trees under the current Forest Practice Act and other applicable laws (Alternative 1 in the EIS). To achieve a condition of "no logging" for these lands, other legal controls would be needed. Mr. Lippe's comment does not suggest what these controls would be. Because new legal initiatives would be required to put such controls in place, CDF does not regard a "no logging" condition to be a valid no project alternative.

Mr. Lippe faults the state analysis of the no project alternative for being a short-term analysis but he does not contest the state's conclusion that any effort to see beyond the short term in this situation would be simply speculation as proscribed by CEQA Guidelines section 15145. The EIR on page 2-24 lays out the reasons for the state's conclusion. Simply put, the swirl of conflicting political pressures around the old growth Headwaters Forest and the practices of PALCO is so strong and varied that it is impossible to see beyond the short term. Among the uncertainties that would affect how much acreage could be logged include the proven absence of murrelet occupancies, and the results of a takings lawsuit by the applicant. Any effort to forecast future conditions to match the expected 50-year life of the federal incidental take permit is to engage in self delusion and an effort to mislead the public. The life of the state sustained yield plan is ten years; a period much closer to the state's projection of conditions in the absence of the project. The description of the no project alternative does include facts and analysis and not just a bare conclusion. The text explains the reasons for the conclusion on pages 2-22, 2-24, and 2-25. See also response to comment GEC-14.

The comment faults the EIR for not analyzing alternative locations but fails to mention that Citizens of Goleta Valley v. Board of Supervisors II (1989) 216 Cal. App. 3rd 48, declined to require an analysis of alternative locations in every case and further declined to set forth a bright line rule to define when

alternative locations would need to be analyzed. Instead, the decision called for alternative locations to be analyzed when it would be reasonable under the circumstances of the project involved.

Under the circumstances of this proposal, alternative locations are neither reasonable nor feasible but are simply speculative. The Pacific Lumber Company has owned its lands for many years. The company wishes to use the lands for the purpose for which they are zoned -- timber production. Other lands are not currently available on the market for purchase by PALCO so that PALCO could shift operations from its currently owned lands to other locations. The Louisiana Pacific timberlands that were offered for sale on the market have been purchased by other companies. Further, other lands in the North Coast area have similar geological problems with general uplift, soft bedrock, unstable slopes and rapid erosion, and contain multiple special status species as well. Pacific Lumber could not simply avoid its environmental problems by moving its timber operations to other locations within an economical transportation distance of its mills in southern Humboldt County.

Because it is not feasible simply to avoid the environmental problems by moving PALCO's operations to less sensitive locations, the environmental problems will need to be addressed through the processes described in this EIR combined with the evaluation of each THP through the existing functional equivalent process. This process involves the development and application of mitigation measures and may include denial of a THP if the environmental risks are simply too high. The evaluation of sequential THPs which shift the focus of timber harvest from one part of the large PALCO holdings (329 square miles) to another, over time, are in essence a version of "alternative locations" for the project.

TNL-31

See responses ALA-5, ALA-10, ALA-14, ALA-48, and ALA-50.

TNL-32

See responses to CAF-5, 6 and 7.

TNL-33

Refer to the response to TNL-36 and IFR-9. The science and analysis that provide the basis for the general recommendations of the Mantech report and the aquatic strategy of the FEMAT report comprise much of the underpinnings of the aquatic strategy presented in the Final HCP/SYP and the Final EIS/EIR. The design of the aquatic strategy of the HCP/SYP, however, also relies on information regarding baseline conditions for the North Coast region. Finally, the aquatic strategy was developed specifically to meet the goals and objectives of the HCP, which are not the same as those for which the measures in the Mantech report and the FEMAT report are intended to meet.

TNL-34

Refer to the response to TNL-33, TNL-36 and IFR-9.

TNL-35

The Services do not regard Option 9 of the Record of Decision and the Final Supplemental EIS as the maximum practicable take minimization and mitigation for PALCO's lands under the Final HCP and the federal permit. Option 9 was developed and selected for use on federal lands as part of the President's Northwest Forest Plan (FEMAT) and relies heavily on wide riparian buffers to protect 199 riparian species across 24 million acres of land. As noted elsewhere (see response to GM-1), the PALCO HCP addresses the needs of 17 species on approximately 211,000 acres. The HCP includes conservation and mitigation measures that are not found in Option 9, such as road stormproofing. The Services believe that the

combination of conservation and mitigation measures contained in the HCP's Operating Conservation Program will, to the maximum extent practicable, minimize and mitigate the impacts of taking resulting under the permit issued to PALCO.

TNL-36

The wildlife agencies disagree. As noted elsewhere (see responses to TNL-1, GM-1, and SSC-2) the HCP is consistent with the science underlying FEMAT and the Mantech report and has applied information received from experts during the public comment period. The Aquatic Conservation Plan was developed based on a careful review of the scientific literature and the wildlife agencies believe that it reflects the best available science. The wildlife agencies considered and addressed the comments and opinions expressed by those on the list of scientists presented in the comment. We disagree with the statement they "…unanimously and roundly rejected the HCP/SYP and the EIS/EIR for their failure to use the best available science….". The Final HCP/SYP and EIS/EIR sufficiently describe the environmental setting and, where information is currently missing, make assumptions that will protect covered species until more information is acquired. For example, the approximately 50,000 acres of PALCO's lands that have not yet been characterized for mass wasting are treated as a mass wasting area of concern and subject to mass wasting restrictions.

TNL-37

See responses to TNL-36 and TNL-38.

TNL-38

See the response to GEC-8, GEC-18, and GEC-64.

All of the riparian function analysis and the related aquatic habitat analyses in the Draft EIS/EIR explicitly use the FEMAT and Mantech reports as the criteria against which potential effects are measured. Consequently, the agencies disagree with the contention of this comment that the level of risk associated with the proposed RMZs is not evaluated – that is clearly what is evaluated in the Draft EIS/EIR. The reviewer is directed to Section 3.7 (e.g., Section 3.7.4.1 and Figures 3.8-2a through 2e all of which specifically reference FEMAT, 1993). The reviewer is reminded that the application from PALCO is for an incidental take permit. The riparian buffers presented in FEMAT and Mantech are associated with no take or very minimal take; consequently, if they were applied to PALCO lands, there would be virtually no need for them to apply for such a permit. The issues of reducing the likelihood of survival and recovery of the species in the wild are evaluated in detail in the NMFS biological opinion and the statement of findings.

TNL-39

This comment implies that there is only one means of assessing impacts to the species. The agencies disagree that this is true. The Draft EIS/EIR considered the range of potential effects related to timber harvest and road building and evaluated the effectiveness of the proposed mitigation measures.

TNL-40

The Disturbance Index (DI) approach will limit the rate of timber harvest and related activities in hydrologic units. Additionally, to ensure that coho salmon in individual Class I watercourses are not extirpated, the DI will be assessed at this scale also.

TNL-41

In response to public comments and permit issuance criteria, additional mitigations are expected to improve coho salmon habitat over the life of the plan. Also, see responses to SF-18 and TNL-24.

TNL-42

The comment criticizes the reference in the draft Implementation Agreement to "jurisdiction over the timberlands of the State of California." The comment points out correctly that the HCP/SYP applies to private land, not to state owned timberland.

The wording in this section of the recitals in the Implementation Agreement could have been clearer by speaking of "timberlands in the State of California" rather than "of the State of California." The language was meant to be interpreted as applying to all timberlands in California as defined in the Forest Practice Act. Following this interpretation, the timberlands referred to include all non-federal timberlands in the state. This is the interpretation the commentor seems to desire for the agreement.

The comment is incorrect in asserting that the Timberland Productivity Act of 1982 confers no jurisdiction on CDF. Most of the Act addresses the designation of timberland production zones by units of local government. However, Government Code Section 51133 in the Act does give CDF a role in approving conversions of timberland to other uses. The Board of Forestry primarily plays this role, but Public Resources Code Section 730 declares that the Board of Forestry exists within the Department of Forestry and Fire Protection, that is, CDF. Accordingly, a reference to the Timberland Productivity Act of 1982 is not inappropriate.

TNL-43

Comment noted. See responses to SCE-11, item H and SCE-23. The identification of the Covered Lands in the HCP and EIS/EIR is adequate to allow informed public review and comment on the proposed HCP.

TNL-44

The list of species for which coverage is requested by PALCO is identified at Volume I, page 7 of the draft HCP. This list identifies those species listed under CESA.

TNL-45

Comment noted. See response to ELF-22.

TNL-46

The IA is a document that memorializes the commitments of PALCO and the wildlife agencies with respect to the ITPs. CDF is not issuing an ITP to PALCO. Its responsibilities under Forest Practices Act and other state laws are related to but distinct from the ITPs which form the subject matter of the IA. Therefore, it is not necessary or appropriate to detail CDFs responsibilities under such state laws in the IA.

TNL-47

Comment noted. Section 3.1.1 of the IA does not contain a loophole to allow logging in MMCAs. Section 3.1.1(b) prohibits any removal of timber from an MMCA, unless specifically allowed by the wildlife agencies based on a determination by the agencies that such timber removal would be beneficial to the marbled murrelet and its habitat and conform to the Aquatics Conservation Plan of the HCP's Operating Conservation Program. See response to SCE-63.

TNL-48

Comment noted. Section 3.1.1(b) of the IA clearly states that any activities apart from those specifically identified in § 3.1.1(a) will require compliance with all applicable laws including NEPA and CEQA.

TNL-49

Comment noted.

TNL-50

Section 3.1.2 has been completely revised. See response to comments SCE-68 -73.

TNL-51

Section 3.1.3.1 of the IA has been completed revised to reflect the provisions of AB 1986. Watershed analysis is now mandatory and must be completed within five years from the date the ITPs are issued. PALCO must implement the site specific prescriptions established by the wildlife agencies following watershed analysis within the framework of the final Aquatics Conservation Plan of the HCP's Operating Conservation Program in Appendix P of the Final EIS/EIR. The agencies have not unlawfully delegated their authority to PALCO to establish such prescriptions. See also responses to SCE- 77 through SCE- 81.

TNL-52

Section 3.4.3 of the IA has been renumbered as § 3.4.4. The section has been revised to state that "PALCO shall not be precluded from having a representative present for any such interview." This provision does not unlawfully delegate the agencies' enforcement authority to PALCO.

TNL-53

See response to SCE-11, SCE-23 and SCE-107. These responses apply equally to CDFG under § 2081 of CESA.

TNL-54

See response to comments SCE-117 and SCE-119-120. As provided in § 5.3.2 of the IA, a disposition of Covered Lands under circumstances where other lands of equivalent size and habitat value are included as Covered Lands will be subject to "any required environmental analysis" under NEPA and CEQA. Such review would include opportunity for public review and comment.

TNL-55

See response to SCE-3, point 3, SCE-11, item J and SCE 123.

TNL-56

See response to ELF-22.

TNL-57

See response to SCE-129. As part of the § 7 analysis under FESA the FWS and NMFS will determine whether issuance of the proposed ITPs would adversely modify the critical habitat of any listed species. The same analysis would be required in the case of future ITP amendments.

TNL-58

See response to ELF-29, SCE-135 and TNL-51.

TNL-59

See response to SCE-132. Allowing PALCO to rely on the current No Surprises rule except where such reliance is prohibited by statute or court order is consistent with

50 C.F.R.13.28(a)(4), to the extent the latter regulation has any relevance to the rule.

TNL-60

Comment noted. See response to ELF-35 and 37.

TNL-61

Comment noted. Section 6.4.1 as currently worded provides that The Pacific Lumber Company is responsible for administering the permit on behalf of all three companies and that a violation by any of the companies of the provisions of the HCP may be attributed to all of the companies and result in suspension or termination of the ITPs.

TNL-62

Comment noted. See response to SCE-143 and SCE-156. The bracketed language does not affect the description of the proposed action or its environmental effects as analyzed in the EIS/EIR and does not render the IA unreviewable. The commentor has not provided any substantive comments on the bracketed language in either section 8.2 or section 9.1.

TNL-63

Comment noted. Section 8.5.2 does not, contrary to the commentor's suggestion, confer on PALCO Section 9 immunity for take not authorized under the ITPs. Section 8.5.2 does not address PALCO's § 9 liabilities but rather the company's continuing obligation to mitigate fully for the impacts of all take carried out pursuant to the relinquished or revoked ITPs.

TNL-64

The wildlife agencies agree that the Headwaters Forest is not mitigation for take authorized under the ITPs and that the HCP and Headwaters acquisition are separate transactions. However, the biological value of Headwaters is appropriately considered as part of the environmental baseline in determining the extent of full mitigation to be required of the company where an ITP is terminated by the wildlife agencies through no fault of PALCO, e.g., where continuation of the permit would result in jeopardy to a Covered Species or a change in law prohibits continuation of a Covered Activity.

TNL-65

Comment noted. By way of example, § 8.6 of the IA identifies the failure to file a report on the date due as a "non-substantive" breach of the ITPs. Actions of a similar nature which do not affect the conservation and management provisions of the HCP would be considered "non-substantive" breach of the ITPs, so long as PALCO promptly takes action to cure such breaches.

TNL-66

CDF disagrees that the method used in the SYP to calculate LTSY does not meet the requirements of the Forest Practice Rules. The calculation of LTSY used in the SYP is based on a commonly accepted method that has been accepted by the California State Board of Forestry.

TNL-67

The calculation of LTSY is based on a commonly accepted method that has been accepted by the California State Board of Forestry. Therefore, CDF has determined that the SYP is in compliance with requirements for calculating LTSY and average annual projected harvest.

TNL-68

The temporal resolution of the harvest schedule is by decade. This a commonly accepted method of calculation. Calculation based on the many combinations of rolling averages would be unnecessarily detailed and speculative.

TNL-69

CDF disagrees that the SYP fails to provide evidence that 10 percent of the forest will be in late seral stage or to disclose the criteria used for "late seral". The criteria for late seral is described in Section 3.9.1.4 of the EIS/EIR. Inspection of Table 10 in Volume I of the Draft HCP/SYP shows that greater than 10 percent of the plan area will be in late-seral or old growth stands, except for a dip to 9.9 percent in decade 3. Mitigation measures included in the Final HCP/SYP will require retention of additional old growth and late-seral areas for mitigation of spotted owl and marbled murrelet habitat and in stream buffers, which will increase the amount of old growth and late seral habitat to greater than 10 percent in all decades. The wildlife agencies concur that this is adequate for species depending on old growth and late seral habitat.

TNL-70 and TNL-71

This concern does not appear to be a specific comment on the proposed HCP/SYP. Although not an explicit component of the Forest Practice Rules, the THP process accommodates adaptive management by the transfer of information and knowledge gained from the outcomes of past and current THPs to the review of future THPs.

TNL-72

PALCO's sustained yield plan has been extensively revised twice since the initial, December 1996 draft on which the sufficiency review comments were based in order to meet concerns of state and federal agencies and the public. These revisions include changes to address the earlier sufficiency review comments and additional information and mitigation measures required for the habitat conservation plan. The Final HCP/SYP and EIS/EIR must address those issues that CDF has determined are necessary for approval of the SYP.

TNL-73

All required elements of the sustained yield plan were included as a condition of approval for filing of the plan. Subsequent changes have been made to address concerns about sufficiency and accuracy and to include information and analyses required as part of the HCP.

The maps of Landslide Hazard Areas (Map 11) and Landslide Hazard Index (Map 13) included in Volume V of the Draft HCP/SYP show the general locations of areas with various degrees of and types of mass wasting hazards for general planning purposes. Planning watersheds are delineated at the same scale on Map 3 of the same volume, and this information can be used to provide an overview of watershed locations relative to mapped landslide hazards. Maps included with the HCP/SYP are printed at a scale that allows this information to be reproduced for public availability. More detailed or site-specific information will be provided as needed for projects conducted under the HCP/SYP.

USGS-1

Thank you for your comments on the HCP/SYP. Because the Draft EIS/EIR is a separate document with different maps and analyses, it is not practical to incorporate your recommendations into the Final EIS/EIR.

VWK-1

The comment indicated that the Draft HCP/SYP is very conservative. The comment also provides information that supports the conclusion that "the HCP will protect and over the long term will promote functional riparian and stream habitat for threatened coho salmon will promote aquatic and terrestrial biological diversity in affected streams, riparian areas, and watersheds." The comments are noted.

VWK-2

Your comment is noted. Anticipated effects of the HCP on aquatic habitat are presented in Table 3.8-8 of the Final EIS/EIR.

VWK-3

We agree with these points. Measures presented in the Draft HCP/SYP are anticipated to increase habitat complexity. This is discussed in the Draft EIS/EIR in Section 3.8. The agencies agree that many factors influence coho salmon populations and that the measures addressed in this plan do not cover all aspects of coho salmon life history (e.g. ocean phase). The intent of the HCP/SYP is to benefit freshwater aquatic habitat within the plan area to the maximum extent practicable.

VWK-4

Comments noted. See also response to VWK-3.

VWK-5

We agree that climate has a profound influence on anadromous fish populations. The agencies also realize that habitat improvements such as is expected to occur as a result of the HCP/SYP may take several years or decades before any notable change in fish populations is realized.

VWK-6

The agencies realize that ocean conditions play an important role in determining coho abundance. However, assessment of ocean conditions is outside the scope of the HCP/SYP. The purpose of the HCP/SYP is to preserve and enhance existing freshwater habitat within the plan area. Your comments have been noted, however, and will be considered in future assessments of coho population dynamics.

VWK-6

The comment indicates that the Draft HCP is very conservative. The comment also includes information that supports the conclusion that "the HCP will protect and over the long term will promote functional riparian and stream habitat for threatened coho salmon will promote aquatic and terrestrial biological diversity in affected streams, riparian areas, and watersheds". The comments are noted and will be useful to the understanding of conditions in the ESU and recovery planning efforts.

VWK-7

See response to VWK-6.

WGB-1

The indicated values have been passed by Congress and the California legislature. The economic effects of the various alternatives are presented in Section 3.13 of the Draft EIS/EIR.

WGB-2

Comment noted; however, the EIS/EIR cannot provide the suggested review.

WGB-3

Based on public comments and FESA and CESA issuance criteria, the wildlife agencies consider additional mitigation appropriate to reduce the risk of potential adverse effects on coho salmon populations. These additional measures may be found in the Final EIS/EIR, Appendix P.

WGB-4

State and federal governments should fund mitigation for the loss of timber base and employment from public acquisition of the Headwaters Preserve, as in the case of the 1978 Redwood National Park expansion.

The FEIS acknowledges that there will be an economic impact as a result of the reduction of available timber supply and a commensurate reduction of employment resulting from public acquisition of private commercial timberlands anticipated in the proposed project. The economic impacts will not likely be as extensive as those predicted and realized in connection with the public acquisition of the Redwood National Park expansion areas in 1978, however. Government programs similar to the employment severances, EDA Grants, and expedited construction of highway and other infrastructure that were associated with the Redwood Park expansion could be used to address these kinds of impacts. It is noted that no private landowner was asked to provide funding for those programs.

As the comment notes, unlike the Redwood Park expansion, this proposed project involves action and undertaking by a private applicant, for permits covering its use of its own private land. While public acquisition of a portion of that private land is a part of the overall transaction, the purchasing governmental entities have not provided for the same level of public investment in employee severance, educational grants and/or infrastructure support for the affected private industry employees who may be affected, as was the case with the Redwood Park expansion. This level of government support and contribution would require legislative authority for the suggested expenditures, and that action did not accompany the enabling legislation that provided authority and funding for the Headwaters acquisition. Additional legislative action is not a matter over which the permitting and reviewing administrative agencies in this project and proposed action have authority or discretion.

WGB-5

See response to C-12.

WGB-6

See responses to BRC-1 and BRC-2.

WGB-7

The appraisal of PALCO's property is not part of the EIS/EIR. An appraisal was performed by the BLM as indicated by PL-105-83.

WGB-8

Comment noted. The tax treatment of the Headwaters purchase does not affect the project description or its environmental effects as analyzed in the Draft HCP/SYP and EIS/EIR.

WGB-9

See response to WGB-7.

WGB-10

Comment noted.

WGB-11

This comment represents the commentor's opinion. It is incorrect to categorize what is obviously designed to provide trees to a sawmill as pulpwood. As noted in Section 3.13, all alternatives result in declines in employment over the long-term.

PART 2—INDIVIDUALS PROVIDING ORAL COMMENTS

SPEAKER, ORGANIZATION	COMMENT CODES[a/]
Morning Session	
Charles Jourdain, California Redwood Association	HCP-6
Camilla Hallinan	HCP-1, WMM-1, HCP-2, WAT-2
Arthur Freyer	HCP-1, E-4, E-2, E-1
Cathie Tritel	HCP-1, GC-8, RIP-4, TIM-3, WNSO-1, HCP-2, I-1
Philip Batchelder	HCP-1, HCP-2, MON-2, OG-2, HCP-4
Alan Moore, Butterfly Gardeners Association	HCP-1, GC-7, MON-1, OG-1
Judith Iam	OG-1, HCP-3, HCP-1, WAT-5, WAT-4, WAT-2, RIP-8, RIP-4
Dottie Higby	I-1, HCP-1, MON-1
Shamus O'Bryon	OG-1, TIM-6, TIM-3
Ros Taylor	TIM-6, OG-1, E-1, GC-7
Dave Casebeer	E-4, TIM-3, HCP-1
Rosalind Berger	OG-1, GC-9, GC-7, I-1, MON-1, HCP-1, HCP-4, GC-8, L-1, WAT-3, RIP-1, TIM-5
Sean Dockery	GC-7, E-4, HCP-1, TIM-1, WAT-3, I-1, GC-10
Shawnee Alexandri	HCP-1, RIP-3, HCP-4, HCP-2, L-1
Kristin Van Til	GC-10, I-1, OG-1, HCP-1, RIP-9
Phil Pluckebaun	HCP-1, HCP-3
Nakoma Keith Quinn	HCP-1, HCP-4, HCP-2
Dominik Zabern	I-1, GC-10, GC-7
Virginia Jane Harris	OG-1, GC-7, GC-8, I-1, H-4, H-3
Carter Brooks	OG-1
Chirs Keyser	OG-1, HCP-1, L-1, SG-1
Michael Fry	WMM-1, WNSO-1, RIP-4, RIP-1, WAT-2, SG-1, MON-1
Craig Michaels	TIM-1, WAT-3, GC-7, L-1, HCP-1, WAT-6
Robin Lindheimer	GC-7, GC-8, OG-2, HCP-1
Harriet Bly	I-1, GC-7
Donald Taylor	HCP-6, E-6
Phillip Guddemi	HCP-2
Michael Passoff	HCP-1, RIP-4, HCP-2, L-1, GC-8
Jennifer Schneider	OG-1, HCP-1
Sally Bell	I-1, HCP-1
Lana Fredrickson	OG-1, HCP-1
Kerry McKee	OG-1, HCP-1
Richard Hunt	HCP-1, RIP-4, GC-7, MON-1, TIM-3, I-1, L-1, HCP-2
Scott Overby	OG-1, TIM-6
Ayla Wolf	OG-1, HCP-1, HCP-2
Paula Swanson	OG-1, HCP-1
Isadora Sicking	OG-1
Ed Runnen Bear	HCP-1, GC-7
Andrea Meyer	HCP-1, HCP-4, SG-1, GC-10
Julia Remmenga	GC-7, RIP-3, TIM-6, OG-2, HCP-1
Evening session	
Gary Bailey	HCP-3, RIP-4, WAT-2, GC-7
George Little	HCP-6
Greta Hendrickson	OG-1, GC-7, SG-1, HCP-3
Kent Stromsnoe	MON-1
Sue Cipolla	HCP-1, GC-7, OG-1

SPEAKER, ORGANIZATION	COMMENT CODES[a/]
Terri Compost	HCP-1, I-1, GC-7, OG-1
Ron Deluce	I-1
Susan Wilcox	OG-1, HCP-3, RIP-7, HCP-1
Richard Mills	OG-1, GC-8, WAT-2, GC-10
Jamie Jones	OG-1
Cougar Black Paw	OG-1, HCP-1
Ayla Wolf	OG-1
Scott Overby	TIM-2, OG-1
Darian Walkstrom	OG-1, HCP-1
Christian Brownrigg	HCP-1, HCP-2, RIP-4, L-1, GC-7
Dave Casebeer	OG-1, TIM-3
Craig Michaels	TIM-1, WMM-1, HCP-1, L-1, GC-7
Melinda Liethold	HCP-8, SG-1, WAT-1
Lorraine Webb, Yuba Watershed Institute	RIP-4, VEG-2, L-1, I-1, MON-1, OG-1, HCP-1
Brian Dunbar	WMM-1, RIP-4, HCP-1, GC-7
Scott Schroder	HCP-2, HCP-1
Paulette Ciulla	GC-8, HCP-1, RIP-4, WAT-6, L-1, GC-7
Janna Bennett	HCP-1, OG-1, I-1, HCP-3, E-2, E-4, E-1, L-1, OG-2, WMM-1, RIP-4, SG-1, H-4
Nakoma Keith Quinn	I-1, HCP-1, OG-1
Marylou Knapp	HCP-1
Nan Gustafson	HCP-1, RIP-4, HCP-2, MON-1
Mark Rentz, California Forestry Association	HCP-6
Anna Mosqueda	HCP-1, RIP-4, E-4, WAT-1, OG-1
Andrea Wilson	OG-1, GC-12
Ed Runnen Bear	I-1, GC-12
Ron Glick	HCP-1, E-4
Richard Estes	HCP-1, E-4
Susan Stevenson	HCP-1, RIP-4
Lucky	OG-1, HCP-1
Fred Pepper	HPC-1
Brion Burkett	OG-1, HCP-1
Amanda Longcar	OG-1, HCP-1
Carmen Pereira	OG-1
Dr. Robert Blackstone	HCP-1, OG-1
Dan Bacher	HCP-1, E-4, E-1, TIM-3
Zoe Zalia	OG-1, TIM-5, GC-7, TIM-1, WMM-1
David St. George	I-1, GC-7
Rainy Blue Cloud Greensfelder	HCP-1

a/ See Table T-1 for an explanation of comment codes.

SPEAKER, ORGANIZATION	COMMENT CODES
Afternoon Session	
Teri Cohan Link, Coalition on the Environment and Jewish Life	HCP-1, OG-1, MON-2, RIP-7, RIP-4, WAT-6, SG-6
Jerry Rubin, Los Angeles Alliance for Survival	GC-7, WAT-3, TIM-1, HCP-3, OG-1
Saran Kirschbaum, Coalition on the Environment and Jewish Life	TIM-1, GC-7, L-1, HCP-1, RIP-4
Parker Butterfield	HCP-6, E-5
Betty Connolly	OG-1, I-1, GC-7
Todd Shuman	TIM-1, RIP-3, MON-1, WMM-1, HCP-1
Karen Besser	GC-7, HCP-2, OG-2, RIP-4, RIP-8, RIP-3
Nancy Voien	HCP-6, E-5
David Prather	OG-2, OG-1, HCP-1
Rick Anfinson	HCP-6
Bill Buchner	HCP-6
Teresa Thompson	HCP-1, RIP-4, SG-1, RIP-3, GC-7
Valerie Sklarevsky	HCP-1, OG-1
Nancy Lawrence	HCP-1, GC-7, E-4, GC-12, TIM-2
Kent Stromsmoe	OG-2, WAT-4, WMM-1, WMM-3, MON-1
Loriel Golden	OG-1, TIM-2, GC-12, HCP-1
Aaron Hall	HCP-1
Susan Stephenson	HCP-3, HCP-1, RIP-4
Stewart Mintzer	OG-1
Ned Boyer	MON-1, WMM-3, SG-1
Jennifer Scott-Lifland	GC-7, GC-8, RIP-4, HCP-1, H-4, SG-1, WAT-2
Rex Frankel, Save All of Ballona	OG-1, GC-12, GC-10, I-1
Ralph Cole	TIM-3, MON-1, GC-7, F-1
Leeona Klippstein, Spirit of the Sage Council	L-1, GC-4, HCP-1, HCP-2, GC-1
Andrew Leavenworth	HCP-1, GC-7, I-1
Coby Siegenthaler	GC-12, TIM-3, OG1-
Robert Brower	HCP-6, E-5
Bruce Campbell	HCP-4, HCP-2, HCP-1, GC-4, I-1, H-4
(evening session)	
Dr. Kirk James Murphy, Physicians for Social Responsibility	GC-8, WAT-3, GC-7, HCP-1, H-1, VEG-2, WMM-1, RIP-4, I-1
Peter Bralver, Wide Network Environmental Think Tank	GC-8, OG-1
Mark Williams	HCP-1, OG-1, HCP-2, GC-7
Larry Wartel	HCP-1
Jack Neff	
Mehmet McMillan, Action Resource Center	HCP-1, RIP-4
Mary Loquvam	HCP-1
Bruce Campbell	TIM-1, WAT-3, WMM-1, L-1, GC-8, A-1
Robert Gornik	OG-1, HCP-1
David Wolfberg	GC-7, I-1, SG-1, MON-1, E-1, RIP-1, RIP-4
Linda Harmon	HCP-1
Joanne Attia	GC-7, L-1, HCP-1, TIM-1, HCP-3

SPEAKER, ORGANIZATION	COMMENT CODES
Susan Barr Nelson, Friends of Santa Monica Mountains and Seashore	HCP-1
Dang Ngo	HCP-1, W-1, GC-17
Dean Walker	HCP-1
Robin Barrett	I-1, HCP-1, TIM-1, RIP-4, RIP-1, SG-1, OG-1, E-1, E-2, MON-1
Tommie Faye Cooper	HCP-1, OG-1, GC-1
Mitch English	GC-8, L-1, WAT-3, TIM-1, E-4, OG-2, WMM-1, OG-1, WMM-3, WNSO-1, RIP-4, SG-1, WAT-6, HCP-2, MON-1, I-1, GC-10
Judy Andersen	HCP-1, OG-1
Chris Bowers	E-1
Nancy Pearlman, Ecology Center of Southern California	RIP-4, H-4, HCP-1, GC-12, OG-1
Bess Carlisle Coleman	OG-1, RIP-1
Mary Welz	HCP-1
Judy Brady	HCP-1, OG-1, GC-7, I-1, L-1
Ella Hope	OG-1
Al Sattler	HCP-1
Laura Louie	OG-1, HCP-1
Paul Jackson	I-1, HCP-2
John Jay Ulloth	HCP-1, HCP-4, TIM-6, GC-12, GC-7, WNSO-1, HCP-5
Lee Peters	OG-1, I-1
Priscilla M. Jones	OG-1, GC-12, I-1
Dr. Robert Gelfand	HCP-1
Nima Dilmaghani	SG-1, H-1, E-1, H-2, HCP-1, L-1, GC-8, WAT-3, TIM-1, OG-1, WMM-1

SPEAKER, ORGANIZATION	COMMENT CODES
Morning Session	
Stephen Dale	HCP-6
Alan Franklin	HCP-6, E-5
Robin Arkley	HCP-6
Rodney Sanderson	HCP-6, E-5
Dale Welch	HCP-6, E-5
Colum Coyne, Mattole Salmon Group	HCP-1, GC-7, SG-1, SG-6, WAT-2, WA-1, E-1, E-2, E-4, MON-1, MON-2
John Sneed	HCP-6, E-5
Bruce Chapman	HPC-6, E-5
Dan Broyles	E-5
Charles Fuentes	E-5, HCP-6
Bruce Beck	HCP-6, E-5
Roger Sanderson	E-5, HCP-6
John Lynott	HCP-6, HCP-7, E-5
Dennis Schlotzhauer	HCP-6, E-5
Nick Bolt	E-5, HCP-6
John Kennon	E-5, HCP-6
Rhett Imperiale	HCP-6, E-5
Mark Mueller	GC-7, MON-1, GC-8, HCP-1
Richard Robbins	HCP-6
Stan Johnson	HCP-6, E-5
Jean Paulson	OG-1, GC-7, E-1, E-4, I-1
Jim Meskill	E-5, HCP-6
Daniel Bartlett	HCP-6
Bob Thomas	E-5, HCP-6
Carl Wickman	GC-10, I-1
Donald Kegley	E-4, GC-7
John Frink	E-5
Jay Parrish	HCP-6, E-5
Sara Buccola	E-5, HCP-6
Doc Gallup	HCP-6
Tim Marks	E-5, HCP-6
Dick Lindsay	HCP-6
Michael Dunkelberger	HCP-6
Robert McCutchen	HCP-6
Dan Ihara	A-1, GC-10, I-1, TIM-1
Paulette Kallo	TIM-1, SG-1, HCP-2
Tim Petrusha	E-5
Charles Moyer	HCP-6
Paul Cienfuegos	I-1
John Prevost	HCP-6
Frances Ferguson	HCP-2, RIP-4, GC-7, WAT-2, SG-1, HCP-1
Mark Cobb	HCP-6, E-5
Bradley Burns	GC-7, HCP-1, L-1, GC-8, F-1, WAT-1, MON-1, WAT-4, OG-2, I-1, E-4

SPEAKER, ORGANIZATION	COMMENT CODES
Afternoon Session	
Bea Stanley	HCP-1, HCP-3
Jan Kraepelien	GC-7, HCP-1, GC-13, GC-8, WAT-2, WAT-1
Bonnie Blackberry	GC-7, HCP-1, E-4, H-1
Greg Wellish	GC-7, HCP-1, E-4, SG-1
Robie Tenorio	MON-1, GC-13, SG-1, WAT-2, OG-1
Shawnee Alexandri	GC-7, OG-2, RIP-3, SG-1, I-1, GC-9
Jonathan Pearl	HCP-1, OG-1, TIM-1, SG-1, WAT-2, H-4, HCP-2, I-1, L-1, L-2
David Walsh	HCP-1, WAT-1, HCP-4, TIM-1, WMM-3, GC-10
Dale Neiman	HCP-6, E-5,
Carolyn Swanson	GC-7, HCP-1
Robert DiPerna	GC-4, GC-7, L-1, HCP-4, TIM-1, E-4, I-1
Tracy Katelman	TIM-1, SG-1, E-4, I-1, E-4, I-1, GC-7
Craig Bell, Northern California Association of River Guides	HCP-2, GC-7, HCP-1, MON-1
Jeff Kidd	HCP-1, HCP-2, HCP-5, GC-5
Patrick Higgins	F-2, SG-6, SG-1, F-1, F-3, WAT-2, GC-8, RIP-8
Kevin Bundy	GC-8, L-1, HCP-1, HCP-2, E-4, GC-10, TIM-1, WAT-3, E-1
Jean Cadwell	GC-7, I-1, HCP-2, E-3, HCP-1
Sunshine Mansfield	L-1, GC-7, OG-1, A-1, HCP-1, GC-10, MON-2
Agnes Patak	F-1, OG-1, RIP-8, HCP-1
Suzanne Beers	HCP-1, OG-1, F-1
Ali Freedlund	SG-1, HCP-1, OG-1, GC-7, VEG-1, VEG-2, H-4
Angela Bonner	OG-1, HCP-1, SG-1
Bert Silva	E-5, HCP-6, HCP-7
Berk Snow	F-1, SG-1, TIM-1, HCP-2,
Stephanie Gawboy	HCP-1, GC-7, E-3
Gary Wilhelm	[gave his spot to Richard Gienger]
Robert Clay	GC-10, HCP-4, I-1, GC-5
Richard Gienger	GC-8, GC-4, HCP-1, L-1, MON-1, A-1,
Michael Stowell	GC-10, E-1, WAT-2, SG-1, TIM-8
Ranil Senanayake	RIP-1, HCP-1, E-7
Perry Phillips	GC-8, HCP-1, I-1, MON-1
John Severn	L-1, TIM-1, OG-2, WMM-1, HCP-1, H-4
Bernie Bush, Forest Resources Council	HCP-6
Cecilia Lanman	HCP-1, GC-17, I-1, A-1, E-4
Mark Hilovsky	E-4, HCP-1
Michael Evenson	SG-1, WAT-2, TIM-3, TIM-1
Clint Bush	HCP-6, E-5
Ron Haselip	HCP-6, E-5
Frank Wilson	E-5, HCP-6
Dennis Wood	E-5, HCP-6
Rex Bohn	HCP-6, E-5
Gary Ogden	HCP-6, E-5
Jeff Ringwald	HCP-6
John Cook	HCP-6, E-5

SPEAKER, ORGANIZATION	COMMENT CODES
Mike Bonnikson	HCP-6
Carl Rome	HCP-6
Susan Maloney	OG-1, E-4, HCP-1
Chris Skyhawk	GC-7, A-1, GC-8
(Evening Session)	
Dan Kepon	HCP-6, E-5
Jim Holdner	HCP-6, E-5
Bill Davis	E-5, HCP-6
Josh Strange	HCP-1, RIP-4, WAT-2, F-1, HCP-4
Jene McCovey	OG-1, HCP-1, H-2
Paul Billups	GC-7, I-1, OG-1
Patrick Lancelin	HCP-1, I-1
Doug Mosel	HCP-1, GC-5, A-1
Johanna Harman	E-1, GC-13, L-1
Michael Passoff	F-2, WAT-1, F-1, WAT-4, SG-6, GC-1, I-1, GC-2
Tim Crowley	HCP-6, E-5
Don Luther	HCP-6, E-5
Ron Bush	HCP-6, E-5
Margie Nulsen	GC-8, GC-6
Rick Onstad	E-5, HCP-6
Earl Bootier	L-1, HCP-1, I-1, TIM-1, WAT-1
Milo Appel	OG-1, HCP-1
Andrew Butts	L-1, HCP-1
Clarence Hostler	[gave time to Deborah Bruce]
Deborah Bruce	OG-1, L-1, H-2, HCP-1, SG-1, SG-6, RIP-1, A-1, HCP-3, F-2, GC-2
Gerald Sarvinski	HCP-6, E-5
Jim Robertson	HCP-6, E-5
Tim Coppini	HCP-6, E-5
Vanora Ciullo	OG-1
Sierra Simpson	OG-1, SG-1, WAT-2
Ellen Taylor	E-4, SG-1, OG-1, HCP-1, GC-7
Blake Johnsgard	HCP-6
Bart Gruzalski	[deferred to Julia Butterfly]
Julia Butterfly	HCP-1
Peter Childs	HCP-1
Danny Pineda	GC-1, L-1, HCP-2, F-1, GC-2, RIP-2, WAT-2, GC-2, TIM-1, E-4
Jan Lundberg	HCP-1, E-3
Christine Preucil	HCP-1, L-1, A-1, I-1, OG-1, E-3
April Richards	HCP-2, HCP-1, I-1, GC-10, SG-1, HCP-2, HCP-5
Nakoma Quinn	HCP-1, HCP-4, OG-1
Michael Schwartz	OG-1
Bill Jones	HCP-6, E-5
Carolyn DePucci	HCP-6, E-5
Jennifer Sharkey	HCP-6, E-5
Wendy Stevenson	HCP-6, E-5

SPEAKER, ORGANIZATION	COMMENT CODES
Jim Bragg	HCP-6, E-5
David Peake	HCP-6, E-5
Anne Hubbard	HCP-1, H-4, TIM-3, H-1, H-2
Noel Soucy	SG-1, I-1, WMM-1, E-4, GC-13, L-1
Heather Rawson	HCP-2, I-1, MON-1
Brian Basor	TIM-1, HCP-1, VEG-2, F-1
Daniel Kosmal	F-1, SG-6, WAT-2, SG-1, WAT-6, GC-13, MON-7
Renee Nitzel	[accidentally skipped during proceedings]
Gary Gundlach	HCP-1, HCP-6, E-5
Demos Barcelos	HCP-6, E-5
Jim Hinrichs	HCP-6
Robert Parker	OG-1, HCP-1, L-1, I-1 [read statement by Julia Butterfly]
Jason Wilson	OG-1, GC-10, I-1, A-1, E-3
Isadora Sicking	HCP-1
Shirley Shelburn	I-1, TIM-1, GC-10, GC-5
Barbara Burns	I-1, L-1, HCP-1, TIM-1, WMM-1, WNSO-1
Tracy Brown	L-1
Mark Knipper	TIM-1, HCP-1, TIM-3, SG-1, GC-13, H-1, RIP-4, OG-1
Anne Willis	HCP-1

SPEAKER	COMMENT CODES
Afternoon Session	
Susan Tibbon	OG-1, L-1, OG-2, SG-1, HCP-1, H-2, I-1, E-4
Al Wigger	[time ceded to S. Tibbon]
Jason Beaver	TIM-1, WMM-1, GC-7, HCP-1
Victoria Rios	F-2, OG-1, HCP-1, WAT-2, H-4, I-1
Mark Lind-Hanson	GC-7, SG-1, OG-1, RIP-4, L-1, HCP-1
Philip Scordelis	WAT-2, WAT-4, RIP-4, WAT-6, MON-2, HCP-1
Michelle Waters	GC-8, RIP-4, RIP-3, WMM-1, GC-7, HCP-2, HCP-1, TIM-1
Adam Weisberg	RIP-4, RIP-1, OG-1
Barak Gale, Coalition on the Environment and Jewish Life	HCP-1, RIP-4, WMM-1
Saskia Swenson	HCP-1, HCP-3, OG-1
Robert Standish	HCP-1, I-1, L-1, WAT-3, RIP-4
Aaron Mitchell	TIM-1, WMM-1, HCP-1, L-1, GC-7, OG-1
Sara Goltz	L-1, HCP-1
Pete Harrison	HCP-1, WMM-1
Richard Rosman	HCP-1
Amy Balint	GC-7, W-1, GC-8, HCP-1
Mark Allen Matthews	HCP-1
Paul Hughes, Forests Forever	
Craig Michaels	L-1, WMM-1, HCP-1
Eric Brooks	E-4, I-1, HCP-1
Alan Levine, Coast Action Group	HCP-1, MON-1, MON-2, GC-8
Kenneth J. Kietzer	HCP-1, L-1, GC-7
Ruth Niehues	GC-10, OG-1, HCP-1, HCP-2
Jeremy Swift	I-1, GC-7, L-1, HCP-1, GC-8
Marcia Burton	HCP-1, E-1, GC-7, I-1
Deborah Bruce	OG-1, I-1, GC-7, H-4, HCP-1, TIM-6, SG-1
Tyson Schroeder	HCP-1, OG-1
Susan Stansbury, Bay Area Action	L-1, TIM-1, GC-8, GC-7, WAT-3, RIP-4, WAT-2, HCP-1
Wes Sparling	HCP-1
Marshall Greenhut	HCP-1, GC-7, HCP-2, TIM-1
Eli Asarian	OG-1, RIP-1, HCP-1, GC-10
Daniel Kosmal	WAT-2, SG-6, RIP-1
Eric Johnson	HCP-1, GC-8
Matthew Bomba	HCP-1
Gabriel Strout	OG-1, HCP-1
Rachel Robbins	HCP-1, GC-1
Marla Yonamine	HCP-1, OG-1
Anne Willis	HCP-1, HCP-2
Celia Alario	HCP-1, OG-1, H-4, H-1
Angie Bouchard	OG-1, HCP-1, GC-7
Dennis Davie	HCP-1, GC-8
Sharon Ryals-Tamm	GC-7, I-1, E-4
Anne Hubbard	HCP-1
Theresa Watts	TIM-6, HCP-1
David S. Marshall	OG-1, HCP-1, H-4,
Kristen Schmitz	HCP-1, OG-1
Elizabeth Scheinman	HCP-1

SPEAKER	COMMENT CODES
Chris Schafer	HCP-1
L. Darlene Pratt	RIP-1, OG-1, I-1
Joan M. Norman	OG-1
Livka Sigal	I-1
George Lenhart	E-5
Timothy Parker	I-1, OG-1, HCP-1
Jason Murges	HCP-1
Philip Klasky	HCP-1, GC-7, RIP-4, W-1, OG-1, HCP-3
Frank Egger	TIM-3, RIP-4, H-4, HCP-1
Catherine C. Larsen, Montclair Presbyterian Church	GC-8, WAT-3, L-1, HCP-1
Tage Flanigan	OG-1
Robert Parker	OG-1, L-1, GC-7
Julia Butterfly Hill	OG-1, HCP-1, I-1
Emilia Berol	WAT-2
Justin Kohn	OG-1, HCP-1
Margaret Elizares	HCP-1, TIM-5, GC-10, I-1
Ellen Faulkner	GC-7, HCP-1
Rosemary Wolter	I-1, HCP-1
Priscilla Thomas	GC-7, HCP-1
Robert Youden	GC-9, OG-1, RIP-1, HCP-5, HCP-1, MON-1,
Catherine Haysun	I-1, HCP-1
(Evening session)	
Paul Anderson	OG-1, HCP-1
John Hernandez	H-1
Carol Hoover	HCP-3, I-1
Ken Miller	
David Siegenthaler, Restoring Creation Enablers of the Presbyterian Church	GC-8, I-1, GC-7, HCP-1, E-4, SG-1
Kevin Ohnsman	HCP-1, I-1, OG-1
Rose M. Taylor	OG-1, I-1, HCP-1
Dave Casebeer	HCP-1
Kent Stromsmoe	
Leonard Simmons	L-1, GC-7, GC-8, WAT-3, RIP-4, HCP-1
Walter Epp	I-1, HCP-1, HCP-2, WAT-5, OG-1
Dan Hamburg	HCP-1
Alicia Littletree	OG-1, HCP-1
Julia Remmenga	I-1, W-1, HCP-2, HCP-3
Jill Ratner	OG-1, HCP-1, E-4
Nancy Schroeder	OG-1, HCP-1
Jim Lanier	L-1, RIP-1, HCP-1
Sunny Shine	OG-1, HCP-1
Alan Moore	HCP-1, I-1
Caleb Kleppner	
Jeff McKay	OG-1, HCP-1
Nikolai Barca-Hall	OG-1, E-1, SG-1, I-1, GC-10, HCP-1
Kassie Siegel, (Hum?)bolt Environmental Law Society	HCP-1, GC-9, OG-1
Leila Salazar	OG-1, I-1, GC-9, HCP-1, TIM-3

SPEAKER	COMMENT CODES
Bob Brister	HCP-1
Rosalind Berger	I-1, GC-10, GC-9, L-1, F-2, OG-1, HCP-1
Rebecca Grant	OG-1, I-1, HCP-1, GC-8, L-1, WAT-3, TIM-1
Ted Gorn	HCP-1
Paul Magdaleno	OG-1, WAT-2
Signa Mattson	OG-1
Florence Hicks	HCP-1
Alan Howe	WAT-3, RIP-4, WMM-1, HCP-1, WNSO-1, GC-7, I-1
Carrie Sprague	OG-1, OG-2
John Rizzo	RIP-1, HCP-1, OG-1
Nirali Vora	OG-1, TIM-3, HCP-1
Crystal Dalgeish	HCP-1, OG-1, I-1, W-1, RIP-1
Sylvia Benson	HCP-1, OG-1
Paulette Cuilla	HCP-1, L-1, I-1, OG-1
Carla Din	E-1, I-1, GC-7
Jane Jerome	L-2
Leslie Scales	HCP-1, H-3
Mandeep Gill	HCP-1, H-3
Lorraine Webb, South Yuba River Citizens League	RIP-4, I-1, OG-1, HCP-1, MON-1, GC-7, TIM-1
Chris Barrington	HCP-1, HCP-3, GC-8, WAT-3, I-1, GC-7, OG-1
Jeff Kilbreth	HCP-1, WAT-3, GC-7, HCP-2, RIP-4
Kristen Lebacqz	OG-1, OG-2, RIP-4, WNSO-1
James Cann	OG-1, GC-7, RIP-4, L-1, HCP-1
Marisha Banister	GC-10, HCP-1, RIP-4, HCP-2
Bekah Alexander	TIM-1, L-1, RIP-4, WMM-1
Melody Van Hoose	OG-1, HCP-1, I-1
Joyce Kadoch	WNSO-1, GC-8
Ron McKean	GC-9
Janet Carr	HCP-1
Aryana Farsai	RIP-4

PART 3—INDIVIDUALS PROVIDING WRITTEN COMMENTS

Abbott, Geoffrey
SG 6

Abriani, Janelle
OG 1

Ackerman, David S.
GC 8 GC 10 HCP 1

Adams, Charles
HCP 1

Adams, Dolly
HCP 1 OG 1 RIP 4

Adams, R.
GC 7 GC 10 I 1 L 1

Adams, Stephen
HCP 1 OG 1

Addis, Pat
HCP 1

Adelman, John
GC 7 HCP 1 I 1 **OG** 1

Agliata, Lauren
GC 8 GC 10 HCP 1

Aguilar, Jr., John
GC 7 GC 8 L 1 RIP 4

Ahearn, John J.
GC 5 HCP 1

Aheb, Elley J.
GC 5 L 1 OG 1 RIP 4 W M M 1

Ahers, Elery J.
GC 5 L 1 OG 2 RIP 4 WMM 1 WNSO 1

Ai, Amy
HCP 1 OG 1 TIM 5

Aiello, Nicholas
HCP 1 OG 1 RIP 4

Aiello, Raphael
HCP 1 OG 1 RIP 4

Airmet, Douglas
HCP 1 I 1 OG 2

Akchurn, Kari
RIP 4

Akino, Nora
HCP 1

Alaimo, Julie
GC a HCP 1 **OG** 1 RIP 4 TIM 3

Alamillo, Patrick J.
GC 7 GC 10 I 1 L 1

Albert, Martin P.
GC a GC 10 HCP 1 L 1

Albon, Chris
HCP 1 OG 1

Albrecht, Eric
HCP 1 L 1 OG 2 RIP 4

Albritton, William
GC 10 I 1 TIM 3

Albro, Chris
HCP 1 OG 1

Alcorn, Robert
HCP 1 OG 1 RIP 4

Alcoset, Vicki
HCP 3 L 1 OG 1

Alder, Mr & Mrs H.K.
GC 10 HCP 1

Alexander, Bekah
GC 7 HCP 1 OG 1 RIP 4

Alexander, Johan
GC a GC 10 HCP 1

Alexander, Sue E.
GC 10 HCP 1

Alie, M. Bernadette
HCP 1 L 1 MON 1 OG 2 RIP 4 SG 1 SG 3 TIM 1
WAT 3 WMM 1 WNSO 1

Alie, M. Bernadette
GC a HCP 1 HCP 2 HCP 3 L 1 OG 1 OG 2 RIP 4
SG 1 SG 3 SG 7 TIM 1 WAT 6 WMM 1 WNSO 1

Alie, M. Bernadette
GC 8 HCP 2 L 1 OG 2 RIP 4 RIP 5 SG 1 SG 3
TIM 1 WNSO 1

Allan, Ruary
GC 7 GC 8 P 1 TIM 1 WAT 3

Allan, Ruary James
GC 7 HCP 1 WAT 3

Allen, Carol-Ann
HCP 1 OG 1 RIP 4

Allen, Claudia
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

Allen, Claudia
HCP 1 HCP 3 L 1 OG 2 RIP 4 SG 1 WAT 2 WAT 6
WMM 1

Allen, Claudia
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 6 WMM 1

Allen, Joseph M
HCP 1 OG 1 RIP 4

Allen, Julia
HCP 1 OG 2 WAT 3

Allen, Kenneth
HCP 1 OG 1

Allen, Margaret J.
HCP 1 OG 1 RIP 4

Allen, Matt
HCP 1 OG 1 RIP 4

Allen, Monte & Sara
GC 8 GC 10 HCP 1 L 1 OG 1

Allen, Rodger & Linda
GC 8 HCP 1 MON 1 RIP 1 RIP 4

Allen, Zane
GC 14

Allison, Elizabeth
HCP 1 RIP 5 SG 6 WAT 6

Allsbrooks, Ron & Cindy
HCP 1 RIP 4 SG 6

Alma, Emily
HCP 1 L 1 L 2 OG 1 WAT 2

Almas-Benson, et al., James
HCP 1 L 1 OG 1 RIP 4 SG 1 SG 6 TIM 1 WAT 3
WAT 5

Alonso, Darwin
HCP 1 OG 1 RIP 4

Alter, Donald L.
GC 8 HCP 1 RIP 5 RIP 7

Altmann, Mary
GC 7 H 4 HCP 1 HCP 3 L 1

Altmann, Mary
HCP 1 L 1 OG 2 TIM 1

Alton, Thomas
HCP 1 OG 1 RIP 4

Altorfee, Elaine
HCP 1 OG 1

Alvarenga, Silvia
HCP 1 OG 1 RIP 4

Alvarez, Carolyn
GC 8 GC 10 HCP 1 L 1 OG 1

Alvernez, Thelma
HCP 1 RIP 4

Ambruster, Kathy
HCP 1 RIP 4

Amundson, Alicia F.
GC 8 GC 10 HCP 1

Andazola, Anita
L 1

Andersen, Donna
OG 2 RIP 4

Andersen, Donna E.
OG 1 RIP 1

Andersen, KB
HCP 1 OG 1

Andersen, Kenneth K.

HCP 1 I 1 OG 1 RIP 4

Anderson, C.
HCP 1 OG 1

Anderson, Carl N.
L 1

Anderson, Clifford E
E 3 HCP 1 I 1

Anderson, Clifford E.
GC 8 HCP 1 L 1 OG 2 TIM 1 WAT 3 WNSO 1

Anderson, Clifford E.
GC 8 HCP 1 L 1 OG 2 TIM 1 WAT 3 WNSO 1

Anderson, Deanie
GC 8 HCP 1 OG 1 TIM 3

Anderson, Gordon
GC 10 HCP 1 L 1 OG 2 WAT 3

Anderson, Jacqueline
GC 7 GC 10 I 1 L 1

Anderson, Joyce L.
GC 8 GC 10 HCP 1

Anderson, Kristine
HCP 1 L 1 TIM 1 TIM 5

Anderson, M.
HCP 1 OG 1

Anderson, Paul
GC 10 HCP 1

Anderson, Sonja
GC 10 HCP 1

Anderson, Ted
GC 7 HCP 1

Anderson, Ted
E 1 HCP 1 L 1 MON 1 OG 1 OG 2 RIP 4 SG 6
TIM 5

Anderson, Jr., William D.
GC 8 GC 10 HCP 1

Andrade, Diana
HCP 1

Andres, S.A.
GC 7 HCP 1 L 1

Andrew, Frank
HCP 1 L 1 OG 1 OG 2 RIP 1 RIP 5

Andrews, Linda
HCP 1 OG 1 RIP 4

Andrews, Nancy
OG 1

Andrews, Nancy
HCP 1 OG 1

Andrews, Peggy
HCP 1 L 1

Andrews, Peggy
HCP 1 L 1

Anfinson, Rick
HCP 6

Angulo, Jane
GC 8 HCP 1 L 2 MON 4

Angulo, Jane
HCP 1 L 1 L 2

Anima, Morpheus R.
GC 5 GC 8 HCP 1 L 1 OG 2 TIM 1 WNSO 1

Anton, David
HCP 1

Antonson, Sandra
HCP 1 L 1 OG 1

Antonson, Sandra J.
GC 7 HCP 1 OG 1

Antoville, Anne & Anthony
GC 7 HCP 1 L 1 TIM 1 VEG 2

Antoville, Anthony & Anne
L 1 TIM 1 VEG 2

Apfel, Roberta J.
HCP 1 OG 2

Appel, Jennifer
GC 7 H 1 HCP 1 HCP 2 I

Applegate, Kay
OG 1 RIP 4

Applegate, Roland
HCP 1 RIP 4 SG 6 WAT 2

Applegate, Roland
HCP 1 L 1 OG 1 RIP 1 SG 1 WMM 1

Appleman, Jesse
HCP 1 RIP 4 RIP 5 TIM 1

Aquino, Rommel
HCP 1 OG 1

Arata, Thomas G.
HCP 1

Arata / Wilkerson, Joe/Joan
HCP 1 OG 1 RIP 4

Archer, Mat-t
GC 8 HCP 1 P 1

Arenas, Cecily
HCP 1 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 3

Arendt, Daniel
HCP 1

Argentina, Donna
HCP 1 OG 1

Argentina, Donna
HCP 1 OG 2

Arkley, Robin P.
HCP 6

Armstrong, Carol
OG 1 RIP 1 WMM 1

Armstrong, Eric
HCP 1 OG 1 RIP 4

Arno, Rebecca
HCP 1 OG 1 RIP 4

Arnone, Virginia
HCP 1 OG 2

Arnould, Francis
E 5 HCP 6

Aronson, Robert A.
GC 12 HCP 1 L 1 WAT 2

Arrighi, Jennifer
OG 1

Arrighi, Jennifer
OG 1

Arteaga, John
GC 7 OG 1

Arthur, Robin & Teresa
HCP 1 OG 1 RIP 4

Arvin, Phil
HCP 1

Asarian, Eli
E 4 H 3 HCP 1 L 1 RIP 4 WMM 1

Asarian, Eli
H 1 H 2 H 3 HCP 1 L 1 RIP 4 TIM 1 WMM 1

Ashikeh, Karen
GC 2 HCP 1 L 1 TIM 1

Asztalos, Dr. Steve
HCP 1 I 1 L 1 TIM 3 WMM 1

Asztalos, Steve
E 4 FACT 1 GC 8 HCP 1 I 1 L 1 RIP 4 TIM 1
TIM 3 WAT 2 WMM 1

Athearn, Jr., Folger
GC 7 GC 10 HCP 1 HCP 4 I 1 MON 1 OG 1

Atkins, Jane
HCP 1 L 1 OG 2 RIP 4 SG 1

Atkins, William W.
HCP 1 OG 1

Attinger, Hermann
HCP 1 OG 1 RIP 4

Attinger, Nancy
HCP 1 OG 1 RIP 4

Attwood-Johnston, Maureen
HCP 1 OG 1 RIP 4

Attwood-Johnston, Maureen

HCP 1 OG 1 RIP 4 TIM 6

Atwood-Johnston, Maureen
GC 8 HCP 1 OG 1 RIP 4 TIM 6

Augusto, Santo
HCP 1 OG 1

Auker, Cassandra
HCP 1

Avcollie, Beatrice
E 1 E 4 GC 7 HCP 1 RIP 4 WAT 3

Avcollie, Michael
E 4 GC 7 GC a HCP 1 HCP 2 L 1 RIP 1 RIP 2
RIP 3 TIM 1 WAT 2 WAT 3

Avern, Michael
OG 1 RIP 4

Aversavo, Anthony
HCP 1 OG 2 RIP 4 TIM 1

Avery, Bruce R.
HCP 1 OG 1 RIP 4

Avery, Nathan
HCP 1 OG 1 RIP 4

Avis, Jay & Carol
HCP 1 OG 1 RIP 4

Ayerdi, Diane
HCP 2 HCP 3 OG 2

Ayerdi, Diane
HCP 1 HCP 2 OG 2 WMM 1

Ayotte, Margy
HCP 1 OG 1

Babcock, Richard
GC 7 GC 10 | 1 L

Babcock, Vera
HCP 1 OG 1 RIP 4

Babus, Marc
HCP 1 OG 1

Bach, Julianne
GC 8 GC 10 HCP 1 L 1 OG 1

Bachmann, Kate
OG 1 RIP 4

Bachmann, Steve
RIP 3 RIP 4

Bachteal, Maria
HCP 1 OG 1 RIP 4

Bachteal, Maria
HCP 1 OG 1 RIP 4

Badie, Mona
GC 8 HCP 1 w 1

Baerncopf, Chris
HCP 1 OG 1 RIP 4

Baerncopf, Chris
HCP 1 OG 1 RIP 4

Bagan /Watkins, Karen / Claire
HCP 1 OG 1 RIP 4

Bagwell, Bonnie
E 4 GC 17 HCP 1 L 1 RIP 4 SG 1 WAT 3 WMM 1

Bahrami, Adam
GC 2 HCP 1

Baier, Carol
HCP 1 SG 6 TIM 8

Bail, Dana
GC 7 HCP 1

Bailey, Anne C.
HCP 1 OG 1 RIP 4

Bailey, Gary
E 4 GC 8 HCP 1 L 1 L 2 MON 6 WAT 2

Bailey, Nathan
GC 7 HCP 1 TIM 3

Bailey, Virginia L.
HCP 1 OG 1 RIP 4

Bailey, William & Roberta
OG 1 TIM 3

Baily, Richard
GC 10 HCP 1 HCP 3

Baird, Katherine
HCP 1 L 1 OG 1 WAT 3

Baird, Katherine
E 4 GC 10 HCP 1 L 1 OG 2 TIM 1 WAT 3 WMM 1
WNSO 1

Baker, Clifford J.
GC 10 H 4 HCP 1 HCP 2 I 1 L 1 MON 1 RIP 7
SG 1

Baker, Jennifer
HCP 1 OG 1 RIP 4

Baker, Jennifer E.
L 1 OG 1 OG 2 RIP 7 SG 1 WAT 3

Baker, Linda
GC 7 HCP 1 HCP 2 I 1 L 1 RIP 4

Baker, Maureen
GC 8 GC 10 HCP 1 L 1 OG 1

Baker, Norma
HCP 1 OG 1 RIP 4

Baker, Norma
HCP 1 I 1 OG 1 RIP 4

Baker, Tamara
OG 1 RIP 4

Baker, Tamara
HCP 1 OG 2 RIP 4

Baker-Jud, Dan
HCP 1 OG 1 RIP 4

Bakun, S.L.
HCP 1 OG 1 RIP 4

Balcerak, Gary & Mary
GC 8 GC 10 HCP 1

Balding Pranstoell, Jeanne
HCP 1 OG 1

Baldini, Ann-Marie
HCP 1 OG 1 RIP 4

Baldini, David M.
HCP 1 OG 1 RIP 4

Baldwin, Gladys A.
GC 8 GC 10 HCP 1

Balint, Amy
HCP 1 RIP 4 RIP 5 SG 6

Balint, Amy M.
HCP 1 OG 1 RIP 4

Ball, Helen L.
HCP 1

Ball, Josephine
HCP 1 OG 1

Ball, Mary Lou
HCP 1 OG 1 RIP 4

Ball, Steve
HCP 6

Balouskova, Oldriska
HCP 1 OG 1 RIP 4

Baltazar, Rachel
HCP 1 OG 1

Balzaletti, Desiree
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Bandalin, Craig
OG 1 RIP 4

Bandell, K.
GC 8 HCP 1 OG 1

Banias, Bill
HCP 1 OG 1 RIP 4

Banker, C.E.
HCP 1 OG 1 RIP 4

Barbagelata, Michael
HCP 1 OG 1

Barber, Daniel
P 1

Barber, Drew
GC 7 HCP 1 I 1 L

Barber, Drew

E 4 GC 8 HCP 1 HCP 2 L 1 OG 1 OG 2 TIM 1
WAT 3

Barber, Drew
HCP 1 HCP 2 L 1 OG 2 TIM 1 VEG 2 WAT 3

Barber, et al., James
GC 8 HCP 1 RIP 4 WAT 2

Barca-Halt, Nikolai
GC 5 GC 11 L 1 MC 1 TIM 1 WMM 1

Barca-Hall, Nikolai
HCP 1 L 1 OG 2 TIM 1 WAT 3

Barca-Hall, Nikolai
HCP 1 L 1 OG 2 TIM 1 WAT 3

Barcelos, Demos
E 5 HCP 6

Barclay, Elizabeth
GC 7 HCP 1 OG 2 RIP 4 TIM 1 VEG 2 WAT 2 WAT 3

Barclay, Elizabeth
HCP 1 RIP 5 SG 1 TIM 1 VEG 2 WAT 6

Barclay, Susan
HCP 1 OG 1 RIP 4

Barhoum, Ann
HCP 1 OG 1

Barhoum et al., Ann
HCP 1 OG 1

Barker, Anne
HCP 1 OG 1 RIP 4

Barker, Glenn
HCP 1

Barker, Glenn
HCP 1

Barksdale, Pamela C.
HCP 1 OG 1 RIP 4

Barnes, Brian
HCP 1

Barnes, Carol
GC 7 HCP 1 OG 1 RIP 4

Barnes, Carol
GC 7 HCP 1 OG 1 RIP 4

Barnes, Hyatt
HCP 1 OG 1 RIP 4

Barnes, Hyatt
GC 7 HCP 1 OG 1 RIP 4

Barnes, Joe
GC 7 GC 10 I 1 L 1

Barnes, John
GC 5 GC 10

Barnes, Parker
HCP 1 OG 1 RIP 4

Baroudi, Mona
HCP 1 L 1

Baroudi, Mona
HCP 1 L 1 OG 1

Barra, Sandy
L 1 WNSO 1

Barranga, Belindof
OG 1 RIP 4 TIM 6

Barrette, Elizabeth
E 4 GC 2 GC 8 GC 10 HCP 1 HCP 2 L 1 OG 2
TIM 1 VEG 2 WMM 1 WNSO 1

Barrington-Leigh, Christopher
E 4 GC 7 HCP 1 OG 1

Barry, John E.
HCP 1 OG 1 OG 2 RIP 4 TIM 3

Barry, Lois
GC 8 HCP 1 HCP 4 I 1 OG 1

Barry, Peter
HCP 1 L 1 WMM 1

Barsanti, Richard L.
E 5 HCP 6 HCP 7

Bartleson, Karen
HCP 6

Bartlett, Don

GC 8 HCP 1 RIP 7 SG 6

Bartlett, Melanie
GC 8 HCP 2 L 1 WAT 3 WMM 1

Basetti, Sam
OG 1

Basor, Brian
HCP 1 OG 1 WAT 1

Basor, Brian
F 1 HCP 1 HCP 2 L 1 OG 2 RIP 1 RIP 4 WAT 4

Bass, et al., Barbara
GC 8 HCP 1 HCP 3 TIM 1 WAT 3

Bassetti, W.H.C.
OG 1 RIP 4

Bassler, Sara
HCP 1 OG 1

Bassler, Sara L
HCP 1 OG 1

Bassler, Sara L.
HCP 1 OG 1 RIP 4

Bastani, Rina
HCP 1

Batcholder, Philip
GC 7 HCP 1 HCP 4 L 1 OG 2 RIP 7 SG 1 SG 6
WAT 2 WAT 3 WMM 1

Bate, Grecia
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 3 WMM 1

Bateman, Chris
OG 1 RIP 4

Bates, Linda K.
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Battaglene, A
HCP 1 OG 1

Batueale, Anne
HCP 1 OG 1 RIP 4

Baty, Jonathan & Michelle
HCP 1 L 1 OG 1 RIP 4WMM 1

Bauer, David
HCP 1 L 1

Baughn, Evelyn
HCP 1 OG 1 RIP 4

Baughn, Sarah
HCP 1 OG 1 RIP 4

Baum, Gail
HCP 1 OG 1 RIP 4

Baumann, Dana
HCP 1 OG 1 RIP 4

Baumeister, Carol
HCP 1 L 1 RIP 4

Baumgartner, Louise
GC 8 HCP 1 L 1 OG 2 TIM 1 WNSO 1

Baumgartner, Louise D.
GC 8 L 1 OG 1 TIM 1 WMM 1 WNSO 1

Bautista, David
RIP 4

Bautista, David
HCP 1

Baxtar, David
GC 7 HCP 1 HCP 2

Bayless, Mark
HCP 1 OG 1

Bayley, R. S.
GC 7 GC 9 OG 1

Beale, Vivbremsam
HCP 1 OG 1

Beard, Molly
GC 8 GC 10 HCP 1

Beardsteen, Arias
HCP 1 TIM 1

Beaver, Jason
HCP 1 L 1 RIP 4

Beaver, Jason
GC 7 HCP 1 I 1 OG 1 RIP 4

Beaver, Terry
GC 8 GC 10 HCP 1

Beck, Bruce
E 5 HCP 6

Beck, Bruce
HCP 6

Beck, Diane
HCP 2 L 1 OG 1 TIM 1 WAT 2

Beck, Karen
HCP 1 L 1 OG 2 WAT 2 WNSO 1

Beck, Mike
E 4 HCP 1 L 1 MON 1 SG 1 WAT 2

Becker, Allison S.
OG 1 RIP 4

Becker, Chris & Esther
HCP 1 OG 1 RIP 4

Becker, Stacy
OG 1

Becking, Rudolf
GC 13 HCP 1 L 1 TIM 1 WAT 3 WAT 5

Becking, Rudolf W.
GC 13 L 1 SG 2 TIM 1 WAT 3 WAT 5

Beckner, Karen
HCP 1 OG 1

Beckwith, et al., Michael
HCP 1 HCP 2 OG 1 SG 1 WMM 1

Becson, Viola A.
HCP 1

Beers, Carol
E 4 GC 7 HCP 1 SG 1

Beers, Carol L.
E 1 GC 10 HCP 1 L 1 SG 1

Beers, Suzanne
GC 8 GC 10 HCP 1 L 1 OG 1

Beers, Suzanne
GC 7 HCP 1 HCP 2 I 1 L 1 RIP 4

Beers, Suzanne
A 1 HCP 1 HCP 2 L 1 RIP 4

Beerum, Amby
E 4 GC 7 HCP 1 L 1 WAT 2

Beetem, Robert N.
HCP 1 OG 1 RIP 4

Begler, Erica
HCP 1 OG 1

Behensky, Max
H 4 HCP 1 SG 6 TIM 3 VEG 2 WAT 6

Behrman, Shannon
HCP 1 OG 1 RIP 4

Beital, Gil & Carol
GC 8 GC 10 HCP 1

Belikoff, Noah
HCP 1 OG 1 RIP 4

Bell, Clare E.
GC 8 GC 10 HCP 1

Bell, Erik
HCP 1 OG 1 RIP 4

Bell, Erik
HCP 1 OG 1 RIP 4

Bell, Kiara
OG 1 RIP 1 RIP 4

Bell, Mary
HCP 1 OG 1 RIP 4

Bell, Pamela A.
F 1 HCP 1 HCP 2

Bell / Ellenberg, Judith / Daniel
HCP 1

Bellows, Story
GC 7 HCP 1

Bellwether, Dana
HCP 2 L 1 OG 1 RIP 4 SG 3 TIM 1 WAT 3 WMM 1
WNSO 1

Benet, John

HCP 1 OG 1 RIP 5 RIP 7

Bentley, Patricia
GC 7 GC 10 I 1 L 1

Berces, Roy A.
HCP 1 OG 1 RIP 4

Berdahl, Jennifer L.
HCP 1 OG 1 RIP 4

Berg, Suzanne
HCP 1 L 1 OG 2 RIP 4 WAT 3 WMM 1

Bergeron, Joe
HCP 1 OG 1 RIP 4

Bergeron, Joe
HCP 1 OG 1 RIP 4

Bergman, Maeve
HCP 1 OG 1 RIP 4

Bergmon, Teddie
HCP 6

Berk, Ted
OG 1 RIP 4

Berkey, Constance B.
GC 8 GC 10 HCP 1

Berkman, Marc
GC 8 HCP 1 OG 2 SG 1 TIM 1 WMM 1 WNSO 1

Berkowitz, Joe
HCP 1 OG 1 RIP 4

Berkowitz, Joe
HCP 1 OG 2 RIP 4

Bermopane-Hamaker, JoAnn
HCP 1

Bernard, Brendan
HCP 1 OG 1 RIP 4

Bernard, Michelle
GC 8 HCP 1 L 1 MON 1 RIP 4 SG 1 WAT 2 WAT 3
WMM 1 WNSO 1

Bernard, Michelle S.
GC 8 HCP 1 L 1 RIP 4 SG 1 TIM 1 VEG 2 WAT 3

WMM 1 WNSO 1

Berndt, Janice
GC 7 HCP 1 I 1 L 1 OG 1 WAT 2

Bernhart / Reese, Susannah /James
HCP 1 OG 1 RIP 4

Bernstein, Alison
GC 8 HCP 1 HCP 2 RIP 5 RIP 7 TIM 1

Bernstein, Alison
HCP 1 TIM 1

Bernstein, Patricia S.
E 4 HCP 1 OG 2 WNSO 1

Bernstein, Tamara
E 4 HCP 1 RIP 4

Bernstein / Coles, Patricia / Kevin
E 3 E 4 HCP 2 HCP 3 OG 2

Berry, Dione
HCP 1 OG 1 RIP 4

Berry, Hope
OG 1 RIP 4

Berry, Hope
OG 1 RIP 4

Bertolucci, Terri
OG 1 RIP 4

Bertram, Allison
OG 1

Bet-tram, Janet
HCP 1 OG 1 RIP 4

Bessire, Brent
HCP 1 OG 1

Beth, Barbara
HCP 1 I 1 OG 1

Beth, Barbara
HCP 1 L 1 OG 1 TIM 1

Bethel, Audrey
GC 8 L 1 OG 2 WAT 3

Bettaso, James B.
GC a HCP 1 OG 1 RIP 4

Bettencourt, Loree
OG 1 RIP 4

Bettencourt, Loree
OG 1 RIP 4

Bettis, Richard
HCP 6

Beyer, Kerstin
GC a HCP 1 L 1 OG 1 RIP 4 WAT 3 WMM 1

Bhatia, Ponch E.
OG 1 RIP 4

Bianchi, Emanuela
HCP 1 OG 1 RIP 4

Biard, Tara
HCP 1

Biard, Tara
HCP 1

Biernacki, Amy
HCP 1 OG 2 RIP 4

Biglar, Erica
HCP 1 P 1

Bigler, Michele
HCP 1 L 1

Bigler, Mike
HCP 1 L 1

Billy, Stephen E.
HCP 1 OG 1 RIP 4

Bind, Ron
HCP 1 L 1 OG 1

Birdsall, Daniel W.
GC 7 HCP 2 L 1 TIM 1

Birdsall, Laurie
E 4 GC a HCP 1 L 1 OG 1 TIM 1 TIM 5

Birdsall, Laurie
E 4 GC a H 1 HCP 1 L 1 OG 2 TIM 1 WMM 1

Birdsall, Pamela
HCP 1 OG 1

Bishard, Christine
P 1

Bishop, Bruce
H 2 I 1 L 1 OG 1

Bitts, Dave
F 1 HCP 1 OG 1 RIP 4

Bitts, Dave
F 1

Bix, Darward
HCP 1 L 1 OG 1 TIM 1

Bjork, Jeff & Carlina
HCP 1 OG 1 RIP 4

Bjorklund, Kris
HCP 1 P 1

Black, Cory
HCP 1 RIP 7 SG 6 WAT 6

Black, Sandra J.
HCP 1

Black / Theinor, Trout / Silvia
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

Black / Theinor, Trout / Silvia
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 6 WMM 1

Blackard, Eric
HCP 6

Blackard, Eric
HCP 6

Blackburn, Mark
HCP 1

Blackmarr, Lois R.
HCP 1 OG 1

Blackwell, Mikol
E 4 GC 10 HCP 2 HCP 3 L 1 RIP 4 SG 1 TIM 1
TIM 5 WAT 2 WAT 3 WMM 1 WNSO 1

Blair, Nyla

L 1 WAT 2

Blake, David S.
HCP 1 OG 1 RIP 4

Blake, Kathy
HCP 1 L 1

Blake, Kathy
HCP 1 L 1 OG 1

Blanchard, Chad
GC 8 HCP 1

Blanchard, Chad
HCP 1 OG 1 OG 2

Bland, Dean & Emilia
GC 8 GC 10 HCP 1 L 1 OG 1

Blankenau, Laurine
HCP 1

Blatteis, Beatrice
HCP 1 OG 1 RIP 4

Bledsoe, Carol
HCP 1 OG 1 RIP 4

Blevins, Timothy R.
HCP 1 OG 1 RIP 4

Blevins-Jones, Melissa
GC 8 GC 9 HCP 1 L 1 OG 1

Blond, Nick
HCP 1 OG 1

Blond, Nick
HCP 1 OG 1

Blond, Nick
OG 2 TIM 3

Blood, Sherley E.
H 3 HCP 1 L 1 OG 1 RIP 4

Bloom, Richard
HCP 1 HCP 2 L 1 WAT 1

Bloom, Richard
HCP 1 HCP 2 HCP 3 L 1 TIM 1

Bloomfield, Gary & Jane
E 4 HCP 1 HCP 2 I 1

Blues, Aeon
GC 10 L 1

Blumenthal, Robin
HCP 1 OG 1

Blyther, Ruth
GC 7 GC 10 OG 1 RIP 4 SG 6 VEG 1 WAT 2 WMM 1
WNSO 1

Bobb, Gerry
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1
WAT 3 WAT 6 WMM 1

Bobb, Sally
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 TIM 1 WAT 3

Bobeck, Lily
GC 8 HCP 1 HCP 2 L 1 RIP 4 TIM 1 WAT 3 WMM 1
WNSO 1

Bobek, Lily
E 1 GC 5 GC 8 L 1 TIM 1 WAT 3 WMM 1 WNSO 1

Bodin, Cindy
HCP 1 L 1 OG 2

Boehm, Michael
HCP 1 OG 2 TIM 1

Boergers, Kathleen
GC 3 GC 8 HCP 2 HCP 3 L 1 RIP 4 WNSO 1

Boergers, Kathleen
GC 8 HCP 1 HCP 2 HCP 3 L 1 RIP 4 SG 1 WAT 3
WNSO 1

Boesgaard, Elisabeth
HCP 1 I 1 L 1 TIM 1

Boggio, Juliet
HCP 1 OG 1 RIP 4

Boggio, Juliet
HCP 1

Boghossian, John A.
HCP 1 OG 1

Bohlman, Dorothy
OG 2 SG 1 TIM 3

Boiland, Carl
HCP 1 RIP 4

Boisvert, Jean-Francois
HCP 1 OG 1

Boldt, Kevin
HCP 1 OG 1 RIP 4

Bolen, Mike
GC 8 HCP 1 L 1

Bolen, Mike
HCP 1 RIP 4

Boles, Laura
HCP 1 OG 1 RIP 4

Boles, Laura
HCP 1 L 1 OG 1

Bolitho, Brian
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Bollenbach, Bill
HCP 1 RIP 7

Bond, Kent
HCP 6

Bond, Niel
HCP 1 RIP 5 SG 1

Bondoz, Anne
HCP 1 RIP 4

Bonvillain, Rachel
GC 7 H 4 HCP 1

Booker, Noah
GC 5 H 4 HCP 1 HCP 2 L 1 RIP 4 SG 1

Boom, Patricia
E 4 GC 10 HCP 1 OG 1 OG 2 VEG 2 WAT 6

Boom, Patricia
E 4 HCP 1 OG 1 WAT 3

Boom, Patricia

GC 10 HCP 1 OG 1

Boom, Patricia
GC 10 HCP 1 OG 2

Boom, Patricia
E 4 GC 8 HCP 1 OG 2 SG 1 TIM 1 WAT 5

Boom, Patricia
E 4 GC 8 GC 10 HCP 1 OG 1 RIP 4 TIM 1 VEG 2
WAT 3

Boom, Patricia
GC 10 HCP 1 OG 2 SG 1 TIM 1 TIM 3 VEG 2

Boone, Vera
GC 8 HCP 1

Borchardt, Lois
GC 8 GC 10 HCP 1 L 1 OG 1

Borges, Connie
OG 1 RIP 1

Borjan, Jackie
HCP 1 OG 1 RIP 4

Borris, Ben
GC 10 OG 1

Botvin, Irma
HCP 1 OG 1 RIP 4 SG 1 WAT 6

Bouley, Kenneth & Paola
HCP 1 I 1 L 1 OG 1 RIP 4

Bounds, Clancy
HCP 1 OG 1 RIP 4

Bourna, Helen
E 2 HCP 1 I 1 L 1 L 2 OG 1

Bourne, Helen
GC 7 HCP 1 I 1 L 1 L 2 OG 1 SG 1 WAT 2

Bourne, Helen
HCP 1 OG 1

Bourne, Kim
HCP 1 TIM 1

Boutier, Earl
GC 7 HCP 1 I 1 L 1

Boutwell, Jenny
HCP 1 OG 1 RIP 4

Bouyea, Laruen D.
GC 8 HCP 3 L 1 OG 2 RIP 4 TIM 1 WMM 1

Bowen, Lynne
HCP 1 OG 1

Bowen, Lynne C.
HCP 1 OG 1

Bower, Robert
GC 7 GC 10 I 1 L 1

Bowers, Harvey
GC 7 GC 10 I 1 L 1

Bowman, Jennifer
HCP 1 OG 1

Bowman, Richard
GC 8 HCP 1 HCP 2 L 1 RIP 4 RIP 5 SG 1 SG 6
TIM 1 WAT 2 WAT 3 WAT 6 WMM 1 WNSO 1

Bowtwell, Jenny D.
HCP 1 OG 1 RIP 4

Boxer, Nora
GC 8 HCP 1 HCP 2 HCP 5 WAT 3 WMM 1

Boyd, Ky J.
HCP 1 OG 1 RIP 4

Boyd, Patrick M.
GC 7 HCP 1 L 1 OG 1 OG 2 P 1

Boyer, John & Persephone M.
HCP 1 OG 1 RIP 4

Boyer, Jr., Edward
GC 7 GC 8 GC 11 H 1 HCP 1 L 1 MON 1 MON 2
RIP 4 TIM 10 w 1 WAT 3 WMM 1 WNSO 1

Boyes, Marsha D.
HCP 1 OG 1 RIP 1

Boyrazian, Ankene
HCP 1 HCP 2 L 1 OG 1 OG 2 RIP 4 SG 1 TIM 1
TIM 5 WAT 3 WMM 1 WNSO 1

Bradford, Kirsten
GC 8 GC 10 HCP 1

Bradford, Pat
HCP 1 OG 1 RIP 4

Bradley, Gwen
GC 14

Bradley, Jayme
HCP 1 OG 1

Bradley, Pastor & Kathleen
HCP 1

Bradshaw, Richard
HCP 1 OG 1 RIP 4

Bradshaw, Richard
HCP 1

Bradshaw, Richard
HCP 1 TIM 1

Bradshaw, Richard
HCP 1 OG 1

Brady, Judy
TIM 1

Brady, Theresa
E 1 GC 9 HCP 1 RIP 4 SG 1 TIM 1 TIM 6 WAT 2
WMM 1

Brady, Theresa
GC 7 GC 9 HCP 1 I 1 RIP 4 SG 1 TIM 1 TIM 3
TIM 6 VEG 2 WAT 2 WMM 1

Brady, Theresa
E 1 GC 5 GC 9 RIP 1 SG 1 TIM 6 VEG 2

Bragg, James A.
P 2

Braginsky, Carl
OG 1 RIP 4

Braginsky, Cheryl
HCP 1 OG 1 RIP 4

Bragman, Lawrence
HCP 1 RIP 4

Bragman, Lawrence
E 1 OG 2 RIP 4

Brainerd, William
H 4 HCP 2 HCP 6 L 1 OG 2 RIP 11 TIM 1 TIM 3
VEG 2 WAT 4 WMM 1 WNSO 1

Brainerd, William R.
HCP 2 HCP 6 OG 1 RIP 4 SG 1 TIM 1 TIM 3 VEG 2
WAT 4 WMM 1 WNSO 1

Bram, Joel
GC 7 HCP 1 L 1 OG 1 P 1 RIP 4

Brandenburg, Stan
E 5

Brandon, David L.
HCP 1

Brandon, Joan
GC 8 HCP 1 HCP 3 L 1 TIM 1 WAT 3

Brandon, Joan
GC a HCP 1 HCP 3 L 1 TIM 1 WAT 3

Brands-Maloney, Carissa
H 2 HCP 1 RIP 7 TIM 1 WMM 1

Brandt, Devika
HCP 1 HCP 2 L 1 RIP 4

Brandt, Devika
GC 10 HCP 2 HCP 3 L 1 RIP 4

Brasch, Gerald
GC 7 GC 10 I 1 L 1

Brast, Dave
A 1 GC 8 HCP 2 L 1 OG 2 RIP 4 SG 3 TIM 1
WAT 3

Braun, Michael & Jole
HCP 1 OG 1

Braves /Chandler, Betty / Dan
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Bravo, Ana M.
HCP 1 OG 1 RIP 4

Bravo, Guy
E 5 HCP 6

Brecher, Dana
HCP 1 OG 1 RIP 4

Brecher, Dana
HCP 1 OG 1 RIP 4

Breckenridge, Linda
HCP 1

Breidenstein, Nan
OG 1

Brenna, Mary
HCP 1 OG 1

Brennan, Gerald E.
HCP 1 HCP 2 HCP 3 RIP 4 WAT 6 WNSO 1

Brennan, Timothy
HCP 5

Breugem-Horlick, A.L.
GC 8 GC 10 HCP 1

Breuninger, Nancy M.
HCP 1 L 1 OG 1 P 1 SG 1

Brewster, Rose
GC 7 GC 8 HCP 1 L 1 MON 1 MON 7 RIP 8 TIM 1
WAT 2 WAT 3

Brian, Jane
HCP 1 OG 1

Bricker, Mandy
HCP 1 OG 1 RIP 4

Bricker, Mandy
HCP 1 RIP 1 RIP 4 SG 6

Bricknell, Christi
H 1 HCP 1 OG 1 SG 1 SG 6 TIM 3

Briggs, Irene
E 1 E 4 HCP 1 L 1 WAT 3

Briggs, James
GC 8 HCP 1 L 1

Briggs, Katie

H 3 HCP 1 L 1 OG 1 SG 1

Briggs, Sandra
HCP 1

Bright, Mitchell L.
GC 7 GC 10 I 1 L 1

Bright, Vager
GC 7 GC 10 I 1 L 1

Brill, Bernard
HCP 1 OG 1 RIP 4

Brinkley, Stephan
GC 5 GC 10 HCP 1 OG 2

Brinkley, Stephen
GC 8 GC 10 HCP 1

Britton, Anne C.
HCP 1 OG 1 RIP 4

Britton, Khadijah
GC 14

Brobeck, James
HCP 1 HCP 2 L 1 SG 3 TIM 1 WAT 3 WMM 1 WNSO 1

Brobeck, James
HCP 1 L 1 OG 2 SG 3 TIM 1 WAT 3 WMM 1 WNSO 1

Brockett, Debbie
HCP 1 HCP 2 OG 1

Brockmeyer / Mitchel, Doug / Mary
HCP 1 OG 1 RIP 4

Broderick, William
E 5 HCP 6

Brodhead, J.
HCP 1

Brodhead, J.
HCP 1

Brodman, Linda
GC 5 HCP 1 L 1 OG 1 RIP 4

Brohmer, Willow
HCP 1 I 1 OG 1 TIM 3

Bronkhorst, Randy
GC 7 GC 10 I 1 L 1

Brooks, M J
HCP 1 I 1

Brooks, MJ
HCP 1

Brooks, Mary Jo
HCP 1

Brooks, Melissa
F 1 GC 10 HCP 1 L 1 RIP 1 RIP 8 RIP 9 SG 6
WAT 4

Brooks, Sarah
E 2 H 4 I 1 SG 1

Brooks, Sarah
E 2 E 3 E 4 H 1 HCP 1 SG 1

Broos, Steve
E 3 HCP 1 I 1

Brophy, Howard V.
F 4 P 2

Brown, Beth
HCP 1 RIP 1 RIP 5 RIP 7 SG 6

Brown, Debra S.
HCP 1 OG 1

Brown, Diane
HCP 1

Brown, Douglas
HCP 1 OG 1 RIP 4

Brown, Janet
GC 8 GC 9 HCP 1 HCP 2 L 1 OG 1 OG 2 RIP 1
TIM 1 VEG 1 WA 1 WAT 2 WMM 1 WNSO 1

Brown, Janet
E 4 GC 2 GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4
SG 1 TIM 1 TIM 3 VEG 2 WMM 1 WNSO 1

Brown, Jordan
OG 1

Brown, Josh
HCP 1 L 3 TIM 1

Brown, Lichen
GC 8 GC 10 HCP 1

Brown, Lisa M.
HCP 1

Brown, Louisa
HCP 1 L 1

Brown, Mark
OG 1 RIP 4

Brown, Michael
HCP 1 HCP 2 L 1 OG 2 TIM 1 WAT 3 WMM 1 WNSO 1

Brown, Robert
GC 8 GC 10 HCP 1 L 1 WAT 2

Brown, Steve
GC 7 GC 10 I 1 L 1

Brown, Tracy
HCP 1 I 1 L 1

Brown, et al., Betsy
GC 8 HCP 1 I 1 L 1 OG 2 RIP 1

Browning, Barbara
FACT 1 GC 7 L 1 P 1

Browning, Barbara
GC 8 HCP 1 L 1

Browning, John
HCP 1 OG 1 RIP 4

Bruce, Deborah
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1
WAT 3 WAT 6 WNSO 1

Bruce, Deborah
GC 7 GC 8 H 2 HCP 1 HCP 3 I 1 L 1 OG 1
OG 2 SG 1

Bruce, Deborah
GC 7 GC 8 HCP 1 RIP 4

Bruce, Deborah
F 1 GC 8 HCP 2 HCP 4 I 1 L 1 L 2 OG 1

OG 2 RIP 1 RIP 4 SG 6 TIM 1 TIM 6 WAT 3 WAT 4
WAT 6

Bruce, Larken
HCP 1 P 1 TIM 6

Bruce, Matt
HCP 1 HCP 4 L 1

Bruckenstein, Larry
HCP 1 HCP 2 L 2 RIP 4 SG 6 TIM 1

Bruckenstein, Larry
HCP 2 L 1 OG 2 RIP 4 WAT 2

Brumpley, F & E
GC 7 HCP 1

Brunner, Mel & Linda
GC 8 GC 10 HCP 1 L 1 OG 1

Brunswig, Jenny
HCP 1 OG 1 RIP 4

Bryan, Joe & Petra
HCP 1 OG 1

Bryson, Zachary
GC 5 GC 8 GC 10 HCP 1

Buada, Kathi
HCP 1 OG 1

Buada, Kathi
HCP 1 OG 1

Buch, Ami
GC 7 GC 8 HCP 4 OG 2 P 1

Buchner, Bill
HCP 6

Buck, Richard
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 TIM 1
WAT 3 WAT 6 WMM 1 WNSO 1

Buckingham, Megan
GC 7 GC 8 H 4 HCP 1 OG 1 RIP 4 TIM 1 TIM 3

Buckland, Traude
HCP 1 OG 1 RIP 4

Buckley, Karen & Richard
HCP 1 HCP 2 L 1 RIP 4

Buckley, Karen & Richard
HCP 1 HCP 2 HCP 3 L 1 RIP 4

Buckley, Karen & Richard
HCP 1 HCP 2 L 1 RIP 4 TIM 5

Buckley, Mimi & Peter
HCP 1 HCP 2 L 1 RIP 4

Buckley, Peter & Mimi
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Buckley, Peter & Mimi
HCP 1 HCP 2 L 1 RIP 4 TIM 5

Buckley, Susan
GC 7 HCP 1 L 1 OG 1 TIM 3

Buday, John
HCP 1 OG 1 RIP 4

Buday, John G.
HCP 1 OG 1 RIP 4

Buday, John G.
HCP 1 OG 1 RIP 4

Buday, Linda
HCP 1 OG 1 RIP 4

Buday, Linda
HCP 1 OG 1 RIP 4

Bue, Jett
HCP 1 OG 2 RIP 4 WAT 2

Bui, Steve
HCP 1 OG 1 RIP 4

Bulkley, Katrina
HCP 1

Bull, Hannah-Leigh
GC 8 HCP 1 HCP 2 L 1 OG 1 OG 2 RIP 4 SG 1
TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Bull, Mary
E 4 GC 5 GC 8 HCP 1 HCP 2 HCP 4 L 1 L 2
MON 2 OG 1 OG 2 TIM 1 TIM 5

Bull / Krebsbach, Mary / Robert
GC 7 GC 8 HCP 1 HCP 2 I 1 L 1 L 2 OG 1
OG 2 RIP 4 RIP 7 SG 3 TIM 1 WAT 3 WNSO 1

Bull III, Ignall William
GC 8 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1 TIM 5
WAT 3 WMM 1 WNSO 1

Bumopane-Hamaker, Joann
HCP 1 OG 1

Bundy, Summer
F 1 HCP 1 L 1 OG 2 RIP 1 RIP 4 WAT 1 WAT 4

Buneman, Kelvin
GC 8 HCP 1 L 1 RIP 4 TIM 1 WAT 3 WMM 1 WNSO 1

Bunge, Tash
HCP 1 OG 1 RIP 4

Bura, Lorri
GC 8 GC 10 HCP 1 L 1 OG 1

Burch, Benjamin
HCP 1 OG 1

Burch, Benjamin
HCP 1 OG 2 RIP 4

Burdick, Stephen M.
E 5 HCP 6

Burger, Bruce
L 1 OG 1 P 1

Burgin,
HCP 1 OG 1 RIP 4

Burgoon, Dan H.
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Buringrud, Amy
E 1 H 4 HCP 1 L 1 L 2 MON 1 OG 1 TIM 3

Burk, Joyce
GC 8 HCP 2 L 1 OG 2 RIP 4 TIM 1 WAT 3 WNSO 1

Burk, Joyce
GC 8 HCP 1 L 1 OG 2 RIP 4 TIM 1 WAT 3 WNSO 1

Burke, Robert T.
OG 1 RIP 4

Burkhardt, Dale
GC 7 GC 10 I 1 L 1

Burmett, Richard
GC 8 HCP 1

Burnard, Kathy
HCP 1 OG 1 RIP 4

Burner, Family
OG 1

Burnett, Thomas
GC 7 HCP 1

Burns, Barbara
F 1 GC 7 GC 8 HCP 1 I 1 L 1 OG 2 RIP 4
RIP 8 RIP 10 SG 1 TIM 1 WA 1 WAT 1 WMM 1 WNSO 1

Burns, Barbara
GC 8 HCP 1 I 1 L 1 RIP 8 TIM 1

Burns, Bradley
E 1 F 1 HCP 1 L 1 OG 2 RIP 5 TIM 1 WAT 4
WNSO 1

Burns, Diane
HCP 1

Burns, J. Bradley
E 1 F 1 GC 7 GC 8 HCP 1 HCP 2 I 1 L 1
OG 2 RIP 8 RIP 10 WAT 1 WAT 3 WAT 4 WMM 1 WNSO 1

Burns, J. Bradley
E 4 F 1 GC 8 HCP 1 I 1 L 1 OG 2 RIP 1
SG 7 WAT 1 WAT 2 WAT 4 WMM 1 WNSO 1

Burns, J. Bradley
E 4 F 1 GC 7 GC 8 HCP 1 L 1 OG 2 RIP 4
WAT 1 WAT 4 WMM 1

Burns, Lindsay H.
HCP 1 OG 1 RIP 4

Burr, Melissa
GC 8 HCP 1 L 1

Burr, Melissa
GC 7 HCP 1 P

Burranco, Luis
HCP 1

Burris, Ginny
A 2 GC a GC 10 HCP 1

Burrough, Ryan
OG 1 P 1

Burrow, Jack Robert
GC a GC 10 HCP 1 L 1 OG 1

Burton, James E.
HCP 1 OG 1

Burton, Jennett
GC a GC 10 OG 1

Buschman, Richard
GC a HCP 1 L 1 OG 1 RIP 4

Buschman, Richard
HCP 1 L 1 OG 1 OG 2 RIP 4

Bush, Bernie
E 5 HCP 6 RIP 4

Butcher, Catherine
HCP 1

Butler, Connie
GC a GC 10 OG 1 TIM 1 TIM 3

Butler, Connie
HCP 1 I 1 MON 1 OG 1 OG 2 TIM 3

Butler, Cynthia
HCP 1 OG 1 RIP 4

Butler, Jack
HCP 6

Butterfield, Lisa
E 4 F 1 GC 5 H 3 HCP 1 HCP 2 L 1 OG 2
RIP 4 SG 1 TIM 1 WAT 3 WMM 1 WNSO 1

Butterfly-Hill, Julia
GC 13 HCP 1 I 1 L 1 OG 1 WAT 2

Buyer, Nora

GC 8 HCP 1 HCP 2 RIP 4 TIM 1

Byerly, Dennis
E 5 HCP 6

Byrd, Kristin B.
HCP 1 OG 1 RIP 4

Byrd, Tom
HCP 1 L 1

Cabasino Jr., L.V.
HCP 1 OG 1

Cabral, Natalie
HCP 1 OG 1

Cabruel, Jennifer
HCP 1 OG 1 RIP 4

Cadenasso, Peter R.
HCP 6

Caffery, Roy
GC 8 GC 10 HCP 1

Cagne, Jacques
HCP 1 L 1 RIP 1 RIP 4 WNSO 1

Cain, Christine
HCP 1 OG 1 RIP 4

Cain, Kevin
OG 1 RIP 4

Cain, Tim / Gay/John
HCP 1 L 1

Calby, Margaret B.
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Calby, Margaret B.
F 1 HCP 1 L 1 RIP 4 SG 1 SG 7 TIM 1

Caldwell, Kathleen
HCP 1 HCP 2 RIP 7 TIM 1 WAT 6 WMM 1

Caldwell, Sandra E.
HCP 2 L 1 OG 2 WNSO 1

Calhoun, Angela
HCP 1 OG 1

Calhoun, Angela
HCP 1 OG 1

Calhoun, Dawn
HCP 1 OG 1 RIP 4

Calhoun, Elijah
HCP 1 OG 1

Calhoun, Elijah
HCP 1 OG 1

Callaway, Ellen
HCP 1 OG 1 RIP 4

Callenbach, Ernest
OG 1 RIP 4

Callenbach, Ernest
HCP 1 L 1 OG 1 RIP 4

Campbell, Allison
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Campbell, Arlene
HCP 1 L 1 OG 1 RIP 4 WAT 4

Campbell, David
HCP 1 RIP 4

Campbell, M
HCP 1 P 1

Campbell, Nancy H.
GC 8 GC 10 HCP 1

Campbell, Vicki
OG 1

Campos, Melina
HCP 1 OG 1 TIM 6

Campton, Bert
HCP 6

Canin, Lisa
HCP 1 OG 1 RIP 4

Cann, James
L 1 RIP 4 WAT 2

Cann, James A

HCP 1 OG 1 RIP 4

Cann, Roald
GC 8 GC 10 HCP 1

Canter, Mindy
HCP 1 OG 1 RIP 4

Caplan, Shannon
GC 10 L 1 RIP 4

Carasik, Bob
HCP 1 OG 1 RIP 4

Carbonnea, Daniel
HCP 1 TIM 1

Carbonneau, Daniel
GC 8 HCP 1

Cardenas, Matthew J.
HCP 1 OG 1

Cardillo, Charles
HCP 1 RIP 4

Cardon, Lorelie
HCP 1

Carey, Gerard V.
GC 8 GC 10 HCP 1

Carey, Mark & Debra
F 1 GC 7 P 1

Carhart, Mary
HCP 1 OG 1 RIP 4

Carini, Andrew
GC 7 HCP 1 L 1

Carlstad, H.
GC 8 HCP 1

Carlstad, Harold
GC 7 GC 8 HCP 1 L 1 OG 1 RIP 4 SG 1

Carlstad, Harold N.
GC 9 HCP 1 L 1 OG 1 RIP 4 TIM 5

Carmichael, Lucia
HCP 1 OG 1 RIP 4

Carmichael, Lucia
HCP 1 OG 1 RIP 4

Carney, Dan
GC 7 GC 10 I 1 L 1

Carney, Erin
HCP 1 OG 1

Carney, June
HCP 1 OG 1 RIP 4

Carolan, Lorraine
E 4 GC 5 GC 6 GC 7 GC 8 P 1 TIM 1

Caroll,
HCP 1

Carpenter, Steve & Julie
HCP 1 OG 1 RIP 4

Carper, Leslie
GC 7 GC 8 HCP 1 WAT 3

Carper, Leslie
GC 8 HCP 1 HCP 3 L 1 WAT 3

Carr, Erin
GC 5 HCP 1 L 1

Carr, Ma:y
GC 14 OG 1

Carrie, Levy
HCP 1 OG 1 RIP 4

Carrigan, James L.
HCP 1 L 2 SG 1 WAT 2

Carroll, Kathleen
GC 8

Carroll, Susan Ann
HCP 1 OG 1

Carson, Mary A.
HCP 1 OG 1 RIP 4

Carson, Mary A.
HCP 1 OG 1 RIP 4

Carson, Michael
HCP 1 OG 1

Carter, Virginia S.
HCP 1 MI 1 OG 1

Carter et al., Nancy
GC 8 HCP 3 L 1 OG 2 WAT 3 WMM 1 WNSO 1

Catty, Fay A.
HCP 1 OG 1 RIP 4

Carzoli, Cheryl
HCP 1 OG 1

Casey, Barbara
GC 8 GC 10 HCP 1 L 1 OG 1

Casey, Marna
GC 7 HCP 1

Casey / Chan, Alexis / Keald
HCP 1 L 1 OG 1 RIP 4 SG 1 TIM 1

Cassidy, Susan
OG 1

Cassil, Karen
HCP 1 OG 1 RIP 4

Castaldo, Louise
HCP 1 OG 1

Castellanos, Gabriel
HCP 1 OG 1

Catalina, et al., Maureen
HCP 1 MON 1 WAT 2 WAT 5

Caterson, Denee
HCP 1 WAT 4

Cato, Julien
GC 7 GC 8 HCP 1 L 1 P 1

Catrette, Scott
HCP 1 OG 1

Catton, Steve
E 2 E 4 H 4 HCP 1 HCP 4 L 1 OG 2 RIP 1
RIP 4 SG 3 TIM 1 WAT 3

Cavallaro / Wax, Lenny / Eva
GC 8 GC 10 HCP 1 L 1 OG 1

Cavallino, Patricia

GC a HCP 1 OG 1

Cavallo, Sharon P.
E 4 GC 1 GC a H 2 HCP 2 L 1 OG 2 RIP 4
TIM 1 TIM 3 WAT 6 WMM 1 WNSO 1

Cavness, Greg
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Cea, Sandra M.
HCP 1 L 1 OG 2 WAT 2 WNSO 1

Ceaser, David
GC a HCP 1 HCP 3 OG 1

Ceaser, Harvey & Phyllis
E 1 HCP 1

Cello, Armand
HCP 1 OG 1 RIP 4

Cendin, Dr. Steven
H 4 HCP 1 I 1 L 1 OG 1 RIP 1 SG 1 TIM 1
WAT 3 WMM 3

Cerdito, Adolph
HCP 1

Cerino, J'aimenikai
GC 7 HCP 1 HCP 2 I 1 L 1 OG 2 RIP 4 SG 3

Cerino, J'aimenikai
HCP 1 HCP 3 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 2
WAT 6 WMM 1

Cerino, J'aimenikai
HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 6 WMM 1

Cesare, Mark
P 1

Cesare, Mark
HCP 1 OG 2

Cetojevic, MD, Igor
HCP 1 OG 1 RIP 4

Cetrone, Carol
GC a GC 10 HCP 1

Ceverha, Dan
HCP 1 OG 1 RIP 4

Ceyeh, Cheryl
HCP 1 OG 1 RIP 4

Chaikin, Charlotte
HCP 1 OG 1

Chaing, Mi
HCP 1 L 1 OG 2 RIP 4 WAT 3

Chamberlain, Katharine
GC 8 GC 10 HCP 1

Chamberlin, Juli
OG 1 OG 2 RIP 4 SG 6 WAT 3

Chambers, E. Oscar
HCP 1 OG 1 RIP 4

Chambers, E. Oscar
HCP 1 OG 1 RIP 4

Chambers, Lori
HCP 1 OG 1

Chambers, Steve
HCP 1 MON 1 RIP 4

Chambers, Steve
HCP 1 MON 1 RIP 4

Champe, Mark
OG 2 RIP 4

Champney, Angela
HCP 1 OG 1

Chaney, Laura Marie
GC 8 GC 10 HCP 1

Chaney, Raymond
GC 7 GC 10 I 1 L 1

Chang, Anny
HCP 1 OG 2 RIP 4 SG 1 TIM 1

Chapin, June R.
HCP 1 OG 1

Chapin, June R.
HCP 1

Chapman, Bruce
E 5 HCP 6

Chardin, Loretta
HCP 1

Charles, Andre
HCP 1 MON 1

Charney, Reginald B.
HCP 1 OG 1 RIP 4

Charraga, Nancy
HCP 1

Charraga, Nancy
GC 7 HCP 1 L 1 L 2 OG 1 OG 2 WNSO 1

Charraga, Nancy
HCP 1 OG 1 P 1

Charraga, Nancy
GC 5 HCP 1 L 1 L 2 OG 1 OG 2

Chase, Dave
HCP 1 L 1 MON 1 RIP 4

Chase, Kathy
GC 7 GC 10 OG 1

Chase, et al., Diana L.
HCP 1 L 1 OG 1

Chastain, Katherine
HCP 1 OG 1 RIP 4

Chatten-Brown, Justin
GC a HCP 1 L 1 RIP 4 WAT 3 WMM 1

Chen-See, Nancy
GC a GC 10 HCP 1 L 1 OG 1

Cheng, Britte
HCP 1 OG 1

Cheng, Sophia
HCP 1 L 1 OG 2 RIP 4 WAT 3

Cherry, Britte
HCP 1

Chevraux, Traci
HCP 1 RIP 7 TIM 1 WAT 6 WMM 1

Chiavola, Kathy
GC a GC 10 HCP 1 L 1

Childs, Peter
GC 10 HCP 1 OG 1

Childs, Peter
GC 10 OG 1

Childs, Peter 0.
GC 7 I 1 OG 1

Childs, Peter 0.
HCP 1 OG 1

Childs, Sharron
GC 7 I 1

Childs, Sharron
HCP 1

Chilen, Betty J.
HCP 1 OG 1 RIP 4

Chilukuri, Suneeta
HCP 1 OG 1 RIP 4

Chon / Chang, Chris / Susan
HCP 1 OG 1 RIP 4

Chong, Ethel
HCP 1 OG 1 RIP 4

Chong, Nari
HCP 1 OG 1

Christensen, Judy
HCP 1 RIP 4

Christian, Andrew
HCP 1 L 1

Christianson, Jon
HCP 1 OG 1 RIP 4

Christou, Robert
HCP 1 OG 1

Christy, Stacy E.
HCP 1 OG 1 RIP 4

Chrysler-Flemming, Susan
HCP 1 OG 1 RIP 4

Chuckey, Dorothy
HCP 1

Chun, Alice
HCP 1 OG 1

Chun, Alice
OG 1

Chun, Forest T.
SG 1 TIM 3

Church, Don
GC 7 GC 10 I 1 L

Churchy, D
HCP 1

Ciafin, Chare E.
HCP 1 HCP 2 L 1 RIP 4

Ciafron, Clare E.
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Cienfuegos, Paul
GC 7 HCP 1 L 1

Cirino, Leonard
HCP 1 HCP 4 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 6

Ciullo, Vanora
GC 7 OG 1

Clare, Carolina
HCP 1 OG 1 RIP 4

Clark, Donica
HCP 1 OG 1 RIP 4

Clark, Joe & Sandy
HCP 1 OG 1

Clark, Louise Harvey
HCP 1

Clark, Sarah
GC 8 GC 10 HCP 1 OG 1

Clarke, Barbara
HCP 1 OG 1 RIP 4

Clarke, CS
GC 10

Clarke, Chandra
HCP 1 OG 1 RIP 4

Clarke, Scott
GC 5 GC 8 HCP 1 HCP 4 P 1 WAT 2

Clarke, Tim
HCP 1 OG 2 RIP 4

Clarke, Tim M.L.I.
HCP 1 OG 1 RIP 1 TIM 1

Clarke, Timothy
OG 1

Clay, Clem
HCP 1 TIM 1 WAT 3

Clay, Rob
E 4 HCP 1 L 1 OG 1 SG 1

Cleaves, M.
HCP 1 OG 1 RIP 4

Cleek, Kevin & Elisa A.
HCP 1 MON 1 OG 1 SG 1 TIM 6 TIM 8

Cleek, Kevin & Elisa Auwbre
HCP 1 MON 1 RIP 4

Clein, Bethany
HCP 1 OG 1 RIP 4

Cleland, Patricia A.
HCP 1 OG 1 RIP 4

Clemens, Reba
OG 1

Clemente, Corina
GC 8 GC 10 HCP 1

Clements, Roy
GC 7 GC 10 I 1 L 1

Clinton, Nicholas
GC 8 HCP 2 L 1 OG 2 RIP 4 WAT 3

Clum, Bryan
OG 1 RIP 4

Cluster, Mike
MON 1 RIP 4 WAT 2

Cluster, Mike
HCP 1 L 1 MON 1 RIP 4 SG 6

Coad, Jill
HCP 1 I 1 OG 1

Coad, Jill
GC 10 HCP 1 OG 2

Coca, Chad
TIM 6 WAT 2

Coccier, Brandon
GC 7 GC 10 I 1 L 1

Coddington, Faye
HCP 1 OG 1 RIP 4

Cody, Patricia H.
HCP 1 OG 1

Coe, Clarence S.
GC 10 HCP 1 OG 1

Coellio, Mary C.
GC a GC 10 HCP 1

Coer, Tanya
HCP 1 OG 1 RIP 4

Coffey, Sam
GC a HCP 1 HCP 2 L 1 OG 1 WAT 3WMM 1

Cogswell, Anne
HCP 1 OG 2

Cogswell, Anne Jaquith
HCP 1 OG 1

Cogswell / Karman, John / Felice
GC a GC 10 HCP 1 L 1 OG 1

Cohen, AJ
GC a HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1
WAT 3 WAT 6 WMM 1 WNSO 1

Cohen, Howard
OG 1 RIP 4

Cohen, Norman
GC a GC 10 HCP 1 L 1 **OG** 1

Cohn, Regina
F 1 GC 10 HCP 1 L 1 **OG** 2 SG 1 VEG 1 WAT 1
WAT 3

Cohn, Valentino & Robert
HCP 1 OG 1

Colby, Herbert I.
E 5 TIM 5

Cole, Alexis
OG 1 RIP 4

Cole, Jeff
HCP 1 L 1 RIP 7 WMM 1

Cole, Sandra
HCP 1 L 1 OG 1 RIP 4

Coleman, M.
HCP 1

Coles, Kevin
HCP 1

Coles, Kevin
E 1 GC 7 HCP 1

Collier, Tom & Malou
GC 8 GC 10 HCP 1

Collins, Florence
OG 1 RIP 4

Collins, Kevin
HCP 1 OG 1 RIP 4 WMM 1

Collins, Phillip
OG 1 RIP 4

Collins, Robin L.
HCP 6 P 2

Collins, Tyler
HCP 1 HCP 2 TIM 3

Colta, Lorraine
HCP 1 OG 1

Colwell, Denise
HCP 1 OG 1

Combs, Kim
HCP 1 OG 1 RIP 4

Comini, Dianne
HCP 1 OG 1

Commins, Susan
GC 10 HCP 1

Commins, Suzanne
GC 10 HCP 1

Comnes, Brian & Barbara
HCP 1 OG 1 RIP 4

Compinsky, Dorothy
GC 8 GC 10 HCP 1 L

Conaway, J.
HCP 1 OG 1

Condit, David D.
GC 8 GC 10 HCP 1

Condos, Elaine
HCP 1 OG 1 RIP 1

Cone, Frances M.
GC 8 GC 10 HCP 1

Conger, Jean M.
GC 8 GC 10 HCP 1 L 1 OG 1

Conger, Robert
OG 1 TIM 3

Congleton, Johanna
HCP 1 I 1 OG 2

Conley, Judith
OG 1 RIP 4

Conley, Michael
HCP 1 OG 1 RIP 4

Conley, Michael
HCP 1 OG 1 RIP 4

Conley, Pamela
GC 7 GC 8 HCP 1 HCP 2 L 1 L 2 MC 1 OG 2

Conley, et al., David
HCP 1 OG 2

Connolly, Shannon
HCP 1 OG

Connor, Morgan
GC 10 OG

Connors, Catherine S.
HCP 1 OG 1 RIP 4

Constantine, Sally
GC 7 HCP 1 L 1 MON 1 OG 1 OG 2

Contreras, A. Reynaldo
HCP 1 RIP 4

Contreras, A. Reynaldo
HCP 1

Cook, Alan
L 1

Cook, Dale
HCP 1 OG 1

Cook, James
GC a H C P 1

Cook, Kacy
E 4 GC 4 GC 5 GC 7 HCP 1 HCP 2 I 1 L 1
OG 2

Cook, Kay
GC a GC 10 HCP 2 L 4 WMM 1

Cook, Walter
HCP 1 MON 1 MON 2 RIP 5 SG 1 SG 6 TIM 1 WAT 2
WAT 5

Cook, Walter
F 4 GC 1 GC 5 HCP 2 L 1 SG 1 SG 7 TIM 1
TIM 4 VEG 2 WAT 3 WMM 1 WNSO 1

Cooke, Glen
OG 1 RIP 4

Cooley, Alec
HCP 1

Cooley, Tim
GC a GC 10 HCP 1 L 1 OG 1

Coonen, Noah
HCP 1 TIM 1 WAT 1

Cooper, Chelsea K.S.
H 1 HCP 1

Cooper, Kathleen
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

Cooper, Kathleen
HCP 1 HCP 3 L 1 OG 2 RIP 4 SG 1 WAT 2 WAT 6

Cooper, Kathleen
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 6 WMM 1

Cooper, Liz
HCP 1 L 1 OG 1

Copeland, Eric
HCP 1 OG 1 RIP 4

Coppini, Tim
HCP 6

Copple, N.
HCP 1 HCP 2 I 1 RIP 4 WMM 1

Copple, Nathan
H 4 HCP 1 TIM 1 VEG 2

Corbelli, Carolyn
HCP 1 RIP 4

Corbelli, Carolyn
GC 7 GC 8 HCP 1 I 1 TIM 1

Corbelli, Carolyn
GC 8 HCP 1 L 1 TIM 1

Corbelli, Carolyn
HCP 1 L 1 TIM 1

Corbelli, Carolyn
HCP 1 I 1 L 1 TIM 1

Cordes, John
GC 7 GC 9 HCP 1 HCP 2 L 1 RIP 4 SG 6 TIM 1
WAT 6

Corlay, Alejandro
P 1

Corr, Stephanie
HCP 1 OG 1 RIP 4

Corrigan, Joan M.
HCP 1 OG 1 RIP 4

Corriglia, Kyle

HCP 1 OG 1 RIP 4

Corson, Ingrid
GC 8 HCP 1 HCP 2 L 1 SG 1

Cortez, Martha
HCP 1 P 1

Corwin, Alexandra
HCP 1 I 1

Cosby, Dan
GC 7 GC 10 I 1 L

Cosgrove, Christine
HCP 1 OG 1 RIP 4

Cosgrove, Christine
HCP 1 OG 2 RIP 4

Costello, Elaine
HCP 1 OG 1 RIP 4

Cote, Micheline
GC 8 OG 1 TIM 1

Cottrell, Leonard
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 TIM 1
WAT 3 WNSO 1

Coulter, Ruth
GC 8 GC 10 HCP 1

Court, Melissa
OG 1

Courter, Cathee
GC 8 GC 10 HCP 1 L 1 OG 1

Courtney, Claire
GC 8 HCP 1 OG 1

Courtney, Meg
HCP 1 OG 1

Cousin, Jennifer R.
GC 10 OG 1

Couture, Paul
HCP 1 RIP 7

Coville, Glenn C.
HCP 1 RIP 4

Cowie, Nancy
GC 11

Cox, Jennifer
HCP 1 RIP 4 RIP 5 SG 1

Cox, Lisa
GC 10 HCP 1

Coyne, Colum
E 2 HCP 1 I 1 MON 1 WA 1 WAT 2

Coyne, Colum P.
E 1 E 2 E 4 GC 7 GC 13 HCP 1 HCP 3 MON 2
MON 7 RIP 3 SG 1 WA 1 WAT 2

Coyne, Doyle
HCP 1

Coyne, Doyle
E 4 HCP 1 WA 1

Coyne, Doyle
OG 2 SG 1 TIM 1 WA 1

Coyne, Harriet
E 2 GC 7 HCP 1 OG 2 RIP 4 SG 1 WAT 2

Coyne, Harriet
E 2 HCP 1 RIP 4 SG 1

Coyne, James
GC 7 HCP 1 I 1 L 1 SG 1 TIM 3

Coyne, James
GC 7 HCP 1 L 1 L 2

Coyne, Molly
HCP 1 TIM 1

Coyne, Monica
GC 7 GC 13 HCP 1 I 1 L 1 MON 2 RIP 4 SG 1
SG 3 SG 6 TIM 3 WAT 2

Coyne, Monica
GC 7 GC 13 HCP 1 MON 2 RIP 3 SG 1 SG 3 SG 6

Coyne, Monica A.
GC 7 HCP 1 I 1 RIP 5 SG 1 SG 6

Coyne, Monica A.
GC 7 GC 13 HCP 1 I 1 L 1 RIP 3 SG 1 WAT 2

Crady, David
HCP 1 OG 1

Craig, Scott N.
GC 7 GC 10 I 1 L 1

Cram, Bruce V.
GC 7 GC 10 I 1 L 1

Cramer, Robert R.
HCP 1 HCP 2 L 1 OG 2 RIP 1 RIP 4 RIP 7 SG 1
TIM 1 WAT 2 WAT 3 WAT 6 WMM 1 WNSO 1

Crandall, Gary
GC 8 HCP 1 HCP 4 OG 1

Crandeel, Francoise
E 4 GC 10 HCP 2 HCP 3 L 1 RIP 4 SG 1 TIM 1
TIM 5 WAT 2 WAT 3 WMM 1 WNSO 1

Crawford, James
GC 5 GC 8 HCP 1 L 1 TIM 1 WMM 1 WNSO 1

Crawford, James
HCP 1 I 1 L 1 OG 2 WAT 3 WNSO 1

Creiner, J L
HCP 1 OG 1 RIP 4

Crespo, Maria-Laura
GC 8 HCP 2 L 1 RIP 1 RIP 5 RIP 7 SG 1 SG 6
TIM 1 WAT 3 WMM 1 WMM 2 WNSO 1

Cressman, Gabriele
HCP 1 OG 1 RIP 4

Cribbin, Ruby A.
GC 8 GC 10 HCP 1 L 1 OG 1

Crites, Dan
GC 7 GC 10 I 1 L 1

Crocket, Peter
HCP 1 RIP 4 SG 1 SG 6

Crocket, Peter
GC 7 HCP 1 OG 1

Crolius, Phyllis
GC 8 GC 10 HCP 1 L 1 OG 1

Cronin, Elise A.
HCP 1 OG 1

Cronquista, Gregory & Dawn
E 4 HCP 6 P 2

Crosby, Gail & Pierce
F 1 GC 8 HCP 1 HCP 2 OG 2 RIP 4 SG 3 TIM 1

Cross, Carol
HCP 1 OG 1 P 1

Crowell, Elizabeth
HCP 1 OG 1

Crozier, Matthew
GC 8 HCP 1 HCP 2 L 1 RIP 4 WAT 6

Crum, Don
GC 7 GC 10 I 1 L 1

Crumbaker, Beth
GC 1

Crumbling, Deana M.
HCP 1 RIP 1 RIP 7 WAT 2 WAT 6

Cruz, Marian
GC 8 GC 10 HCP 1 L 1 OG 1

Cuager, Miriam
HCP 1 OG 1 RIP 4

Cucinotta, Robert
HCP 1 OG 1 RIP 4

Cuevas, Michelle
HCP 1 OG 1 RIP 4

Cuilla, Paulette
GC 8 GC 18 HCP 1 L 1 MON 2 OG 1 RIP 3 RIP 4
RIP 7 SG 6 WAT 3 WAT 6

Cuilla, Paulette
GC 8 GC 10 HCP 1 L 1 L 2 OG 1 RIP 1 RIP 2
RIP 5 SG 1 SG 3 SG 6 WAT 3 WAT 5 WAT 6

Cullard, Michael M.
L 1 OG 1 RIP 4

Culp, R.L.
GC 7 GC 10 I 1 L 1

Culver, Catherine
HCP 6

Culver, Patrick
E 4 HCP 1 HCP 3 TIM 1

Culver, Sonja
HCP 1 RIP 7 WAT 2

Cummings, Anne
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

Cummings, Anne
HCP 1 HCP 2 L 1 RIP 4 SG 1 WAT 2 WAT 6 WMM 1

Cummings, Anne
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 6 WMM 1

Cuneo, Gary C.
GC 7 GC 10 I 1 L 1

Cunha, Cathy
HCP 1 OG 1 RIP 4

Cunha-Kemp, Cindy
HCP 1 OG 1

Cunningham, Clint
GC 8 HCP 1 RIP 4

Cunningham, Clint
HCP 1 OG 1 RIP 4

Cunningham, Heidi M.
GC 8 HCP 1 L 1 OG 2

Cunningham, Kevin
HCP 1 L 1 RIP 4 TIM 4

Curiel, Jr., Ramon M.
HCP 1 OG 1 RIP 4

Curley, Linda
HCP 1 OG 1

Curley, Linda
HCP 1

Currant III, Edward C.
HCP 1 OG 1 RIP 4

Curteman, Jackie
E 4 HCP 1 P 2

Curtis, Kelly & Gwynneth
HCP 1 OG 1 RIP 4

Curtis, Preston
GC 7 GC 10 I 1 L 1

Cusik, Callie
E 1 E 4 HCP 1 SG 1 WMM 1 WNSO 1

Custodio, Clark
GC a

Custodio, Cyrene
HCP 1 OG 1

Cutts, Linda Ruth
GC 5 GC a HCP 1 L 1 RIP 4 TIM 1 WAT 3 WMM 1
WNSO 1

Cynamon, Joshua
GC a HCP 1 L 1

D'Angelo, Cynthia
HCP 1 OG 1

DENDY, DAVID
HCP 1 OG 1 RIP 4

Da Costa, Annick
HCP 1 OG 1

DaCosta, Innick
HCP 1 OG 1

Dahl, Ken
HCP 1 OG 1 RIP 4

Dahlem, Laura
HCP 1 HCP 2 L 1 RIP 4 TIM 1 WAT 3 WMM 1 WNSO 1

Dakin, Jon
HCP 1 OG 1 RIP 4

Dakin, Jon
L 1 OG 1

Dakin, Jon
HCP 1 L 1 RIP 4

Dale, Lara
L 1 OG 1 RIP 4 SG 1 SG 6 WMM 1 WNSO 1

Dale, Stephen W.

HCP 6 HCP 7

Dallal, Stanley
HCP 1 OG 1 RIP 4

Dallin, Linda
HCP 1 OG 1 RIP 4

Dalsoren, James
HCP 1

Dalton, Randi
E 3 GC 1 GC 2 GC 3 GC 8 GC 12 GC 13 L 1
L 2 MON 1 OG 1 OG 2 RIP 1 SG 4 TIM 5 TIM 6

Daly, Michael
E 5 HCP 6

Damian, Paul
GC 8 GC 10 HCP 1

Danar, James
GC 7 HCP 1 OG 1

Dancer, Daniel
HCP 1 HCP 2 L 1 OG 1 RIP 5 TIM 1

Daniel, Christopher L.
HCP 1 OG 1 RIP 4

Daniel, Donna L.
HCP 2 HCP 3 L 1 OG 2 SG 6 TIM 3 WAT 3

Dankers, Mieke
I 1 OG 1 TIM 1 WAT 4

Danley, Kimberly
GC 7 HCP 1 HCP 2 OG 1 TIM 3 WAT 3 WMM 1 WNSO 1

Dantzler, Phyllis
GC 10 HCP 1

Darby, Mary Ann
HCP 1 OG 1 RIP 4

Darby, Michael B.
HCP 6

Darson, Walt
GC 2 HCP 1 RIP 1 RIP 4 SG 1

Dashe, Julia
OG 1 RIP 4

Dashe, Julia
HCP 1 OG 1 RIP 4

Dauphin, Traci
GC a HCP 1 HCP 2 L 1 RIP 4 TIM 1 WAT 3WMM 1
WNSO 1

David, Amy
HCP 1 HCP 2

Davidson, Dennis & Gunilla
GC 9

Davie, Dennis P.
HCP 1 L 1 RIP 4 SG 1 SG 6

Davis, Chris J.
HCP 1

Davis, Gregory S.
OG 1 RIP 4

Davis, Melissa
GC a GC 10 HCP 1 L 1 OG 1

Davis, Michael
GC 7 HCP 1

Davis, Michael
GC 10 H 2 HCP 1 RIP 2 RIP 3 RIP 9

Davis, Patrice L.
GC a HCP 2 L 1 RIP 5 SG 1 TIM 1 WAT 3 WAT 6
WMM 1 WNSO 1

Davis, Susan
GC 7 HCP 1 L 1 **OG** 1 OG 2 P 1

Davis, Susan
E 1 F 1 HCP 1 RIP 4 SG 1

Davis, Susan
HCP 1 L 1 **OG** 1

Davis-Dell, et al., Helen
E 4 GC 7 HCP 2 HCP 3 HCP 4 SG 1

Davismont, Elise
HCP 1 OG 1 RIP 4

Davison, Mike
H 3 HCP 1 L 1 OG 1 **OG** 2 RIP 4 SG 1 TIM 1

WAT 2

Davison, Mike
HCP 1 L 1 MON 1 OG 2 RIP 4 SG 1 TIM 1

Dawe, Leslie
HCP 1 OG 1 RIP 4

Dawe, Leslie
HCP 1 OG 2 RIP 4

Dayle, Jacqueline
H 1 H 2 HCP 1 L 1

De Aquino, Manuel
GC 8 HCP 1 HCP 2 OG 1 OG 2 W M M 1

De Aquino, Manuel
GC 7 GC 8 HCP 1 HCP 3 L 1 OG 1 OG 2 P 1
TIM 3 WMM 1

De Jaegher, Veronique
HCP 1 OG 1 RIP 4

De La Cruz, Rosemary
HCP 1 L 1 OG 1

De La Cruz, Rosemary
HCP 4 L 1 OG 1 P 1 TIM 1

De Rooy, Sylvia
E 4 GC 10 HCP 1 TIM 1

De Smidt et al., Gabe
HCP 1 L 1 OG 1 SG 1 WAT 6

DeBardeleben, Diana
HCP 1 OG 1 RIP 4

DeClerk, Fabrice
HCP 1 OG 1 OG 2 P 1

DeCoir, Nora
GC 7 HCP 1 OG 1 OG 2

DeFelice, Maxine
HCP 1 OG 1 RIP 4

DeForest, John
GC 8 GC 10 L 1

DeGier, Karin
HCP 1 OG 1 RIP 4

DeGutes, Susan
HCP 1 OG 1

DeLu, Ardys
E 1 GC 7 HCP 1 OG 1 RIP 4 SG 1

DeMille, April
OG 1

DeMille, April
HCP 1 OG 1

DePaola, Stephanie
HCP 1 L 1 RIP 4 SG 1 WMM 1

DePasquale, Sarah
HCP 1 HCP 4 I 1 OG 2

DePucci, Carolyn
E 5 HCP 6

DeSmidt, Gabriel
HCP 1 OG 1 RIP 4

Dean, Mary Jane
OG 1

Dearing, Jim
GC a GC 10 HCP 1

Dearmon, Michael
HCP 6

Deaton, James
HCP 1 OG 2 RIP 4

Deaton, Lynn Mae
HCP 1 OG 1 RIP 4

Deaton, Lynn Mae
HCP 1 OG 2 RIP 2

Deaton, Mr. James R.
HCP 1 OG 1 RIP 4

Debell, E
HCP 1 OG 1

Decker, Jeanne C.
OG 1 RIP 4

Dehrer, Kathy
HCP 1 OG 1 OG 2 RIP 4

Dehu, Katherine
HCP 1 OG 1 RIP 4

Del Carlo, Phill
HCP 1 OG 1 RIP 4

Del Carlo, Phillip
HCP 1 OG 1 RIP 4

Del Secco, Denise
GC a HCP 1

Delacorte, Erika
GC 7 HCP 1

Delacorte, Erika
HCP 1 I 1 L

Delaney, Josephine
HCP 1 OG 1

Delaney, Josephine A.
HCP 1 OG 1

Delaney, Nancy
F 1 F 2 GC 9 H 2 HCP 1 HCP 2 I 1 L 1
MON 1 OG 2 RIP 1 RIP 4 SG 1 SG 2 SG 3 SG 7
TIM 1 WA 1 WAT 1 WAT 3 WAT 4 WAT 5 WMM 1 WNSO 1

Delgado, Luke
GC 7 GC a HCP 1 HCP 2 RIP 7

Delgado, Luke
E 1 HCP 1 MON 1 RIP 4 RIP 7

Delgado, Sharon
E 1 HCP 1 L 1 RIP 4

Delgago, Sharon
HCP 1 L 1 MON 1 P 1 RIP 4

Deliviche, Richard
GC 7 HCP 1

Delma, Harry
HCP 1 OG 1

Delman, Claudia
HCP 1

Deloach, John
HCP 1 OG 1 RIP 4

Deloach, Patrick
HCP 1 OG 1 RIP 4

Delu, Ardys
GC 7 OG 1 RIP 4 SG 1

Demirezer, Gungor
GC a GC 10 HCP 1

Demoux, Benjamin
GC a HCP 1 L 1

Denbergh, Nick
GC 7 GC 10 I 1 L

Denke, Deborah A.
GC 7 GC 9 OG 1

Denneen, Bill
GC a GC 10 HCP 1 L 1 OG 1

Dennis, Ann
HCP 1 OG 1

Denson, Ed
I 1 L 1 MON 1

Denton, Jill
GC a HCP 1 P 1

Denton, Jim
HCP 1 TIM 1 WAT 3

Depaolis, Giovanni
HCP 1 OG 1 RIP 4

Deridder, Jody
GC a GC 10 HCP 1 L

Derksen, Linda
HCP 1 OG 1

Desai, Rag & Helen
HCP 1

Desena, Rosemary
HCP 1 OG 1 RIP 4

Desil, Phyllis
HCP 1 OG 1

Deutsch, Jeffrey
GC a GC 10 HCP 1 OG 1

Deutsch, Steve
GC 9 HCP 1 L 1 P 1

Deva, Bhaskar
HCP 1 OG 1 RIP 4

Devall, Bill
FACT 1 GC 7 GC 8 HCP 1 L 1 MON 2 OG 1 P 1
RIP 4 WAT 3

Devi, Nischala
HCP 1 OG 1 RIP 4

Devin, Patrick J.
GC 8 GC 10 HCP 1

Dewey, Barbara
GC 7 OG 2

Dewey, Barbara
HCP 1

Di Lorenzo, Sabrina
HCP 1 OG 1 RIP 4

DiGeronimo, Teresa
HCP 1 OG 1 RIP 4

DiNapoli, Andrea
HCP 1 OG 1 RIP 4

DiSeva, Rosemary
HCP 1 OG 1 RIP 4

Diamond, Ms.
HCP 1

Diamond, Sara
GC 7 HCP 1 OG 1

Dick, James
GC 7 GC 10 | 1 L 1

Dickinson, Dale
OG 1

Dickinson, Dale F.
HCP 1

Diebold / Horny, Peggy / Clint
HCP 1 OG 1

Diedrich, Charlotte

GC 8 GC 10 HCP 1

Differding, Denise
HCP 1 SG 1

Dillon, Christine
HCP 1 OG 1 RIP 4

Dimiceli, Robert
E 1 HCP 1 RIP 1 RIP 4 SG 3

Dinger, Marilyn
E 4 GC 8 GC 10 HCP 1 HCP 2 L 1 OG 1 RIP 3
RIP 4 TIM 1 TIM 3 TIM 6 VEG 2 WAT 3 WMM 1 WNSO 1

Dinkin, Jesse
HCP 1 L 1 OG 1 RIP 5 WMM 1 WNSO 1

Dirson, Lindsay
HCP 1 OG 1

Disciasio, Andrea L.
HCP 1 OG 1 RIP 4

Discoe, Ben
HCP 1

Discoe, Ben
HCP 1 RIP 1

Dismore, Dennis B.
E 5 HCP 6

Disney, Katy
HCP 1 OG 1

Diss, Brianna
OG 1

Ditmars et al., Elsa
HCP 1 OG 1 RIP 4

Dixon, David
GC 7 HCP 1 P 1 SG 1

Dixon, Margaret
GC 9 HCP 1 I 1 OG 1

Dixon, Thomas E.
HCP 6

Dixon, Thomas E.
E 5 HCP 6 P 2

Dixon et al., Stan
HCP 6

Doan, Huy
GC 7 GC 10 I 1 L

Dobbins, Peter
GC 8 HCP 1 L 1

Dobbins, Peter Y.
GC 8 HCP 1 L 1

Dobbs, Gloria
GC 8 GC 10 HCP 1 OG 1

Dobosh, Barry
E 5 E 6 HCP 6

Docket-y, Michael
GC 7 GC 8 H 4 HCP 1 HCP 2 HCP 4 L 1 WAT 3
WNSO 1

Dockery, et.al., Sean
GC 5 HCP 1 HCP 2 HCP 4 L 1 TIM 5 TIM 8 WAT 3

Dockter, Bruce
HCP 1 WAT 2

Dodd, Martin
GC 7 HCP 1 SG 6 TIM 3 WAT 2

Doerr, Elizabeth
HCP 1 OG 1 RIP 4

Dole, Ian
HCP 1 OG 1 RIP 4

Dolin, Jean
HCP 1 RIP 4

Dolliver, Pat
HCP 1 OG 1 RIP 4

Dolman, Suzanne B.
GC 8 GC 10 HCP 1 L 1 OG 1

Domanchuk, Paul
HCP 1 L 1 RIP 4

Dominguez, Cindy
HCP 1 OG 1

Dominguez, Cindy

HCP 1

Dominitz, Sidney
GC 8 HCP 1 HCP 2 L 1 RIP 4 TIM 1 WAT 2 WAT 3

Domke, Steve
GC 7 GC 10 I 1 L 1

Donahue, Paul
GC 7 HCP 1 HCP 4 L 1 OG 1 OG 2

Donahue, Paul
GC 7 HCP 1 HCP 4 OG 1 WMM 1

Donald. Alfield Beatrice
H C P 1 OG 1 RIP 4

Donald, Robin M.
HCP 1 L 1 OG 1 TIM 3

Donati, Pete
P 1

Donnelley, James
GC 10 HCP 1 OG 1 RIP 4

Donovan, Dwight C.
HCP 1 OG 1 RIP 4

Donovan, Kimberly Y.
HCP 1 L 1 OG 2 RIP 7 SG 1 WAT 3

Doppelmaur, Kevin
GC 7 GC 10 I 1 L

Dorafest, George
HCP 1

Dorff, Ned
GC 5 GC 8 GC 10 HCP 1

Dorter, Mike
GC 8 GC 10 HCP 1

Dosch, Mary
GC 7 GC 8 HCP 1 I 1 L 1 OG 1 WNSO 1

Dosch, Mary
GC 7 GC 8 HCP 1 I 1

Dossa, Andrea
GC 8 GC 10 HCP 1

Douglas, Chris
GC 8 GC 10 HCP 1

Douglas, Ruthie
GC 8 HCP 1

Douglas, Ruthie
HCP 1

Dowd, Richard
HCP 1 OG 1

Dowd, Richard
HCP 1 OG 2

Dowell, Alisa
HCP 1 L 1 SG 1 SG 6

Dower, Margaret
GC 1 I 1

Doyle, Amy
HCP 1 OG 1 RIP 4

Doyle, David
GC 7 GC 13 I 1 RIP 3 SG 3 WAT 2

Doyle, Duane
E 5 HCP 6

Doyle, Jacqueline C.
H 1 H 2 H 4 L 1

Doyle, Mary
HCP 1 OG 1 RIP 4

Doyle, Susan
HCP 1 OG 1 RIP 4

Doyle, Tom
HCP 1 OG 1

Doyle, Jr., David
GC 7 GC 13 RIP 3 SG 1 SG 3 WAT 2

Dragge, Mr. & Mrs. R.
HCP 1

Dragge, Robin
HCP 1

Drakeisu, Pearl
HCP 1 OG

Drakoulias, Evgenia
GC 8 HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4 SG 3
TIM 1 WAT 6 WMM 1 WNSO 1

Dranella, Marc
HCP 1 RIP 4

Drescher, Jo
HCP 1 OG 1 RIP 4

Dresser, Adam T.
E 1 GC 5 HCP 1 WAT 4

Drill, Rocky
GC 10 HCP 1 HCP 2 I 1 L 1 SG 1 SG 3 SG 6
TIM 1 TIM 2 WAT 1 WAT 3

Drill, Rocky
GC 7 GC 8 GC 10 HCP 2 I 1 TIM 1 WAT 2 WAT 3

Drucker, Julie
HCP 1 OG 1

Drucker-McDeutt, Gerald & Lynda
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Du Frane, Tracey
HCP 1 HCP 3 L 1 L 2 RIP 1

DuBois, Chet
HCP 1 OG 1 RIP 4

DuBois, Marcia
HCP 1 OG 1

DuFrane, Tracey
HCP 1 OG 1 RIP 4

DuFrane, Wyatt
GC 7 GC 10 HCP 1 OG 1 RIP 4 WMM 1

Duba, Lisa
GC 7 HCP 1 OG 1

Dubin-McNeil, Ed.D., Susan
HCP 1 OG 1 RIP 4

Dudley, Anna Carol
OG 1 RIP 4

Dudley, Anne Carol
OG 2 RIP 4

Dudley, Meave
HCP 1 OG 1

Duenas, Jonny
HCP 1 OG 1

Duft, Elizabeth
HCP 1

Duggan, Edward Stryger
HCP 1 OG 1

Duguid, Margaret
HCP 1 OG 2 RIP 4

Duguld, Margaret
HCP 1 OG 1

Dukin, Jon
GC 7 HCP 1 OG 1 RIP 4

Dulas / Freedlund, Mickey / Ali
HCP 1 SG 6

Dullabh, Laurie
GC 7 HCP 1 L 1 SG 7 WAT 2 WAT 3 WMM 3 WNSO 1

Durnont, Dan
GC 8 GC 10 HCP 1

Dumont, Dan
HCP 1

Dunatov, Joseph
GC 7 HCP 1 L 1 TIM 1 TIM 3 VEG 2 WAT 2 WAT 3

Duncan, Alan C.
HCP 1 RIP 4

Dunham, Judith
HCP 1 WMM 1

Dunlap, Andrea
HCP 1 RIP 1 RIP 4 RIP 5 SG 6

Dunnbier, Christopher
HCP 1 L 1 OG 1

Dunnbier, Christopher
GC 8 HCP 1 L 1 OG 2 RIP 4 TIM 1 WMM 1 WNSO 1

Dunnbier, Christopher
E 1 F 1 HCP 1 RIP 4 SG 1

Dunne, Jennifer A.
HCP 1 OG 1 RIP 4

Dunne, Jennifer A.
HCP 1 OG 1 RIP 1 RIP 4

Dunny, Ellen
GC a HCP 2 HCP 3 L 1 OG 2 RIP 4 RIP 5 SG 1
SG 6 TIM 1 TIM 5 WAT 3 WAT 6 WMM 1 WNSO 1

Duran, Theresa
HCP 1 I 1 OG 1 RIP 4

Durheim, Larry
GC 7 GC 10 I 1 L 1

Dushkind, Winifred J.
HCP 1 OG 1

Duval, Helen
HCP 1 OG 1 RIP 4

Duzen, Ken
HCP 1 OG 1

Dwan, Kevin
HCP 1 RIP 4

Dwyer, Molly
F 1 GC a HCP 1 L 1 RIP 4 SG 1 SG 7 TIM 1

Dwyer, Molly
HCP 1

Dwyer, Molly
HCP 1

Dyer, Bert
HCP 2 TIM 1 WMM 1 WNSO 1

Dyer, Dorian
GC a GC 10 HCP 1

Dyer, Dwight
HCP 1 OG 1 RIP 4

E., Jane
GC a GC 10 HCP 1

Eaken, Mrs. Norman

GC a GC 10 HCP 1 L 1 OG 1

Early, Kathleen
HCP 1 P 1

Early, Shane & Kathaleen
L 1 SG 1 TIM 3

Eason-Culver, Parala
GC 1 HCP 1 L 1 P 1

Easton, Paddy
H 2 H 3 HCP 1 I 1 OG 1

Easton, Paddy
H 1 HCP 1 I 1 OG 1 OG 2 TIM 3

Easton, Paddy
H 4 HCP 1 I 1 L 1 OG 1 SG 1 TIM 3

Easton, Paddy
GC 7 H 3 HCP 1 I 1 OG 2 TIM 3

Eaton, Mrs Charles
GC a GC 10 HCP 1

Eberitzsch, Neil
HCP 1 OG 1 RIP 4

Echeverri, Andrea
HCP 1 OG 1 RIP 4

Eckart, Alice Hart
HCP 1 OG 1 RIP 4

Eckart, Charles F.
HCP 1 OG 1 RIP 4

Eckart, Judy
HCP 1 OG 1 RIP 4

Eckart, Judy
HCP 1 OG 1 RIP 4

Eckhardt, Kenneth
HCP 1 OG 1 RIP 4

Eckhardt, Kenneth
GC a OG 1 RIP 4

Eckler, Thomas A.
HCP 1 OG 1

Edelstein, Peter
HCP 1 RIP 4

Edelstein, Peter S.
HCP 1 OG 1 RIP 4

Eden, llse
HCP 1 OG 2 RIP 4

Eden, llse M.
HCP 1 OG 1 RIP 4

Eden, Joyce
HCP 2 L 1 OG 1 WAT 4

Eden, Joyce M.
L 1 OG 1 OG 2

Edgar, Ann M.
GC a GC 10 HCP 1

Edgeverri, Andrea
HCP 1 OG 1 RIP 4

Edler, Adrian T.
HCP 1 OG 1 RIP 4

Edsall, Jane
GC a GC 10 HCP 1

Edwards, AMI
OG 1 RIP 4

Edwards, Bruce
FACT 1 GC 2 GC 7 GC a P 1 WAT 2

Edwards, Diane
GC 1 GC 4 GC 7 GM 1 H 4 HCP 1 HCP 2 I 1
L 1 MON 1 MON 2 OG 1 OG 2 RIP 4 TIM 1 WAT 2

Edwards, Noelle
GC a GC 10 HCP 1 OG 1

Egger, Frank
H 4 RIP 4 TIM 1 TIM 3

Egger, III, George E.
GC a GC 10 HCP 1

Eggleston, Patrick M.
OG 1

Ehni, John

HCP 1 OG 1

Ehni, John
HCP 1 OG 1

Eidinoff, Josephine
HCP 1 OG 1

Eidinoff, Josephine
HCP 1 OG 1

Eigl, Gail
GC 12 HCP 1 OG 1 RIP 4

Eimer, Vincent
GC 8 HCP 1 L 1 RIP 4 WAT 3 WMM 1 WNSO 1

Eisennan, Sarah
GC 7 HCP 1 L 1 OG 2

Eisenscher, Michael
HCP 1 OG 1 RIP 4

Eisler, Katharine L.
GC 9 L 1

Eisner, Alan
HCP 1 OG 1

Ekesa, Ryan
HCP 1 OG 1 RIP 1 RIP 4

Elder, Linda
L 1 TIM 3

Elder, Linda
HCP 2 L 1

Eldredge, Andrew
HCP 1 L 1

Elerweiss, Jillian
GC 7 GC 8 H 2 HCP 1 RIP 4 TIM 3

Elerweiss, Jillian
GC 8 HCP 1 TIM 6

Elerweiss, Jillian
HCP 1 OG 1

Elevaona, Mia
HCP 1 L 1 TIM 5

Elgarico, Katrina
OG 1 RIP 4 WMM 1

Elgin, Brian
HCP 1 OG 1

Elgin, Brian
HCP 1 OG 2

Eliaret, Gian
HCP 1 TIM 6

Elias, Elias
E 3 HCP 1

Elizares, Margaret
GC 10 HCP 1 TIM 5

Elk, Joan
E 4 F 1 GC a H 2 HCP 1 L 1 OG 1 RIP 4
SG 1 SG 6 TIM 1 WMM 1

Ellenberg, Daniel & Judith
GC 10 HCP 1 HCP 3

Elliott, Kathryn Emma
GC 5 GC a HCP 1 L 1 TIM 1 WMM 1

Ellis, Anastasia Rose
HCP 1 OG 1 RIP 4

Ellis, Sabrina
GC 5 HCP 1 L 1 MON 1 OG 1 SG 1

Ellis, Sabrina
GC 15 HCP 1 L 1 MON 1

Ellis III, Charles H.
L 1 OG 1

Ellison, Leslie J.
HCP 1 OG 1 P 1 RIP 4 WMM 1

Ellison, Leslie J.
HCP 1 OG 1 RIP 4 WMM 1

Elmer, Vincent
GC a HCP 2 L 1 WAT 3 WMM 1 WNSO 1

Elsbree, Amelia
HCP 1 OG 1 RIP 4

Ely, Christopher M.

HCP 1 OG 1

Engel, Richard
HCP 1 L 1 RIP 4 RIP 10 TIM 1 WAT 1 WAT 2

Englander, Claire
HCP 1 L 1 OG 1 SG 1

Englesbe, Margaret
I 1 L 1 OG 1

Englesbe, Margaret
HCP 1 L 1 OG 2

English, Andrea
GC 10 HCP 1 OG 1 RIP 1 RIP 4

English, Andrea
HCP 1 RIP 1 SG 1

English, Patricia
HCP 1 OG 2

English, Patricia D.
HCP 1 OG 1

Ennor, Jeff
HCP 1 L 1 OG 2

Enrici, Alan & Katrine
GC a HCP 1 HCP 2 L 1 MC 1 OG 2 TIM 1 WAT 3

Enrici, Alan & Katrine
E 4 GC 2 GC a GC 10 HCP 1 HCP 2 L 1 RIP 4
TIM 1 VEG 2

Enslow, Amy
HCP 1 OG 1 RIP 4

Epp, Walter
HCP 1 HCP 3 OG 2 SG 2 TIM 1 TIM 2 TIM 6 WAT 6

Epperson, James B.
HCP 6

Epperson, Sandra
HCP 1 L 1 OG 1 OG 2 WAT 6

Epsen, B.
OG 1

Erickson, Don
GC 7 GC 10 I 1 L 1

Erickson, Gary L.
GC 7 GC 10 I 1 L 1

Erickson, Karen
HCP 1 OG 1 RIP 4

Erickson, Mandy
HCP 1 OG 1 RIP 4

Erickson, Mandy
HCP 1 OG 2 RIP 4

Erikson, Gerri
HCP 1 OG 1 RIP 4

Espinola, Armanda
HCP 1

Espinola, Larry
HCP 1

Espinoza, Raphael
HCP 1 OG 1 RIP 4

Etchebarne, Marc
HCP 6

Etheridge, Brian Keith
GC 8 GC 10 HCP 1

Evans, John
HCP 1 L 1 OG 1 RIP 4

Evans, John
GC 7 GC 8 HCP 1 OG 1 RIP 4

Evans, Justin
GC 7 GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 3

Evans, Leigh
HCP 1 OG 1 RIP 4

Evans, Robert G.
HCP 1 RIP 4 SG 1

Evens, Jules
HCP 2 L 1 OG 1 RIP 4 TIM 1 WAT 3

Evens, Jules
HCP 1 L 1 RIP 4 TIM 1 WMM 1 WNSO 1

Evenson, Michael
HCP 1 L 2

Evenson, Michael
HCP 1 MON 1

Evenson, Michael
GC 5

Everett, Barry
HCP 1 OG 2 RIP 4 TIM 1

Evers, Richard
GC 5 HCP 1 I 1 L 1 MON 1 OG 1 OG 2 RIP 1
RIP 3 RIP 5 SG 1 SG 6 TIM 1

Everson, Steve
GC 1

Ewing, Lesley
HCP 1 OG 1 RIP 4

Ewing, Lesley
HCP 1 OG 1 RIP 4

Eyer, Catie
OG 1 TIM 1

Fabbre, Richard J.
HCP 1 OG 1 RIP 4

Fabbri, Daniel
OG 1

Fabbri, Pamela
HCP 1 OG 1 RIP 4

Fago, Beryl Gribbon
OG 1

Fahn, Lawrence E.
GC 1 HCP 1 RIP 4 TIM 1 VEG 2 WAT 2 WAT 3 WAT 4

Fahnhout, Glen
HCP 1

Faircloth, Shirley A.
F 1 HCP 1 HCP 5 RIP 1 SG 1 WMM 1

Fairclough, Julie
HCP 1 OG 1

Fairclough, Julie A.
HCP 1 OG 1

Falcon, Christine

GC a GC 12 H 1 H 2 HCP 1 HCP 2 HCP 4 L 1
OG 1 RIP 4 RIP 7 TIM 1 WAT 4 WMM 1

Falcon, Christine
GC 7 GC a H 1 HCP 1 HCP 2 HCP 4 L 1 OG 1
RIP 4 TIM 1 WAT 2

Falcon, Christine
GC 2 GC 5 GC a H 4 HCP 1 HCP 2 L 1 MON 1
OG 1 RIP 4 RIP 5 TIM 1 WAT 4

Falconer, Wendy
HCP 1 L 1 RIP 1 RIP 2 RIP 4 SG 1

Falk, Ruth B.
HCP 1 OG 1 RIP 4

Fallow, David R.
GC a GC 10 HCP 1

Fandrich, Michelle Denise
HCP 1 OG 1 RIP 4

Farey, Gwen
HCP 1 OG 1 RIP 4

Farnes, Jessie
HCP 1 OG 1 TIM 1

Farrell, Christopher
HCP 1 OG 1 RIP 4

Farrelly, Liz
GC 1 OG 1

Farsai, Aryana
FACT 1 I 1 L 1 SG 1 SG 3 WMM 1

Fass-Holmes, Barry
GC a GC 10 HCP 1 OG 1

Fathman, Carrie
GC 7 GC a H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Faulkner, Patsy
HCP 1

Favier, Nancy
HCP 1 OG 1 RIP 4

Fayad, Mary Ellen
HCP 1 OG 1 RIP 4

Fazel, Domineh
GC 10 HCP 1 L 1 OG 1 TIM 3

Feallock, Kay
HCP 1 OG 1 RIP 4

Feigen, Alicia
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Feil / Hesse, Greg / Cottje
HCP 1 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 6 WMM 1

Feinberg, Dana
GC 7 HCP 1 L 1 TIM 1

Feinberg, Dana
HCP 1 L 1 TIM 5

Feingold, Kimberly B.
E 1 HCP 1 RIP 4

Felch, Colleen
GC 9 OG 1

Felciano, Celeste
HCP 1 L 1

Felciano, Celeste
GC 5 GC 7 HCP 1 L

Feller, Fred & Alice
HCP 1 OG 1 RIP 4

Fellion, G R
GC 8 GC 10 HCP 1

Felores, Laura
HCP 1 OG 2 RIP 4

Fenn, Larry
GC 7 GC 10 I 1 L

Fennell, Loren
GC 10 HCP 1

Fenton, Clark
E 4 GC 10 GC 13 H 2 HCP 1 TIM 1

Fenton, Clark

E 1 GC 8 GC 13 HCP 1 HCP 3 RIP 3 SG 6 TIM 1
TIM 8 WA 1

Fergurson, Theodosia H.
HCP 1 RIP 1 RIP 4

Ferguson, Michael
HCP 1 RIP 4 RIP 7 SG 6

Ferguson, Theodosia H.
| 1 L 2 OG 2 RIP 4 SG 6 WAT 4

Fernandez, Janet
HCP 1 OG 1

Fernandez, Paul
HCP 1 OG 1

Fernandez. Paul Anthony
HCP '1 OG 1

Ferrera, David A.
HCP 1 OG 2

Fette, Claudette
HCP 1 RIP 4 RIP 5 SG 6 WAT 6

Fey, June Anna
GC 8 GC 10 HCP 1

Field, James B.
HCP 1 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 3

Fields, Mike
GC 7 GC 10 | 1 L 1

Fikes, Brian
HCP 1 OG 1 RIP 4

Fini, Mike & Peggy
HCP 1 OG 1 RIP 4

Fiore, Mark
GC 8 HCP 1 L 1 OG 1 WAT 6

Fiore, Thomas
GC 4 GC 5 GC 8 HCP 2 HCP 3 L 1 MC 1 OG 2
P 1 RIP 4 SG 3 TIM 1 WAT 3 WAT 5 WMM 1 WNSO 1

Fir, Douglas
HCP 1 WAT 3

Firestein, Philip
GC 8 HCP 1 OG 1

Firestein, Philip
GC 8 OG 1

Fischer, Douglas T.
HCP 1 RIP 4 TIM 1

Fischer, Douglas T.
HCP 1 OG 1 RIP 4 TIM 1 WNSO 1

Fischer, Fred
HCP 1 OG 1 RIP 4

Fischer, Meade
HCP 1 RIP 1 RIP 5 RIP 7 SG 6

Fischer, Meade
GC 8 RIP 4

Fischer, Meade
HCP 1 RIP 1 RIP 4

Fischer, Meade
GC 5 HCP 1 RIP 4

Fiset, Daniel
HCP 1 OG 1

Fish, Erika
OG 1 RIP 4

Fish, Kristin
HCP 1 L 1 OG 1

Fishback, Elizabeth S.
HCP 1 OG 1 RIP 4

Fishburne, Landen
HCP 1 OG 1 RIP 4

Fishburne, Landen
HCP 1 OG 1 RIP 4

Fishell, Leslie
HCP 1 L 1 MON 1 OG 1 TIM 3

Fisher, Neil B.
HCP 1 OG 1 RIP 4

Fisher, Ofra
GC 7 GC a H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3

TIM 5 TIM 7

Fisher, Scott
HCP 1 I 1 L 1 OG 1

Fisher, Tim
HCP 1 OG 1 RIP 4

Fiterfas, Judy
GC 8 GC 10 HCP 1

Fitzgerald, Tanor
GC 8 MC 1 OG 2 WNSO 1

Fitzgerald, Tom
RIP 4 SG 6

Fitzgerald, Tom
GC 7 GC 10 HCP 1 HCP 2 I 1 OG 1 RIP 4 WMM 1

Fitzgerald-Yoon, Paula
E 1 OG 1 OG 2 RIP 4

Fitzmaurice, Anne
GC 8 HCP 1 L 1 OG 1

Flaherty, Sharon
GC 8 HCP 1 OG 1

Fleming, Andrew
HCP 1 L 1

Fleming, Kelly
GC 8 HCP 1 L 1 RIP 4 WAT 3

Fleming, Kelly
GC 8 HCP 1 L 1 RIP 4 SG 6 WAT 3

Fletcher, Mark A.
GC 2 GC 8 HCP 1 L 1 OG 2 RIP 4 WMM 1 WNSO 1

Flett, Mary Anne
HCP 1 RIP 1 SG 1

Flicker, Sarah
HCP 1 HCP 2 RIP 7 TIM 1 WAT 6 WMM 1

Flores, Laura P.
HCP 1 OG 1 RIP 4

Floum, Dane Alexander
HCP 1 L 1 MON 1 TIM 1

Floyd, Larry
HCP 1 OG 1 RIP 4

Fluno, Bradley C.
GC 7 GC 10 I 1 L 1

Flynn, Nick
GC 7 GC 10 I 1 L 1

Flynn-Jambeck, Katie
HCP 1 L 1 OG 2 RIP 4 SG 3 WAT 6 WMM 1 WNSO 1

Fon-Dixon, Karina
GC 8 HCP 1 I 1 L 1 SG 1

Fong, Benton
HCP 1 RIP 4

Fong, Richard
GC 7 HCP 1 HCP 2 HCP 4 L 1 TIM 1

Fontaine, Rhea
GC 8 HCP 1 HCP 4 OG 2 RIP 7

Fontenot, Donald
GC 8 HCP 1

Fontenot, Donald
HCP 1 RIP 7 SG 6 WAT 2 WAT 6

Fontenot, Donald
GC 8 HCP 1 HCP 2 L 1 MON 1 OG 1 OG 2 RIP 4
RIP 7 SG 3 TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Fontenot, Donald
GC 8 HCP 1 HCP 2 L 1 MON 1 OG 2 RIP 1 RIP 4
TIM 1 WAT 3 WMM 1 WNSO 1

Fontenot, Donald
E 1 GC 8 HCP 1 HCP 2 MON 1 OG 1 OG 2 RIP 4
RIP 5 RIP 7 TIM 1 WAT 3 WNSO 1

Fontenot, Donald W.
HCP 1 HCP 2 HCP 3 L 1 MON 1 OG 2 RIP 4 RIP 7
SG 1 TIM 1 TIM 5 WAT 2 WAT 3 WAT 6 WMM 1 WNSO 1

Fontenot, Patrick
HCP 1 OG 1 RIP 4

Fontent, Valerie
HCP 1 OG 1 RIP 4

Force, T. S.
GC 10 L 1 RIP 4 WAT 2

Force, Thomas
HCP 1 I 1 L 1 OG 1

Ford, Betsy
HCP 1 OG 1 RIP 4

Ford, Ken
GC 7 GC 10 I 1 L 1

Ford, Kevin
GC 7 GC 10 I 1 L 1

Ford, Kyle
HCP 1 OG 1 RIP 4

Fornes, Joanne
E 4 GC 7 H 2 HCP 1 I 1 SG 1

Fornes, Joanne
HCP 1 L 1

Fornes, Robert
HCP 1 OG 1

Forrestal, James J.
HCP 1 L 1 OG 1 OG 2 RIP 5 WMM 1

Forrester, Alexa
HCP 1 HCP 3 L 1 OG 1 RIP 4 WAT 3 WMM 1

Forsyth, Cynthia J.
HCP 1

Forsyth, Jon D.
GC 8 HCP 1

Foster, Barbara
OG 1 RIP 4

Foster, Carole
HCP 1 OG 1 RIP 4

Fountain, Jerry
HCP 1 OG 1 RIP 4

Fourman, Jadene
E 4 GC 7 GC 10 HCP 1 HCP 2 OG 1 RIP 4 VEG 2
WMM 1 WNSO 1

Fourman, Jadene

GC 10 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1
TIM 3 WMM 1

Fowler, Fieldsa
GC 7 HCP 1 L 1

Fox, Doug
GC 7 GC 10 I 1 L

Fox, Judi
GC 8 HCP 1 L 1

Fox, Judy
GC 8 HCP 1 L 1 OG 2

Fox, Kenneth J.
F 1 GC 8 HCP 1 L 1 RIP 4 SG 1 TIM 1 WAT 4

Fracker, Sharon
HCP 1

Fracker, Sharon L.
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Franco, Fernando S.
HCP 1 OG 1 RIP 4

Frank, Mia
H 4 HCP 1 L 1 OG 1

Frank et al., Mia
HCP 1 L 1 TIM 5

Franke, Michael
GC 8 HCP 1 OG 2

Franke, Michael
HCP 1 HCP 5 OG 1 TIM 1

Frankel, Alex
HCP 1 RIP 4

Frankel, David
GC 8 H 2 HCP 1 HCP 2 HCP 4 L 1 MON 1 MON 2
MON 5 SG 1 VEG 2 WAT 6 WNSO 1

Franks, Kastan
HCP 1 OG 1

Frantz, PhD, Eve C.
OG 1

Fraser, Margaret
HCP 1 L 1

Fraser, Tyce & Kathy
GC 7 H 4 HCP 1 L 1 SG 1 TIM 1

Frasier, Jennifer
HCP 1 OG 1

Fratlein, Maggie
HCP 1 OG 1

Fredrickson, Lana
GC 7 H 1 HCP 1 L 1 OG 1 OG 2 TIM 1

Fredrickson, Stacy
OG 2 RIP 4

Freedenbuger, Jeanette
HCP 1 OG 1

Freedlund, et al., Ali
HCP 1

Freedman, Richard & Theresa
GC 8 HCP 1 RIP 4 WAT 2 WAT 6

Freedman, Richard & Theresa
GC 8 RIP 4 RIP 5 RIP 7 SG 1

Freedman, Richard I. & Theresa
GC 8 L 2 RIP 4 SG 1 WAT 6

Freedman, Richard I. & Theresa
HCP 1 L 2 RIP 5 SG 1 TIM 8

Freeman, Glen
GC 8 GC 10 HCP 1 L 1 OG 1

Freeman, Linda G.
OG 1 RIP 4

Freeman, M.
HCP 1 OG 1

Freewoman, Faith
E 1 E 4 E 5 GC 5 GC 7 H 2 HCP 1 HCP 3
HCP 4 L 1 P 1 RIP 4 TIM 1

Freewoman, Faith
E 1 E 4 GC 7 H 4 HCP 1 HCP 4 OG 1 RIP 3
TIM 1 WAT 2

Freifeld, Douglas
HCP 1 OG 1 RIP 4

Freifeld, Margaret F.
HCP 1 OG 1 RIP 4

Freind, Marguerite
HCP 1 L 1 OG 1 TIM 1

Freis / Leis, Luke / Amber
GC 10 HCP 1 HCP 2 L 1 SG 1 TIM 1 VEG 2 WMM 1
WNSO 1

Frels, Luke
E 4 GC 7 GC 8 GC 10 HCP 1 HCP 2 L 1 L 2
RIP 4 TIM 1 WMM 1 WNSO 1

Frentado, Jason
HCP 1 OG 1 RIP 4 SG 1

Frew, Suzanne
HCP 1 OG 1 RIP 4

Frey, Holly
HCP 1 OG 1

Frey, Holly
HCP 1 OG 1

Frey, Matthew
HCP 1 RIP 5 SG 6 WAT 5

Freyer, Arthur
HCP 1 WAT 3

Freyer, Arthur
HCP 1 L 1 OG 1 OG 2

Freyer, Arthur
L 1 OG 2 RIP 4

Friedman, Cary
GC 2 GC 8 P 1 RIP 4 SG 1 SG 6

Friedrichson, Joni L.
HCP 1 OG 1 RIP 4

Friend, Johanna
GC 8 HCP 1

Friman, Linda G.
OG 1 RIP 4

Frink, John
HCP 6

Frokling, Chris
GC 7 HCP 1 L 1 MON 1 TIM 1

Frontz, Jeff ri
HCP 1

Frugoni, et al., Corinne
GC 5 GC 8 HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4
TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Fry, Qris
HCP 1 OG 1 RIP 4

Frye, Jessica
HCP 1

Fuchs, B
GC 8 P 1 TIM 1

Fuentes, Charles
E 5 HCP 6

Fuerth, Carol
OG 1 RIP 4

Fugate, Deborah
HCP 1 OG 1 RIP 4

Fuller, Brock & Alison
GC 8 GC 10 HCP 1

Fuller, David
GC 7 HCP 1 L 1 OG 2

Funk, Ilse
HCP 1 OG 1

Funk, Wayne D.
GC 7 GC 10 | 1 L 1

Furows, Tammy
HCP 1 OG 1 RIP 4

Furtado, David
HCP 1 OG 1 RIP 4

Futchen, Liz
GC 8 GC 10 HCP 1 OG 1

Gabel, Magarie

HCP 1

Gabriel, Blake & Lori
HCP 1 OG 1 RIP 4

Gabriel, Michael
HCP 1 OG 2

Gage, Ben
GC 7 GC 9 OG 1

Gage, Ben
GC 7 GC 9 OG 1

Gagne, Cynthia
GC 7 HCP 2 L 1 P

Gagne, Cynthia
HCP 1 HCP 2 L 1

Gagne, Laran
GC 8 HCP 1 L 1

Gagne, Laran
GC 7 GC 8 HCP 1

Gaines, Craig
HCP 1 OG 1

Gainok, Danielle
A 1 GC 8 HCP 1 HCP 2 L 1 OG 2 TIM 1 WAT 3

Gale, Barak
F 4 GC 8 HCP 3 W M M 1

Gale, Jennifer
HCP 1 OG 1

Gallagher, Kate
HCP 1 OG 1

Gallagher, Kate
HCP 1 P 1 RIP 4

Gallaher, Tim
GC 5 HCP 1 L 1 MON 2 OG 1 OG 2 SG 1

Gallant, Katie
GC 10 HCP 1 OG 1

Gallardo, Deborah
HCP 1 OG 1 RIP 4

Galles, Carma
OG 2

Galli, William
GC a GC 10 HCP 1

Gallo, Jen
HCP 1 OG 1

Galloway, John
HCP 1 OG 2 RIP 5 WMM 1

Galvin, III, John T.
E 5 HCP 6

Galvin, III, John T.
HCP 6

Gambonini, Marilyn
OG 1 RIP 4

Gamborini, Marilyn
HCP 1 OG 1

Ganell, Nancy
OG 1 RIP 4

Gangly, Laura
HCP 1

Gannon, Patricia M.
HCP 1 HCP 5 WAT 2

Gans, Donna Rebecca
L 1 OG 1 OG 2 TIM 1

Gant, Margaret Ann
HCP 1 OG 1 RIP 4

Gant, Tracey Michele
HCP 1 OG 1 RIP 4 WAT 2

Garber, John
OG 1

Garber, Ken & Sandra
GC a GC 10 HCP 1 L 1 WAT 2

Garcia, Eugene
HCP 1 L 1 OG 1

Garcia, Laura G.
HCP 1 OG 1

Gardi, Elizabeth
HCP 1 OG 1 RIP 4

Gardner, Kathrine
HCP 1 OG 1

Garland, Margaret
HCP 1 OG 1 RIP 4

Garret, George
TIM 4

Garrison, Susan
HCP 1 OG 1

Garrone, Max
HCP 1 RIP 4

Garwin, Lawrence
E 4 P 1 TIM 1

Gasca, Gary
HCP 1

Gasca, Gary
HCP 1 OG 1

Gaskin, John E.
HCP 6

Gaskin, John E.
HCP 6

Gassel, Margy
GC a HCP 1 L 1 OG 2 RIP 4 SG 3 TIM 1 WAT 3
WMM 1 WNSO 1

Gassel, Margy
GC a HCP 1 HCP 2 L 1 OG 1 OG 2 RIP 3 RIP 4
TIM 1 WAT 3 WNSO 1

Gauailhards, Bonnie
HCP 1 OG 1

Gault, Jeffrey
HCP 1 OG 1 RIP 4

Gawboy, Stephanie
HCP 1 L 1

Gawboy, Stephanie
HCP 1 HCP 2 L 1

Gaydos, Susan
A 1 H 2 HCP 1 L 1 TIM 3 TIM 5

Gaydos, Susan
A 1 H 1 HCP 1 L 1 RIP 4 TIM 3

Gaylin, Harvey
HCP 1 OG 1 RIP 4

Gearhart, Maryl
HCP 1 OG 1 RIP 4

Gee, Victor
HCP 1 OG 1 RIP 4

Gehb, Michael
HCP 1 OG 1 RIP 4

Gehb, Michael
HCP 1 OG 1 RIP 4

Gehlert & Family, R.
GC 10 OG 1

Geiser, Christine R.
GC 8 HCP 2 OG 1 OG 2

Gelardini, Graziella
GC 8 GC 10 HCP 1 L 1 OG 1

Gendron, Linda K.
HCP 1 OG 1

Gendron, Robert
HCP 1 OG 1

Gendron, Jr., Robert W.
HCP 1 OG 1

Genolia, Tom
HCP 1

Genolio, Thomas
HCP 1

Genolio, Thomas
HCP 1

Gentry, Genesse
HCP 1 OG 1 RIP 4

Gentry, Genesse
GC 8 OG 1 RIP 4

Gentry, William A.
HCP 1 OG 1 RIP 4

Geoffrey, W.J.
HCP 1 OG 1

Geogheza,
HCP 1 OG 2 RIP 4 TIM 1

George, Michael & Sue
GC 8 GC 10 HCP 1

George, Rita 0.
HCP 1 OG 1 RIP 4

Geppert, Joelle
E 4 F 1 GC 2 GC 7 H 2 HCP 1 HCP 2 I 1
L 1 OG 1 TIM 1 TIM 3

Geppert, Joelle
E 4 GC 8 GC 14 HCP 1 HCP 2 L 1 OG 2 RIP 4
SG 1 SG 3 TIM 1 WA 1 WAT 3 WMM 1 WNSO 1

Geppert, Joelle
GC 1 GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3
TIM 1 WNSO 1

Gerard, Jennifer
HCP 1

Gerian, Ellen
HCP 1 OG 1

Gerson, Stephanie
HCP 1

Gerson, Stephanie
GC 8 HCP 1 I 1 L 1

Gerson, Stephanie
HCP 1 I 1 OG 1

Gerwin, Mary H.
GC 8 GC 10 HCP 1

Geyer, Eric K.
HCP 1 OG 1 RIP 4

Geyer, Eric K.
HCP 1 OG 2 RIP 4

Ghammachi, Viviane
OG 1

Ghandi, Elham
GC 8 HCP 1 L 1 OG 2 SG 6 WMM 1

Ghandi, Elham
E 1 GC 5 GC 8 HCP 1 L 1 OG 2 SG 1

Ghofranian, Ricki
HCP 1 OG 1

Ghofranian, Riki
HCP 1 OG 1

Gibbons, Richard
OG 1

Gibson, Archibald
HCP 1 OG 1 RIP 4

Gidding, Andy
HCP 1 OG 1

Gienger, Richard
E 3 GC 8 HCP 1 MON 1 MON 2 WAT 3

Gienger, Richard
HCP 1 MON 2

Giese, Mark M.
GC 8 RIP 1 RIP 5 RIP 7 SG 6

Giese, Mark M.
GC 8 GC 10 HCP 1

Gifford, Ann Hamilton
HCP 1

Gilbert, Chris
OG 1 RIP 4

Gilbert, Colleen M
HCP 1 OG 1

Gilberti, Kristin
OG 1 RIP 4

Gilda, Rebecca
GC 7

Gilda, Rebecca
GC 7 HCP 1

Gildersleeve, Grace
HCP 1 OG 1 RIP 4

Gildersleeve, Greg
HCP 1 OG 2 RIP 4

Gilkerson, Dean
GC 5 HCP 1

Gilkerson, Dean
GC 5 HCP 1

Gille, Daphne
GC 10 HCP 1 OG 1

Gillen, Andrew
HCP 1 OG 2 RIP 4 TIM 1

Gillen, Milissa
HCP 1 HCP 3

Gillette, Randall
HCP 1 OG 1 RIP 4

Gilliam, Debbi
OG 1

Gillmor, Stewart
HCP 1 P 1

Gills, Sarah
GC 8 HCP 1 HCP 2 HCP 3 RIP 4 TIM 1 WAT 5 WMM 1

Gilmore, Janet
HCP 1 OG 1

Gingery, J. Katherine
HCP 1 OG 1

Giordano, Annette
GC 8 GC 10 HCP 1

Giordano, Dave
HCP 1 L 1 OG 1 RIP 1 RIP 4 WMM 1

Giraud, Tony
E 5 HCP 6

Girdlestone, Harvard
OG 1

Girven, Janice A.
HCP 1 OG 1 RIP 4

Gizinski, Valerie
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 1 RIP 2 RIP 3
RIP 4 SG 3 WAT 4 WMM 1 WNSO 1

Gizinski / Carr, Valerie / Patrick
E 4 H 4 HCP 1 TIM 1 VEG 2

Gizinski / Carr, Valerie / Patrick
HCP 1 HCP 2 L 1 RIP 4 SG 3 WAT 4 WMM 1 WNSO 1

Gizinski / Carr, Valerie / Patrick
E 4 H 2 HCP 1 TIM 1 VEG 2

Glanville, Diana
HCP 1 OG 1 RIP 4

Glaser, Adam
E 5 HCP 6

Glasgow, Bonnie
GC 8 GC 10 HCP 1 L 1 OG 1

Glass, Ruth
GC 8 GC 10 HCP 1

Gleason, Ellen
HCP 1 HCP 2 L 1 RIP 4

Gleason, Ellen
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Glenn, Don
GC 7

Glenton, Mark
GC 8 HCP 1 HCP 2 L 1 RIP 4 TIM 1 WAT 3 WMM 1
WNSO 1

Glenton, Mark
GC 8 HCP 1 HCP 2 L 1 RIP 4 TIM 1 WAT 3 WMM 1
WNSO 1

Glick, Andrea
HCP 1

Glick, Hal
GC 7 GC 8 H 1 P 1 RIP 4 TIM 3

Glober, David
E 1 HCP 1 RIP

Glober, David
E 1 E 4 HCP 1 RIP 1 RIP 4

Glover, Meda Jo
GC 8 GC 10 HCP 1

Glover, Sue
GC 9 OG 1

Glover, Terry
E 1 HCP 1 MON 1 RIP 4

Glover, Terry
E 1 HCP 1 L 1 MON 1 RIP 4

Gluck, Ronite
E 4 GC 8 HCP 1 L 1

Gluckstern, Henry
GC 8 GC 10 HCP 1 OG 1 RIP 4

Gobius, Andre
HCP 1 OG 1 RIP 4

Godwin, L.N.R.
HCP 1 OG 1 RIP 4

Goebl, Erin
HCP 1 OG 1 RIP 4

Goerler, Ellen
GC 8 GC 10 HCP 1

Goetz, Linda
HCP 1 OG 1 RIP 4

Gogas, Jill
HCP 1 OG 2 RIP 4

Gohl, Carol
HCP 1 OG 1 RIP 4

Goitein, Ernest
GC 5 HCP 1 SG 1 WAT 6

Goitein, Ernest
RIP 1

Goitein, Ernest
HCP 1 MON 1 RIP 4

Golata, Debra
OG 1

Golban, Yasaman
E 1 GC a HCP 1 OG 1 OG 2 RIP 7 SG 1 SG 6
WNSO 1

Goldberger, Jeffery
HCP 1 OG 1 RIP 4

Goldberger, Jeffrey
HCP 1 OG 1 RIP 4

Golden, Alison
GC 10 HCP 1 HCP 2

Golden, Alison
GC 10 HCP 2

Golden, Alison
GC a GC 10 HCP 1 HCP 2

Golden, Michael
F 1 HCP 1 L 1 RIP 4 SG 1 WAT 1 WAT 4

Goldenberg, Michael
HCP 1 L 1 RIP 4 WAT 2

Goldman, Ann
OG 1 RIP 4

Goldstein, Malcolm
L 2 OG 1 TIM 3

Goltz, Sara
OG 1

Gomez, Mario
HCP 1

Gomez, Mario
HCP 1

Gonzales, Gilda
HCP 1 OG 2

Gonzales, Manuel
GC 7 GC 10 | 1 L

Gonzalez, David
RIP 4

Goode, Allison
HCP 1 OG 1 RIP 4

Goodfriend, Daniel

GC 2 HCP 1 HCP 2 L 1 OG 1 WMM 1 WNSO 1

Goodhart, Erica
GC 7 I 1 OG 1

Goodman, Dolores L.
HCP 1 L 1 OG 1

Goodman, Linda
GC a GC 10 HCP 1 L 1 OG 1

Goodson, Gar
GC 10 HCP 1 WMM 1

Goodwin, Stephen
GC 7 GC 10 I 1 L 1

Gordon, Mike
HCP 1 HCP 2 L 1 RIP 4 TIM 1 VEG 2 WAT 3

Gordon, Paulo
HCP 1 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 6 WMM 1

Gordon, Stephen
HCP 1 OG 1 RIP 4

Gordova, L.
HCP 1 OG 1

Gorringe, Richard
GC 7 GC a GC 10 HCP 1

Goselin, Tom
HCP 1 OG 1 WAT 2 WAT 6

Goselin, Tom
HCP 1 RIP 4

Gosham, David
HCP 1 OG 1 RIP 4

Gottlieb, David
GC 7 GC a HCP 1 L 1 OG 1

Gottlieb, David
GC 7 HCP 1 L 1 OG 1

Gouailardou, Bonnie
HCP 1 RIP 4

Gould, Marybeth
GC 10 HCP 1 HCP 2 OG 2 RIP 4 TIM 1 WAT 3

Goyas, Joe
HCP 1 OG 1 RIP 4

Goyer, Marcy
HCP 1 OG 1 RIP 4

Grace, Gretchen
HCP 1 OG 1 RIP 4

Gracey, Gloria
HCP 1 OG 1

Gracey, Gloria
HCP 1 I 1 OG 1

Graef, C. Michael
E 1 HCP 1 L 1 MON 1 RIP 4

Graef, C. Michael
E 1 HCP 1 L 1 MON 1 RIP 4

Graeff, Jennifer
F 1 HCP 1 HCP 4 OG 2 RIP 1 RIP 4 SG 1 SG 3
SG 6 TIM 1 WAT 3 WMM 1 WNSO 1

Graf, Michael
GC 7 HCP 1

Graham, Cynthia
HCP 1 OG 1 RIP 4

Graham, Heather
HCP 1 L 1 SG 1

Graham, Russell
GC 7 OG 1

Granderson, Lisa L.
HCP 2 RIP 4 TIM 1

Granderson, Lisa L.
E 1 HCP 1 RIP 4

Grant, Charles W.
HCP 1 OG 1 RIP 4

Graubard / Muro, Moses / Kenji & Kai
GC 8 GC 10 HCP 1

Graves, Caryn
GC 8 GC 10 HCP 1

Graves, Stan

E 4 H 4 HCP 1 HCP 3 I 1 OG 1 RIP 4 SG 1
TIM 5

Graves, Stan
E 3 GC a H 1 HCP 1 OG 1 RIP 4 SG 1 TIM 3

Graves, Stan P.
E 3 GC a H 1 HCP 1 OG 1 RIP 4 SG 1 TIM 3
TIM a

Graves, Steve
H 2 H 4 HCP 1 HCP 2 I 1 L 1 OG 2 RIP 3
RIP 4 SG 1 SG 2 TIM 1 TIM 3 WAT 3 WAT 5 WMM 1

Graves, Steve
E 1 GC a GC 13 H 2 H 3 HCP 1 I 1 L 1
OG 1 RIP 3 RIP 4 RIP 6 SG 1 SG 3 TIM 1 TIM 5
WAT 2 WAT 4 WAT 5

Graves, Steve
GC 2 GC a H 2 HCP 1 HCP 2 L 1 OG 1 OG 2
RIP 4 RIP 5 SG 1 SG 2 SG 6 TIM 3 WAT 1 WAT 3
WAT 5

Gravrock, Kari
HCP 1 OG 1 RIP 4

Gray, David
HCP 1 I 1

Gray, Savannah
H 1 HCP 2 SG 1 TIM 1 WAT 2

Gray, Shirley
GC a H C P 2 OG 1

Green, Bill
HCP 1 RIP 4 RIP 7 SG 6 WAT 6

Green, Bill
HCP 1 RIP 4

Green, Dewey R.
HCP 1 OG 1

Green, Dewey R.
HCP 1

Green, Jessica

HCP 1 OG 1

Green, Leann
GC 8 HCP 1 HCP 2 L 1 OG 1 OG 2 RIP 4 SG 3
TIM 1 WAT 3 WAT 6 WNSO 1

Green, Mark
OG 1 RIP 4

Green, Michael E.
E 5 HCP 6

Green, Nancy
HCP 1 RIP 4

Green, Nancy
HCP 1 RIP 4

Green, Susan
E 4 HCP 1 L 1 OG 2

Green, Syd & Barb
E 5 HCP 6

Greenbaum, A.S.
HCP 1 TIM 1 WAT 3

Greenberg, Helaine
GC 8 GC 10 HCP 1 L 1 OG 1

Greenberg, Janice
HCP 1 L 1

Greene, Issac
HCP 1 OG 1 RIP 4

Greene, Issac
GC 8 OG 1 RIP 4

Greene, James W & Olive
HCP 1 OG 1 RIP 4

Greene, Jessie
HCP 1 OG 2 RIP 4

Greenhut, Marcy
F 1 HCP 1 HCP 2 I 1 L 1 TIM 1

Greenleaf, Anna
GC 5 HCP 1 HCP 2 OG 1 RIP 5 SG 1 SG 6 TIM 1
TIM 3 WAT 2 WAT 3 WMM 1 WNSO 1

Greenne, Kelly
HCP 1 RIP 4 RIP 5

Greenstein, Jennifer
HCP 1 OG 1 RIP 4

Greenstein, Ken
HCP 1 HCP 2 L 1 OG 2 RIP 4 RIP 5 WAT 3 WAT 6
WMM 1 WNSO 1

Greenwood, et al., Sadja
HCP 1 L 1

Greer, Julie
HCP 1 P 1

Gregori, Teamo
GC 7 L 1 WAT 2

Gregory, Raina
HCP 1 OG 1

Gregory, Stan
GC 10 HCP 1 I 1

Grellman, Mike & Stacer
HCP 1 OG 1 RIP 4

Grellman, Mike & Stacey
HCP 1 OG 1 RIP 4

Greve, James
H 4 HCP 1 L 1 OG 2 RIP 4 SG 1 TIM 3

Greve, James
H 4 HCP 1 L 1 OG 2 RIP 4 SG 1 SG 6 TIM 3

Greve, James
HCP 1 RIP 1 RIP 4 SG 3

G reve, James
HCP 1 RIP 4

Greyson, Sam
GC 8 HCP 1 I 1 RIP 4

Greyson, Sam
HCP 1 RIP 4

Griego, Francisco
HCP 1 RIP 4

Griffin, Virginia

HCP 1 OG 1

Griffith, C. Vern
HCP 1

Griffith, Dian E.
GC 7 GC 9 HCP 1 I 1 L 1 L 2 OG 1

Griffith, J
GC 5 H 2 HCP 1 L 1 OG 1 OG 2 RIP 4

Griffith, Tami
GC 5 GC 8 HCP 2 HCP 3 L 1 OG 2 RIP 4 RIP 7
RIP 10 SG 1 SG 6 TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Grigsby, Gary
GC 10 HCP 1

Grimm, Eric
HCP 1

Gritfish,
HCP 1 OG 1

Grombacher, Kiley
HCP 1 L 1 OG 1

Groone, Jessie
HCP 1 OG 1 RIP 4

Groover, Anna
A 1 HCP 1 OG 1

Groover, Anna
A 1 HCP 1

Gross, Eric
GC 5 L 1 OG 1 RIP 1

Gross, Ray
HCP 1 OG 1 RIP 4

Gross, Ray
HCP 1 L 1

Gross, Raymard
GC 7 HCP 1 OG 1 RIP 4

Gross, Shelby
HCP 1 OG 1 RIP 4

Gross, Shelby
HCP 1 OG 2 RIP 4

Grossberger, Alan
GC 8 HCP 1 L 1 OG 1

Grotty, Michael
HCP 1 OG 1 RIP 4

Grover, Chris
HCP 1 OG 1 RIP 4

Grubb, Susan
HCP 1 OG 1 RIP 4

Gruen, Michelle
HCP 1 L 1 OG 1 RIP 4

Gruenwald, Mrs. Jarvis
HCP 1 OG 2 TIM 1

Grugel, John
GC 8 GC 10 HCP 1

Gruzalski, Bart
HCP 2

Gruzalski, Bart
HCP 1 HCP 2 TIM 6

Gruzalski, et al, Marion
GC 8 HCP 1 L 1 TIM 1

Guardia, Philip
HCP 6

Guerriero, Michael
HCP 1

Guichod, Christine
HCP 1 OG 1

Gunderson, Ken
HCP 1 OG 1

Gundlach, Gary
HCP 6

Gundling, Henry E.
GC 5 HCP 1

Gunha, Rose Marie
HCP 1 OG 1 RIP 4

Gunnell, Bob
GC 7 HCP 1 HCP 2 I 1 L 1 OG 2 RIP 4 SG 3

Gunnell, Bob
HCP 1 HCP 3 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 2
WAT 6 WMM 1

Gunnell, Bob
HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 6 WMM 1

Gurin, Suzanne N.
GC 8 H 2 HCP 1

Gurin, Suzanne N.
H 4 HCP 1 WAT 3

Guttsey, Danos
HCP 1 OG 1 RIP 4

Gussleo, Beverly
HCP 1 I 1 OG 1 TIM 3

Guthram, Lieling
HCP 1 L 1 OG 1

Gyenis, Attila
GC 10 HCP 1 HCP 2 L 1 WAT 5

Haagen-Smit, Cathy
HCP 1 OG 1 OG 2

Haapanan, Liz
HCP 1 OG 1

Haapanen, Liz
GC 7 HCP 1 I 1 OG 1

Haas, Sheila
GC 7 HCP 1 L 1

Haase, George
GC 7 GC 10 I 1 L 1

Haber, Jim
GC 7 HCP 2 L 1 OG 2 TIM 3

Haber, Jim
GC 7 HCP 1 HCP 2 L 1 OG 1

Hacker, Hilary
HCP 1 OG 2 TIM 1

Haesger, Lucee
HCP 1 OG 1

Hagar, Marilyn

E 4 H 2 H 4 HCP 1 L 1 RIP 1 RIP 4 TIM 1

WMM 1

Hagemann, David & Susan
HCP 1 MON 1 SG 8 TIM 1

Hagerman, Daniel L.
GC 7 GC 10 I 1 L 1

Hagler, Arlo
GC 7 GC 8 L 1 P 1

Hagler, Arlo
GC 8 HCP 1 L 1 SG 1

Hagmann, Keala
HCP 1 OG 1 RIP 4

Hahn, Kenneth
OG 1 RIP 4

Haines, Shauna
HCP 1 HCP 5 RIP 1 SG 1

Hale, Tiff aney
E 1 RIP 1 WAT 5

Halfar, Jochen
HCP 1 OG 1 RIP 4

Hall, Gene
HCP 1

Hall, James
GC 7 GC 10 I 1 L

Hall, John M.
E 5 HCP 6

Hall, Judi
HCP 1 OG 1

Hall, Mike
GC 8 L 1 OG 2 TIM 5 WAT 3

Hall, Rebecca
HCP 1 L 1 RIP 4 SG 1 SG 3

Haller, Heidi
L 1

Halliday, Michael J.
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 SG 6 TIM 1

WAT 3 WNSO 1

Hallinan, Camilla
HCP 1 HCP 2 L 2 RIP 4

Hallinan, Camilla
E 1 GC 8 GC 15 HCP 1 HCP 2 L 1 RIP 4

Hallsted, David & Susan
OG 1 RIP 4

Halverson, Lydia
GC 8 GC 10 HCP 1

Hamilton, Anna
GC 7 HCP 1 HCP 2 I 1 RIP 3 TIM 3

Hamilton, David W.
HCP 1 RIP 1 WAT 2 WMM 1

Hamilton, Elizabeth
HCP 1 L 1 L 2 SG 1 TIM 1 TIM 5 WAT 2

Hamilton, Elizabeth
HCP 1 L 1 L 2 RIP 4 TIM 5 WAT 2

Hamilton, Michael S.
GC 8 GC 10 HCP 1 L 1 WAT 6

Hamilton, Russell S.
HCP 1 L 1 RIP 1

Hamlin, Carole B.
HCP 1 I 1

Hamlin, Lawrence J.
HCP 1 OG 1

Hamlin, Lawrence J.
HCP 1 OG 1 TIM 1

Hammann, George
HCP 6

Hammer, Melissa R.
HCP 1 OG 1

Hammerquist, Joe
HCP 1 OG 1 TIM 5

Hamner, William H.
HCP 1 RIP 1 RIP 2 RIP 4

Hampton, Sharon
HCP 1 OG 2 RIP 4

Hampton, Sharon M.
HCP 1 OG 1 RIP 4

Hampy, Calvin
RIP 4

Hamrick, Scott
HCP 1 OG 1

Hanan, Jennifer S.
HCP 1 L 1 TIM 5

Hanan, Jennifer S.
E 4 HCP 1 TIM 1

Hanley, Donna
GC 7 GC 10 I 1 L

Hannon,
GC 8 L 1 OG 1

Hanrahan, Liam
HCP 1 I 1 OG 1

Hansen,
HCP 1 OG 1 RIP 4

Hansen, Barbara K.
HCP 1 OG 1 OG 2 P 1

Hansen, Barbara K.
HCP 1 OG 1

Hansen, Chris
HCP 1 OG 1 RIP 4

Hansen, Gladys
F 1 GC 8 L 1 RIP 4 SG 1 SG 7 TIM 1

Hanson, Edward H.
HCP 1 OG 1

Hanson, Larry
HCP 1 HCP 2 L 1 MON 1 RIP 4 TIM 1 TIM 3

Hanson, Larry J.
HCP 1 L 1 MON 1 RIP 4 TIM 1 TIM 4

Hanson, Melanie
GC 8 HCP 1 L 1

Hanson, Robyn
HCP 1 OG 1 RIP 4

Hanson, Steve
GC 7 GC 10 I 1 L 1

Hanson, William & Joan
E 4 HCP 1 OG 1 TIM 1

Hanson, William & Joan
E 4 HCP 1 L 1 OG 1 OG 2

Hardesty, Mullaney
HCP 1

Hardgrave, Philip
GC 7 HCP 1 OG 1

Harding, Ashley
E 2 OG 1 RIP 4

Hardy, Pat
HCP 6

Hare, Van C.
HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4 TIM 1 WAT 3
WAT 6 WMM 1 WNSO 1

Harlowe, Anna
GC 7 HCP 1 L 1

Harmon, Deborah L.
HCP 1

Harold, et al., Gary
GC 1

Harp, Gabriel
L 1 OG 1 OG 2

Harper, Charles A.
GC 7 GC 10 I 1 L

Harrington, James C.
HCP 1 OG 1 SG 6

Harris, Albert
OG 1 RIP 4

Harris, Dianne
HCP 1 OG 1

Harris, Jim

HCP 1

Harris, Michael
GC a HCP 1 L 1 OG 1

Harris, Steve
GC a L 1 OG 2

Harris, Steve
GC 7 GC a HCP 1 OG 2

Harris, Thomas
OG 1 RIP 4

Harris, Virginia-Jane
GC 7 GC 10 H 2 H 3 HCP 1 L 1 OG 2

Harrison, Al
HCP 1 OG 1 RIP 4

Harrison, Ben
HCP 1 OG 1 RIP 4

Harrison, Peter
I 1 L 1 OG 1 OG 2 RIP 1 RIP 4 SG 1 SG 3
SG 6

Harrison, Susan Jane
HCP 1 OG 1 RIP 4

Harrold, et al, Gary
OG 2

Hart, Virginia V.
HCP 1 OG

Hartman, Randall
GC a HCP 1 L 1 MON 1 RIP 1 RIP 4

Hartman, Randall E.
E 1 HCP 1 L 1 MON 1 RIP 4 SG 1

Hartmann, Robin
HCP 1 OG 1 RIP 4

Harvey, Charles
GC a HCP 1 HCP 2

Harvey, Charles E.
HCP 1 HCP 2 OG 1

Hasbrouck, Ali
HCP 1 OG 1

Hass, Sheila
GC 8 L 1

Hassani-Azad, Hita
GC 7 GC 9 OG 1

Hasson-Smelt, Melissa
HCP 1 OG 1 RIP 4

Hatkoff, Andrew
OG 1

Hatton, Chris
HCP 1

Hauck, F. Vanny
HCP 1 L 1 RIP 4 SG 1 SG 6 WAT 3

Hauck, Fred B.
E 1 E 4 F 1 GC 7 HCP 1 L 1 OG 1 OG 2
RIP 4 TIM 1 VEG 2 WAT 3 WNSO 1

Hawkins, Arthur R.
HCP 1 OG 1 RIP 4

Hawkins, Jo Ann V.
HCP 1 OG 1 RIP 4

Hawkinson, Sarah
GC 10

Hawley-Norris, Melissa
GC 7 H 1 H 2 HCP 1 I 1 L 1 OG 1 RIP 4
SG 1 WAT 2 WNSO 1

Hawley-Norris, Melissa
GC 7 H 2 HCP 1 I 1 OG 1 RIP 4 SG 1 WAT 2

Hax, Gary
OG 1

Hax, Gary
HCP 1 OG 1

Haye, Stan
GC 10 HCP 1 L 1 RIP 4 RIP 7 WAT 2 WAT 6

Hayes, David & Jeanette
GC 7 HCP 1 HCP 3

Hayes, Julie
HCP 1 OG 1 RIP 4

Hayes, Julie A.
HCP 1 OG 1 RIP 4

Hayes, Ronn
GC 7 HCP 1 L 1 L 2 OG 1

Hays, Peter L.
HCP 1 OG 1 RIP 4

Hays-Lohrey, Steven
HCP 1 HCP 3 L 1 OG 1 RIP 4 SG 1 TIM 1 WAT 2
WAT 3 WAT 5 WAT 6

Hayward, Brendan
HCP 1 OG 1 RIP 4

Hayward, Brendan
OG 2 RIP 4

Head, Richard & Nancy
HCP 1

Healy, Kimberley
HCP 1 OG 2 RIP 4

Heckeroth, Brooke
GC 7 GC 8 HCP 2 L 1 TIM 1

Heckeroth, Brooke
GC 8 HCP 1 L 1 P 1 TIM 1

Hefling, William A.
GC 7 GC 10 I 1 L 1

Hege, Tamra C.
HCP 1 HCP 5 RIP 1 SG 1 SG 6

Hegner, John
HCP 1 OG 1

Heide, Andrew
HCP 1 OG 1 RIP 4

Heinen, David
HCP 1 RIP 4

Heinhero, Alex
HCP 1 OG 1 RIP 4

Heinrich, Barbara C.
GC 8 HCP 1 OG 1

Heiser, Serena

HCP 1 OG 1

Heiser, Serena
HCP 1 OG 1 OG 2

Heiss, Larry & Gayle
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Heitner, Mark & Brenda
GC 10 HCP 1 L 1 TIM 1

Heitner, Mark & Brenda
GC 10 L 1 TIM 1

Heitner, Mark & Brenda
E 4 GC 10 HCP 1 L 1 TIM 1

Helenchild, Liz
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Helenchild, Liz
HCP 1

Helmer, Robert
HCP 1 OG 1 RIP 4

Helmer, Robert
GC 5 HCP 1 L 1 OG 1 RIP 4 WMM 1

Helmers, Nancy H.
HCP 1 OG 1 P 1 RIP 4 WMM 1

Helms, Stephen R.
GC 7 GC 10 I 1 L 1

Helose, Stasha
HCP 1 OG 1

Hemsveet, Larry & Susan
HCP 1 OG 1 RIP 4

Henderson, Heidi Allens
GC 1

Henderson, Susanna
GC a OG 1

Hendricks, Valerie
L 1 OG 1 OG 2 RIP 1

Hendrickson, Roz
HCP 1 OG 1

Hengemuhle, Rebecca
GC 7 HCP 1 L 1 RIP 7

Henkins, Donald
GC 7 GC 10 I 1 L 1

Henning, Coral Lee
OG 2 TIM 3

Henriksen, Matthew A.
HCP 1 OG 1 RIP 4

Henry, Christopher J.
HCP 1 OG 1 RIP 7 TIM 6 TIM 8

Henry, Susan E.
HCP 1 OG 1 RIP 4 TIM 6

Henry, Susan E.
HCP 1 OG 1 RIP 4 TIM 6 TIM 8

Hensley, June
GC 8 GC 10 HCP 1 OG 1

Hensley, Karen
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 6 RIP 7 SG 3
TIM 1 WMM 1 WNSO 1

Henson, Joseph H.
GC 7 GC 10 I 1 L 1

Heny, Christophre J.
HCP 1 OG 1 RIP 4 TIM 6

Herbelin, Margaret
HCP 1

Herberg, John
GC 8 HCP 1 RIP 4

Herberg, John W.
HCP 1 RIP 5 SG 6 WAT 5

Hering, Bruce R.
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Heritage, Jean
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 6 RIP 7 SG 3
TIM 1 WMM 1 WNSO 1

Hernan, David
HCP 1 RIP 4

Hernandez, Diana
HCP 1 OG 1 RIP 4

Herndon, Marjorie B.
GC 8 GC 10 HCP 1

Herr, Amanda
GC 7 HCP 1 I 1 OG 1 OG 2 RIP 4 SG 1 SG 3
TIM 1 WAT 3 WNSO 1

Herr, Armana
E 4 HCP 1 L 1 OG 1 RIP 4 SG 1 TIM 1

Herren, Erika
GC 1 GC 8

Herren, et al., Erika
GC 1 GC 8 OG 1

Herren,et al., Erika
GC 1 HCP 1 WAT 3

Herrington, Cynthia R.
HCP 1 OG 1 RIP 4

Herrington, Gregory
HCP 1 OG 2 RIP 4

Herrington, Gregory L.
HCP 1 OG 1 RIP 4

Herrington, James L.
I 1 OG 1 OG 2 RIP 1 RIP 4

Herrmann, Christian
HCP 1 OG 1 RIP 4

Hersey, Elizabeth
HCP 1 HCP 2 L 1 RIP 4

Hersey, Elizabeth
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Hersey, Joan
HCP 1

Herth, Ken
GC 7 GC 10 I 1 L 1

Hescox, Pat
HCP 1 OG 1 RIP 4

Hescox, Pat

HCP 1 OG 1 OG 2 RIP 4

Hess, Carolyn
GC 7

Hess, Kathe
OG 1

Hesse, Elias
GC 7 L 1

Hesse, Elias
E 4 F 1 GC 7 GC 8 HCP 1 L 1 RIP 3 RIP 4
RIP 5 RIP 9 SG 6 TIM 1

Hesse, Julia
GC 7 HCP 1 L 1 RIP 1 RIP 4 RIP 9 RIP 10 SG 1
TIM 1 WAT 2 WAT 3

Hetzner, Ian
HCP 1 L 1 WMM 1

Hewett, B.
HCP 1 OG 1

Hewitt, Erika
HCP 1

Heyenga, Dean
GC 8 RIP 4 TIM 1 VEG 2

Heyenga, Dean
E 4 HCP 1 RIP 4 TIM 1 VEG 2

Hidahl, Gina
GC 8 GC 10 HCP 1

Hidalgo, Margie
HCP 1 OG 1 RIP 4

Hill, Anthony
OG 1 P 1

Hill, Frank P.
E 1 HCP 1 RIP 4

Hill, M. E.
HCP 1 MON 1 OG 1 TIM 1

Hill, Theresa
GC 5 I 1

Hillen, Ann
GC 7 GC 9

Hillen, Peter
GC 7 OG 1

Hillery, Karie
L 1

Hillery, Karie
L 1

Hilson, Marie
E 4 F 2 GC 8 GC 10 HCP 1 HCP 2 L 1 MON 7
OG 2 TIM 1 WMM 1 WNSO 1

Hiltz, Nancy
OG 1 P 1

Hippen, Kurt & Gale
WAT 2

Hirata, Rhonda
HCP 1 OG 1 RIP 4

Hirata, Rhonda
HCP 1 OG 1 RIP 4

Hitchcock, Hope
HCP 1 OG 1 RIP 4

Hitt, Ken
GC 7 GC 10 I 1 L 1

Hitt, Kitty Jo
GC 7 GC 10 I 1 L 1

Hoaglen, et al., Georgia
GC 8 HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4 SG 3
TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Hobbs, James A.
HCP 1 RIP 4

Hoblitt, Louise
HCP 1 RIP 4

Hoblitt, Louise M.
GC 8 HCP 1 RIP 4

Hoch, Peter H. & Linda S
RIP 4

Hodges, Irene G.
OG 1

Hodneland, Albert J.
GC 7 GC 10 I 1 L 1

Hodneland, Sheri
GC 7 GC 10 I 1 L 1

Hoekenga, Jackie
HCP 1

Hoekenga, Jackie
HCP 1 OG 1

Hoermann, Roland
GC 7 HCP 1 OG 1 RIP 4

Hoff man, Bob
HCP 1 OG 1 RIP 4

Hoffman, Joseph H.
HCP 1 OG 1 RIP 4

Hoff man, Karen
HCP 1 OG 1 RIP 4

Hoffman, Walter
HCP 1 OG 2 SG 1

Hoff man, Zane
GC 7 GC 10 I 1 L

Hogan, Tim
HCP 1 OG 1

Hogan, Tim
HCP 1 P 1

Hohman / Holzhauser, Mark E. / Lisa D.
HCP 1 OG 1 RIP 4

Holcomb, Marcela
GC 8 GC 10 HCP 1

Holder, Gerald P.
GC 7 GC 10 I 1 L

Holdt, Robert Miron
HCP 1 L 1 MON 1

Holey, John E.
HCP 1 OG 1 RIP 4

Holl, Karen
HCP 1 L 1 MON 1 RIP 4 WMM 1 WNSO 1

Holl, Karen
GC 10 HCP 1 L 1 RIP 4

Holland, Alan & Sunny
HCP 1 OG 1

Holland, Doris
HCP 1

Hollenbeck, Viviana
HCP 1 L 1 WAT 5

Hollerith, Dawn
GC a H C P 1 HCP 2 L 1 OG 2 RIP 4 TIM 1 WMM 1
WNSO 1

Hollerith, Dawn
E 1 HCP 1 RIP 1 RIP 4 RIP 5

Hollerith, Dawn
GC a H C P 1 HCP 2 L 1 OG 2 RIP 4 SG 3 TIM 1
WAT 3 WAT 6 WMM 1 WNSO 1

Hollywood-Nye, Joan
HCP 1 OG 1 RIP 4

Holmes, Alice
HCP 1 OG 1

Holmes, Alice
HCP 1 OG 2

Holmes, Gina
HCP 1 OG 1 RIP 4

Holper, Georje
GC 7 GC a H C P 1 I 1 L 1 RIP 4

Holt, Catherine
GC a GC 9 MON 1 MON 2 OG 1 RIP 10 TIM 3

Holt, Cathy
HCP 1

Holte, Janet
HCP 1

Hotter, Dean
E 1 HCP 1

Holz, Dennis E.
GC 8 GC 10 HCP 1

Hommes, Eden
GC 8 GC 10 HCP 1

Hood, Hilary
HCP 1 HCP 2 L 1 RIP 4

Hood, Hilary
GC 10 HCP 1 HCP 3 L 1 RIP 4

Hood, Hilary
HCP 1 HCP 2 L 1 RIP 4 TIM 5

Hood, John
HCP 1 HCP 2 L 1 RIP 4

Hood, John
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Hood, John
HCP 1 HCP 2 L 1 RIP 4 TIM 5

Hooks, Amy
GC 1

Hoot, Zak
GC 14

Hopkins, Bob
HCP 6

Hopkins, Ilse J.
HCP 1 OG 1 RIP 4

Hopping, Bryan
HCP 1 L 1 RIP 5 TIM 1 WMM 1

Hoppock, et al., David C.
E 4 HCP 1 L 1 OG 2 RIP 4 SG 6 VEG 2 WAT 6
WMM 1 WNSO 1

Horace, Brooks S.
HCP 1 OG 1

Horace, Brooks S.
GC 8 HCP 1 L 1 OG 1 P 1 RIP 1 TIM 3

Horace, Carol
HCP 1 OG 1

Horace, Carol

HCP 1 TIM 3 WAT 2

Horam, Mildred
HCP 1 OG 1

Hosterman, Holly
GC 8 HCP 1

Hosterman, Jennifer
GC 8 OG 1 OG 2

Hostetter, David
HCP 1

Houghton-Tennant, Gail
HCP 1 OG 1 RIP 4

Houston, David
GC 2 HCP 1 L 1 OG 1 RIP 1 RIP 4

Howe, Alan
GC 1 HCP 1 L 1 RIP 4 SG 1 SG 6 TIM 1 WNSO 1

Howe, Margaret
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 3
WAT 3 WAT 6 WNSO 1

Hower, Geery D.
GC 14

Howland, Patricia
OG 1

Howland, Patricia
HCP 1 OG 2 RIP 4

Hoyt, Ben
HCP 1 OG 1 RIP 4

Hoyt, Ben
HCP 1 OG 1 RIP 4

Hsieh, Danny
HCP 1 OG 1

Hubbard, Anne
GC 7 GC 8 HCP 1 P 1

Hubbard, Anne
HCP 1 OG 1 RIP 4 TIM 1 TIM 3

Hubbard, Anne
HCP 1 P 1 RIP 4 TIM 1 TIM 3 WMM 1

Hubbard, Anne
HCP 1 OG 1 TIM 3 WMM 1

Hubbard, Anne
HCP 1 OG 1 SG 1 TIM 1 TIM 3 WAT 1

Hubbard, Anne
GC 7 MON 1 P 1 WAT 2

Hubbard, Anne
H 2 HCP 1 I 1 L 1 SG 1 TIM 1 TIM 3 W M M 1
WNSO 1

Hubbard, Anne
GC 13 H 1 HCP 1 SG 6

Hubbard, Anne
HCP 1 OG 1 RIP 5 TIM 1

Hubbard, Kathleen
GC 8 GC 10 HCP 1 L 1 OG 1

Huber, Elenore Gabriele
E 4 GC 10 HCP 2 HCP 3 L 1 RIP 4 SG 1 TIM 1
TIM 5 WAT 2 WAT 3 WMM 1 WNSO 1

Huck, Jeremy
HCP 1 OG 1 RIP 4

Hudson, Don & Jan
GC 7 GC 10 I 1 L 1

Huffman, Robert J.
GC 7 GC 9 HCP 1 OG 1

Huggins, Jeffrey
HCP 1 OG 1 RIP 4

Hughes, Alexander
OG 1 RIP 4

Hughes, Barbara
HCP 1 OG 1 WAT 2 WAT 6

Hughes, Ken
HCP 1 OG 1 RIP 4

Hughes, Sally
HCP 1 RIP 4

Hull, Brian R.
HCP 1 OG 1 RIP

Hutlinger, Pamela J.
HCP 1 OG 1 RIP 4

Huls, Lary
HCP 1 OG 1

Hultin, Peder
OG 1 RIP 4

Hultin, Peder
OG 1 RIP 4

Humfrey, Jonathan
HCP 1

Humphrey, Craig
GC 7 GC 8 GC 10 HCP 1

Humphrey, DP
OG 1

Hunck, Waren
HCP 1 OG 1 RIP 4

Hund, Andrew
GC 8 HCP 1 HCP 2 WNSO 1

Hunt, Ben G.
HCP 6

Hunt, Douglas W.
HCP 1

Hunt, Jane
GC 8 GC 10 HCP 1 L 1 OG 1

Hunt, Melvin L.
E 1 E 4 F 1 HCP 1 L 1 OG 1 RIP 5 SG 1
TIM 1 WAT 2

Hunt, Michael
HCP 1 L 1 OG 2 RIP 4 SG 3 WAT 3

Hunt, Michael
GC 5 HCP 2 HCP 3 HCP 6 MON 1 P 2 TIM 1

Hunt, Michael
HCP 1 L 1 OG 2 RIP 5 WAT 6 WMM 1

Hunt, Murray
GC 10 HCP 1 OG 1 RIP 4

Hunt-Malone, Sara

HCP 1 OG 1

Hunter, David
OG 1 RIP 4

Hunter, Dennis
OG 1

Huppler, Nancy
HCP 1 OG 1 RIP 4

Huriey, Mary
HCP 1 OG 1 RIP 4

Hurson, James M.
GC 7 HCP 2 L 1

Hurst, Antonia
HCP 1 OG 1 RIP 4

Hurwitz, Tamar
HCP 1 P 1

Hutwitz, Tamar F.
HCP 1

Husari, Nancy
GC 9 I 1 L 1 OG 1

Husari, Nancy
HCP 1 I 1 OG 1

Husari, Nancy
HCP 1 I 1 OG 1

Husari, Nancy
GC 8 HCP 1 I 1

Husband et al., Rebecca
GC 5 HCP 1 RIP 3 WMM 1

Husk, R. L.
GC 7 GC 10 I 1 L 1

Huson, Elaine
HCP 1 OG 1

Hutchins, Joanna
F 1 HCP 1 HCP 5 RIP 1 SG 1

Hutchinson, Dougal
HCP 1 L 1 OG 1 SG 1 TIM 1

Hutchinson, Tory
HCP 1 OG 1 RIP 4

Hutton, Michael S.
GC 8 GC 10 HCP 1

Hyams, Chris
HCP 1 OG 1 RIP 4

Hyber, Donald W.
HCP 1 OG 1 RIP 4

Hyde, Jerry
GC 8 HCP 1

Hymer, Jonathan D.
HCP 1 OG 1 RIP 4

Iane, Sasha
HCP 1 RIP 4

Ianiro, Katherine
HCP 1

Iasnopolski, Bree
HCP 1 OG 1 RIP 4

Ichinose, Audrey
HCP 1 OG 1

Iles, Susan
HCP 1

Imperiale, Rhett
E 5 HCP 6

Ingham, Leslie
GC 9 OG 1

Inoue, Mayamo
GC 8 HCP 1 L 1 OG 1 SG 1 WMM 1 WNSO 1

Intrator, Joan
GC 8 GC 10 HCP 1

Ione, Sasha
HCP 1

Iosif, Katherine
WAT 2

Iosif, Katherine A.
GC 10 HCP 1 HCP 2 L 1 OG 2 RIP 1 RIP 4 SG 3

WMM 1 WNSO 1

Ire, Sasha
P 1 RIP 4

Irelan, Jeff

Irelan, Jeffrey
GC 5 HCP 1 HCP 2 L 1 RIP 1 RIP 4 SG 1 WAT 5
WMM 1

Irons, D.
HCP 1 OG 1 RIP 4

Irwin, Craig
HCP 1 L 1 OG 1 OG 2 RIP 1 RIP 4

Isaacs, Kristen
HCP 1 OG 1

Isbell, Eileen
HCP 1 I 1

Israel, Josh
HCP 1 L 1 OG 2 RIP 4 SG 5 WAT 3 WMM 1

Israel, Marc
HCP 1 OG 1

Israel, Marc
GC 7 HCP 1 I 1 OG 1

Israel, Mark
GC 8 HCP 1

Ito, Akira
GC 8 GC 10 HCP 1

Ito, Akira
GC 8 GC 10 HCP 1

Ivan, Damien
HCP 1 OG 1 RIP 4

Ivan, Marian
HCP 1 OG 1 RIP 4

Jackson, Anton
GC 1

Jackson, Bobi
HCP 1 RIP 4

Jackson, Emily

GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Jackson, James
HCP 1 I 1

Jackson, James Oren
GC 8 HCP 2 L 1 OG 2 RIP 4 SG 3 TIM 1 WAT 3
WMM 1 WNSO 1

Jackson, Nancy
GC 8 HCP 1 I 1 OG 1

Jackson, Patricia Lee
HCP 1 I 1 L 1 RIP 4

Jackson, Patricia Lee
GC 7 HCP 1 L 1 RIP 4

Jackson, Paul E
HCP 1 RIP 4

Jackson, Paul E.
GC 8 HCP 2 L 1 OG 2 RIP 4

Jacob, Daniel
E 1 HCP 1 L 1 MON 1 RIP 4 RIP 7

Jacob, Daniel
L 1 MON 1 RIP 4 RIP 5

Jacobs, David & Margaret
HCP 1 OG 1

Jacobson, Brett
HCP 1 HCP 2 RIP 7 TIM 1 WAT 6 WMM 1

Jacobson, David
HCP 1 OG 1 RIP 4

Jacobson, David J.
HCP 1 OG 1 RIP 4

Jacobson, Heather
GC 7 HCP 1 I 1 OG 1

Jacobson, Heather
HCP 1 L 1 OG 1

Jacobson, Pamela
HCP 1 L 1 OG 1 OG 2 RIP 7 SG 3 WMM 1

Jacobson, Pier
GC 8

Jacobson, William & Laise
GC 7 OG 1 RIP 4

Jahn, Jesse
GC 7 GC 10 I 1 L 1

James, A. Orena
GC 7 GC 8 H 1 HCP 1 OG 1

James, Douglas
GC 2 HCP 1 I 1 RIP 4

James, Frederick
HCP 1 OG 1 RIP 4

James, Karin
HCP 1 OG 2 SG 1 TIM 6

James, Karla
GC 8 HCP 1 L 1 OG 2 RIP 1 RIP 2 RIP 3 TIM 1
WAT 3 WNSO 1

James, Karla
GC 5 HCP 1 L 1 OG 2 RIP 4 WAT 3 WNSO 1

James, Karla
GC 5 HCP 1 HCP 2 L 1 RIP 4 TIM 1 WAT 3 WNSO 1

Jan, Stephanie
HCP 1 OG 1 RIP 4

Janairo, Kelly
GC 7 HCP 1 OG 1 OG 2

Janetos, Andrea
HCP 1 OG 1 RIP 4

Janners, Elizabeth
F 1 HCP 1 TIM 1

Janota, Jacquelyn
HCP 1

Janota, Jacquelyn
OG 1

Janota, Jennifer
F 1 GC 8 GC 18 HCP 1 HCP 5 RIP 1 RIP 2 RIP 3
SG 1 WAT 2 WMM 1 WNSO 1

Janota, Jennifer A.
F 1 GC 8 HCP 1 RIP 4 RIP 6 SG 1 TIM 1 WMM 1
WNSO 1

Janota, Raven
GC 7 GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1
TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Jantz, Brian
GC 7 HCP 1 L 1 TIM 1 WAT 3

Jantz, Brian
HCP 1 OG 1 TIM 1 WAT 3

Jaros, Nicholas
OG 1

Jasper, Marilyn
I 1 OG 1 OG 2 SG 1 TIM 3

Jasper, Marilyn
HCP 1 L 1 OG 1

Jauregui, Ken
HCP 1 OG 1 RIP 4

Jay, Michael
HCP 1

Jeff ries, Patricia J.
HCP 1 OG 1 RIP 4

Jelinek, Lynda
GC 8 GC 10 HCP 1

Jellison, Norm
F 1 HCP 1 RIP 1

Jenkins, Charles
HCP 1 OG 1

Jenks, Tanya
GC 7 HCP 1 OG 1 RIP 4

Jennings, Clyde
HCP 6 P 2

Jennings, Elizabeth
HCP 1 RIP 1 RIP 5 RIP 7 SG 6

Jennings, Nick
OG 1 RIP 4

Jennings, Nick
HCP 1 OG 1 RIP 4

Jensen, Dana
E 4 GC 8 GC 10 HCP 1 HCP 2 L 1 OG 2 RIP 4
SG 1 TIM 1 VEG 2 WAT 6 WNSO 1

Jensen, Janet
HCP 1 OG 1 RIP 4

Jensen, Janet
HCP 1 OG 2 RIP 4

Jensen, Jeff
GC 7 GC 10 I 1 L 1

Jensen, Mark
GC 7 GC 13 HCP 1 OG 1 RIP 3 RIP 7 TIM 1 TIM 3
WAT 2

Jensen, Mellissa
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Jeo, Richard M.
H 2 H 3 HCP 1 RIP 4

Jessup, Christy
E 4 GC 7 GC 8 HCP 1 I 1

Jessup, Christy
E 4 HCP 1 L 1 OG 2 TIM 1

Jimitz, D.J.
HCP 1 OG 2 RIP 4

Johanna, Natosi
HCP 1 OG 1

Johannes, Lily
HCP 1 OG 1 RIP 4

John, Carol
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Johnson, Alan
GC 8 HCP 1

Johnson, April
OG 1 RIP 1

Johnson, Bradley
HCP 1 OG 1 RIP 4

Johnson, C.
GC a HCP 1 WAT 3

Johnson, Carol
HCP 1 HCP 2 L 1 RIP 4

Johnson, D.L.
HCP 1 OG 1 RIP 4

Johnson, David A.
HCP 6

Johnson, Eric S.
HCP 1 OG 1 RIP 7 WAT 2

Johnson, Howie
HCP 1 OG 1

Johnson, J. Bradley
HCP 1 OG 1 RIP 4

Johnson, J.B.
HCP 1 OG 1

Johnson, John
GC 7 OG 1

Johnson, Judy
HCP 1 I 1 L 1

Johnson, Judy
GC 10 HCP 1 OG 1 TIM 6

Johnson, Judy
HCP 1

Johnson, Judy
E 2 HCP 1 L 1 OG 2 RIP 4

Johnson, Leland S.
HCP 1 OG 1 RIP 4

Johnson, Maggie
HCP 1 OG 1 RIP 4

Johnson, Mark & Eileen
HCP 1

Johnson, Matt
HCP 1 OG 1 RIP 4

Johnson, Neil
GC 7 GC 10 I 1 L 1

Johnson, Richard D.
HCP 1 OG 1 RIP 4

Johnson, Shannan M.
GC 8 GC 10 HCP 1 OG 1

Johnson, Shannan M.
GC 8 GC 10 HCP 1 OG 1

Johnson, Steve
GC 10 HCP 1

Johnson, Thomas
HCP 1 OG 1 RIP 4

Johnston, Drew
HCP 1 OG 1 RIP 4

Johnston, Jan
HCP 1 OG 1 RIP 4

Johnston, Jenny
HCP 1 OG 1 RIP 4

Johnston, Reed
F 1 HCP 1 HCP 5 WAT 4

Johnstone, Hoyt
GC 8 GC 10 HCP 1 L 1 OG 1

Johnstone, Ray L.
GC 7 GC 10 I 1 L 1

Johri, Sandeep
HCP 1 HCP 2 OG 1 OG 2 RIP 4 SG 1 SG 2 WMM 1
WNSO 1

Jolliffe-Johnson, Margaret A.
HCP 1 OG 1 RIP 4

Jones, Blomberg
HCP 1 OG 1

Jones, Dillan
OG 1 RIP 4

Jones, Jamie
GC 7 HCP 1

Jones, John

HCP 1 OG 1 RIP 4

Jones, John
HCP 1 OG 2 RIP 4

Jones, Kathleen
L 1 OG 1 OG 2 RIP 7 SG 1 WAT 3

Jones, Marla
GC a HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Jones, Molly
HCP 1 RIP 4 SG 6 WAT 2 WAT 6

Jones, Peter Y.
HCP 1 OG 1 RIP 4

Jones, Robert
GC 7 L 1

Jones, Robert R.
HCP 1 L 1

Jones, Sam
HCP 6

Jones, Sam
HCP 6

Jones, Stuart H.
HCP 6

Jones, Stuart H.
HCP 6

Jones, Suzanne
HCP 1 OG 1 RIP 4 TIM 3 TIM 5

Jones, Tom & Diane
OG 1 RIP 4

Jones, William H.
E 4 E 5 P 2

Jonsta, Jennifer
GC a HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4 SG 1
TIM 1 WAT 3 WAT 6 WNSO 1

Jordan, Jennifer
GC a HCP 1 P 1 RIP 4 SG 1

Jordan, Jennifer
HCP 1 OG 1 RIP 4

Jordan, Jennifer
HCP 1 L 1 OG 1

Jordan, Mark
GC 7 GC 10 HCP 1 HCP 2 OG 1 RIP 4 SG 1 WAT 2
WAT 6 WMM 1

Jordan, Mark
GC 5 HCP 1 HCP 2 L 1 RIP 4 SG 1 WAT 6 WMM 1

Jorgenson, Ken
E 4 GC 13 HCP 2 L 1 OG 2 RIP 4 TIM 1 WMM 1
WNSO 1

Jorgenson, Maria
E 4 GC 13 HCP 2 L 1 OG 2 RIP 4 TIM 1 WMM 1
WNSO 1

Joseph, John
HCP 1 OG 1 RIP 4

Jourdain, Charles J.
HCP 6

Joyce, Eileen
HCP 1 OG 1

Juarez, Maribel
HCP 1 OG 1

Judd, Trish
HCP 1 OG 1 RIP 4

Judd, Trish
HCP 1 OG 1 RIP 4

Judeikis, Debra
E 3 HCP 1

Judeikis, Debra
GC 8 HCP 1 L 2 OG 1

Julian, Shenandoah
HCP 1 L 1

Julioni, Joe
OG 1 RIP 4

Jung, Maria M.
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 6 WMM 1

Jung, Marian
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

Jung, Marian M.
HCP 1 HCP 3 L 1 OG 2 RIP 4 SG 1 WAT 2 WAT 6

Jungers, Jeanette
GC 7 H 1 H 2 HCP 1 HCP 2 I 1 OG 1

Juodeika, Lois F.
H 4 HCP 1 L 1 VEG 2

Justin, Craig
HCP 1 OG 1

Justiniano, Eddie
HCP 1

Justiniano, Eddie
GC 7 HCP 1 OG 1

Jaquez, Lisa
OG 1 RIP 4

Jaquez, Jr., Gonzalo
RIP 4

Kaatz, Robert
GC 7 GC 10 I 1 L 1

Kaczorowski, Mary Rose
GC 8 HCP 1 HG 2 L 1 OG 2 RIP 4 SG 3 TIM 1
WNSO 1

Kadiyala, Debra
HCP 1 OG 2 RIP 4

Kadlecik, Laura
F 2 GC 8 HCP 1 RIP 10 WAT 1 WAT 2 WAT 4

Kagan, Marceya
HCP 1 L 1 OG 1 OG 2 SG 1 TIM 1

Kahon, Dave
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 6
TIM 1 WAT 3 WNSO 1

Kahu, Lauren
HCP 1 OG 1 RIP 4

Kalange, Tom & Laurel
HCP 1 OG 1

Kalange, Tom & Laurel
HCP 1 OG 1

Kalkanis, Nancy & George
OG 2 RIP 4

Kalkans, Nancy & George
HCP 1 OG 1 RIP 4

Kallaway, Sean
GC 7 GC 9 GC 10

Kallo, Paulette
GC 8 HCP 1 L 1 TIM 1 WAT 3

Kalvass, Emily
F 1 HCP 1 L 1 RIP 4 RIP 9 SG 1 TIM 1 WAT 4

Kaly, Kimberley
HCP 1 OG 1 RIP 4

Kamensly, Susan
HCP 1 OG 1 RIP 4

Kamil, Jeremey
HCP 1 L 1 MON 1 RIP 4 RIP 7

Kamil, Jeremy
HCP 1 MON 1 RIP 1 RIP 4 RIP 5

Kamil / Pageo, Jeremy / Joel
RIP 4

Kamins, Sue
HCP 1 OG 1

Kaminski, Karl S.
GC 7 GC 10 I 1 L 1

Kamiya, Janet
H 1 RIP 4 TIM 1

Kamm, Mike
HCP 1 HCP 2 L 1 RIP 4

Kampa, Richard R.
GC 8 GC 10 HCP 1

Kams, Frank J.
HCP 6

Kandinsky, Carla
HCP 1

Kandinsky, Carla
GC 5 GC 9 HCP 1 SG 1

Kane, Jeffrey
HCP 1

Kanter, Bruce
E 4 GC 10 HCP 2 HCP 3 L 1 RIP 4 SG 1 TIM 1
TIM 5 WAT 2 WAT 3 WMM 1 WNSO 1

Kaplan, Carol
OG 1 P 1

Kaplan, Heather
GC 5 HCP 1 L 1 RIP 7

Kaplan, Rebecca Dawn
HCP 1 OG 1 OG 2

Kaposi, Emily
HCP 1 OG 1

Karmeisool, Nicole
GC 9 GC 10 HCP 1

Karno, Rachel
HCP 1 L 1 OG 1

Karsteadt, Larry
HCP 1

Karunas,
OG 1 RIP 4

Kassa, Matt
GC 7 GC 10 I 1 L 1

Katen, Margaret
HCP 1 OG 1 RIP 4

Kathreen, Margaret
HCP 1 OG 1 RIP 7 SG 1

Katz, Alice
HCP 1 HCP 2

Katz, Jesse
GC 8 GC 13 MON 2 RIP 3 WAT 3

Katz, Sara

H 2 H 4 HCP 1 OG 1 TIM 1 TIM 3

Katzman, Amy
GC a HCP 1 OG 1

Kauffman, George & Peggy
GC 7 HCP 1 OG 1

Kaufman, Jean
GC 10 HCP 1 OG 1

Kaufman, Karen
HCP 1 OG 1 RIP 4

Kawecki, David J.
GC a HCP 2 L 1 RIP 5 SG 1 TIM 1 WAT 3 WAT 6
WMM 1 WNSO 1

Kay, Rena
GC a H 1 HCP 1 L 1 OG 1 TIM 3 WAT 2 WAT 3

Kay, Rena
E 1 HCP 1 L 1 OG 2 SG 1 TIM 3 WAT 3

Keahens, Chelsea
H 2 HCP 1 OG 1 SG 1

Keaw, Mary A.
HCP 1 OG 1 RIP 4

Keeler, Barbara
H 1 H 2 H 4 HCP 1 L 1

Keeler, Barbara
H 1 L 1

Keeler, Don
H 1 L 1

Keeler, Donald
H 1 H 2 H 4 HCP 1 L 1

Kehoe, Daniel
HCP 1 RIP 4

Keim, Krista
HCP 1

Keith, Nakoma
HCP 1 TIM 6

Keith, Rothenberg
HCP 1 OG 1 RIP 4

Keliame, Emil
HCP 1 OG 1

Keliane, Emil
HCP 1 OG 1

Kelleher Roy, Marie
GC 8 HCP 2 L 1 RIP 1 RIP 5 SG 1 TIM 1 WAT 3
WMM 1 WMM 2 WNSO 1

Keller, C. Cord
GC 8 GC 10 HCP 1

Keller, David
HCP 1 OG 1 RIP 4

Keller, David
HCP 1 OG 2 RIP 4

Keller, Gordon D.
HCP 1 OG 1 RIP 4

Keller, Sarah L.
HCP 1 OG 1 SG 1 SG 3

Kelley, Pat
GC 7 GC 10 I 1 L 1

Kelly, Claire
HCP 1 I 1

Kelly, Fiona
HCP 1 OG 1 RIP 4

Kelly, Kathie
GC 8 HCP 3 L 1 OG 1 OG 2 RIP 4 WAT 3 WNSO 1

Kelly, Patricia M
HCP 1 OG 1 RIP 4

Kemp, Roberta
GC 8 GC 10 HCP 1

Kemp, Roberta A.
OG 1 OG 2

Keniston, David
H 1 HCP 1 HCP 2 OG 1 RIP 4 RIP 5 WAT 2

Kennard, Deborah
HCP 1 OG 1 RIP 4

Kennard. Deborah

HCP 1 OG 1

Kennedy, Ruth K.
HCP 1 OG 1 RIP 4

Kennon, John
E 5 HCP 6 HCP 7

Kenny, Margaret E.
HCP 1 OG 1 RIP 4

Kent, Bette
GC a HCP 1 OG 1

Kent, Nicholas
HCP 1 OG 1

Kenworthy, Lyle H.
GC 7 GC 10 I 1 L 1

Kenyom, Heath
GC 7 GC 10 I 1 L 1

Kenyon, Alton 0.
GC 7 GC 10 I 1 L 1

Kenyon, Betty L.
GC 7 GC 10 I 1 L 1

Kern, Judith
GC 7 HCP 1 HCP 2 I 1 L 1 RIP 4

Kern, Judith H.
GC 5 GC 10 HCP 1 HCP 3 RIP 4

Kern, Judith H.
HCP 1 HCP 2 L 1 RIP 4 TIM 5

Kerns, Dana
GC 5 HCP 1 L 1

Kerpan, Maria
GC 9 HCP 1 L 1

Kerr, Randy C.
GC 7 GC 10 I 1 L 1

Kersell, Keith
HCP 6

Kersell, Keith
E 5 HCP 6

Kerv, M.
HCP 1

Ketchum-Carroll, Katie
HCP 1

Ketihum-Carroll, Katie
HCP 1 OG 1

Kettrell, Dorian
HCP 1 OG 1

Keussen, Sathya
HCP 1

Key, Ann Chappelle
GC 7 GC 9 HCP 1 OG 1 TIM 1

Keyser, Christine
GC 2 GC 5 GC 8 HCP 1 L 1 RIP 4 SG 1 TIM 1
VEG 2 WMM 1 WNSO 1

Keyser, Christine
GC 7 HCP 1 HCP 2 I 1 L 1 OG 1 RIP 7 SG 1
TIM 1 TIM 5 WAT 3 WMM 1 WNSO 1

Keyser, Christine
GC 2 GC 5 GC 9 H 4 HCP 1 HCP 2 I 1 L 1
RIP 4 SG 1 SG 6 TIM 1 VEG 2

Keyser, Dorian & Dalia
HCP 1 HCP 2 L 1 RIP 7 SG 1 SG 3 TIM 1 WAT 2

Khalid, Farzana
HCP 1

Khalili-Borna, Christine A.
HCP 1

Khalsa, Jai Hari Singh/Kaur
GC 8 GC 10 HCP 1 L 1 OG 1

Khalsa, Mha Atma Singh
GC 8 GC 10 HCP 1 L 1 OG 1

Khalsa, Santokh & Suraj
GC 8 GC 10 HCP 1 L 1 OG 1

Khalsa, Shanti
GC 8 GC 10 HCP 1 L 1 OG 1

Khan, Mary J.
OG 1 RIP 4

Khare, Priti
HCP 1 OG 1

Khare, Priti
HCP 1

Khera, Ashish
HCP 1 OG 1 RIP 4

Kibbey, tan
HCP 1 L 1 OG 1 OG 2

Kidd, Jeff
HCP 1 HCP 5 OG 1 OG 2

Kidwell, Jeff
GC a GC 10 HCP 1

Kietzer, Kenneth J.
HCP 1 OG 1 RIP 4

Kilbreth, Jeffrey
GC 7 GC a H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Kilbreth, Shirley S.
H 4 HCP 1 OG 2 RIP 4 TIM 1 TIM 3 TIM 7

Kile, Dave
HCP 6

Kilpatrick, Tree
HCP 1

Kilpatrick, Tree
HCP 1 L 1 RIP 4

Kim, Jeanna
GC 7 GC a H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Kinaci, Tuline
TIM 6

Kinaci, Tuline
HCP 1 OG 1 TIM 6

Kinali, Sara
L 1 OG 1 TIM 6

Kincade, Kathy
HCP 1 OG 1 RIP 4

Kincade, Kathy
HCP 1 OG 1 RIP 4

Kinch, Daniel M.
HCP 1 I 1 L 1 L 2

Kindsvater, Ellen P.
GC 7 HCP 1

Kindsvater, Ellen P.
GC 7 P 1 TIM 1

King, Bill
GC 8 GC 10 HCP 1

King, Christina
HCP 1 OG 1 RIP 4

King, David
GC 8

King, David
GC 7 GC 8

King, Elisabeth
HCP 1 OG 1 RIP 4

King, Joyce H.
GC 2 HCP 1 SG 3

King, Joyce H.
GC 2 HCP 1 MON 1 SG 3 SG 7 VEG 1 WAT 3 WAT 6

King, Laura
GC 5 OG 2

King, Leah
HCP 1 OG 1

King, Lois
HCP 1 HCP 2 L 1 OG 2

King, Lynn
HCP 1 OG 1 RIP 4

King, Michael
GC 6 GC 7 GC 8 HCP 1 OG 1 RIP 4

King, Paula
HCP 1 OG 1 RIP 4

Kinker, Robyn
GC 7 H 4 HCP 1 RIP 4 SG 1 TIM 3

Kinker, Robyn
H 1 HCP 1 HCP 2 L 1 OG 1 SG 1 TIM 3

Kinnar, Kaitlyn
OG 1 RIP 1 WAT 2

Kinnard, Sean
OG 1

Kinswa, Mickey H
GC 7 GC 10 I 1 L

Kint, Aaron
HCP 6

Kint, Aaron
HCP 6

Kirch, Robert P. / Enike
HCP 1 OG 1

Kirchmeier, Edwin C.
GC 8 GC 10 HCP 1

Kirk, Chris
HCP 1 OG 1 RIP 4

Kirk, Kristin
E 1 HCP 1 OG 1 SG 1 TIM 3

Kirk, Kristin
GC 7 GC 8 HCP 1 L 1 L 2 OG 1 RIP 4 SG 1
WAT 2

Kirk, Maxine D.
HCP 1 OG 1

Kirk, Terrence
HCP 1 L 1 RIP 4 TIM 1 WMM 1 WNSO 1

Kirk, Thomas
F 1 GC 8 HCP 2 L 1 MON 1 RIP 4 SG 1 WAT 3
WAT 4 WMM 1

Kirkendall, Nick
HCP 1 I 1 L 1 OG 1 RIP 4 TIM 2

Kirkwood, Peter
RIP 4

Kirschbaum, Saran
HCP 1 HCP 2 L 1 RIP 4 TIM 1 WMM 1 WNSO 1

Kirsenluhr, T.
E 4 P 1 TIM 1

Kiseleff, Robert W.
HCP 1 OG 1 RIP 4

Kissilove, Betty
GC 7 HCP 1 L 1 OG 1

Kissilove, Betty
GC 7 HCP 1 OG 1

Kittle, Pat
HCP 1

Kittrell, Dorian
HCP 1 OG 1

Kjellberg, Robert
RIP 4

Kjellberg, Robert
HCP 1 RIP 4

Kleihauer, Susan
GC 8 HCP 1 L 1 OG 1 TIM 1 WMM 1

Kleihauer, Susan
GC 8 HCP 2 L 1 OG 1 OG 2 RIP 4 SG 1 SG 3
TIM 1 WNSO 1

Klein, Gergory
HCP 1 OG 1

Klein, Joshua
HCP 1 OG 1 RIP 4

Klein, Joy
HCP 1 TIM 5

Klein, Siena
GC 7 HCP 1

Klein, Siena
GC 7 HCP 1

Kleinberg, Veronica
HCP 1 OG 1 RIP 4

Kleppner, Caleb

GC 6 HCP 1 HCP 3 P 1

Kleyn-Schoorel, Jean S.
GC 7 GC 9 OG 1

Klock, Bob
HCP 1 OG 1 RIP 4

Kloepfer, Jack
GC 8 GC 10 HCP 1

Klosterman, Lida R.
HCP 1 OG 1 RIP 4

Klynn, Brett
GC 9 GC 10 OG 1

Knazek, Evelyn V.
GC 8 GC 10 HCP 1 OG 1

Knickerbacher, Dana
GC 8 GC 10 HCP 1

Knight, Sunny
HCP 1 OG 1

Knight, Sunny
GC 8 OG 1 RIP 4

Knippen / Cassinerio, Tom / Ben
E 5 HCP 6

Knox, Ron
HCP 1 L 1 RIP 4 RIP 5

Kobran, Chris
OG 1 RIP 4

Kobsa, Ann
HCP 1 L 1 OG 1 OG 2 RIP 4 WNSO 1

Kobsa, Ann T.
H 2 HCP 1 HCP 2 L 1 OG 2 RIP 7 SG 1 WAT 2

Koehler, Linda
HCP 1 OG 1 RIP 4

Koehler, Linda
GC 8 HCP 1 OG 1 P 1 RIP 4

Kogan, Raisa
GC 8 GC lo HCP 1

Kohlsaat, Kat
L 1 OG 1 OG 2 RIP 4 WAT 6

Koiarich, Kim
HCP 1 RIP 4 WAT 2

Kolchin, Philip William
HCP 1 OG 1

Kolka, Carolyn
HCP 1 OG 1 RIP 4 WMM 1

Kolka, Carolyn
F 1 HCP 1 RIP 1 SG 6 TIM 3 WA 1

Konich, Ian
GC 5 HCP 1 L 1 OG 2 SG 1 WMM 1 WNSO 1

Konnert, Ellen Lohn
HCP 1 OG 1

Kordesch, Nick
HCP 1 L 1 SG 6

Korff, Wyatt
HCP 1 OG 1

Korl, Paula
HCP 1

Korngold, Eleanor
HCP 1 OG 1 RIP 4

Kosinski, Kay
HCP 1

Kossow, Richard & Ginger
HCP 1 RIP 4 SG 1 TIM 1 WAT 3 WAT 6

Kossow, Richard and Ginger
E 1 GC 8 MON 2

Koteen, Peggy
HCP 1 OG 1 OG 2

Kotterman, Doug
HCP 6

Kotterman, Doug
HCP 6

Kottke, Jan
GC 8 HCP 1 L 1 OG 1

Kousky, et al, Carolyn
E 4 GC 2 GC 8 H 2 H 3 HCP 1 HCP 2 L 1
RIP 3 RIP 4 RIP 5 RIP 8 TIM 1 VEG 2 WAT 2 WAT 3
WAT 6 WMM 1 WNSO 1

Kousky, et al., Carolyn
E 4 F 1 FACT 1 GC 7 GC 8 H 2 H 3 HCP 1
HCP 2 MC 1 RIP 3 RIP 7 RIP 8 SG 1 SG 6 TIM 1
WAT 3 WAT 4 WNSO 1

Kousky, et al., Carolyn
E 1 F 1 GC 2 GC 5 GC 8 H 4 HCP 1 HCP 2
RIP 2 RIP 4 RIP 5 SG 1 SG 6 TIM 1 VEG 2 WAT 4
WNSO 1

Kovacovich, John
E 5 HCP 6

Kown, Miles
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Kozarsky, Dan
GC 8 GC 10 HCP 1 OG 1

Kraft, Erika
H 2 HCP 1 I 1 L 1 WAT 1

Kramer, Daniel
E 3 E 4 P 1 TIM 1 TIM 2 TIM 6

Kramer, Danielle
HCP 1 OG 1 RIP 4

Kramer, Paul
HCP 1

Kramer, Paul
E 7 GC 8 OG 1 P 1

Kraus, Nona
E 1 GC 7 H 4 HCP 1 HCP 2 RIP 4 WAT 2

Krause, Jamie
HCP 1

Krause, Lester
HCP 1

Krause III, Lester
HCP 1

Krauss, Kathleen
GC 10 HCP 1 HCP 2 I 1 L 1 RIP 3 SG 1 WAT 2

Krauss, Kathleen
HCP 1

Krauss, Kathleen
GC 7 HCP 1 HCP 2 I 1 OG 1 SG 1 WAT 2 WAT 3

Kravitz, Laura
HCP 1 HCP 2

Kravitz, Lynn
L 1 TIM 1

Kravitz, Richard
GC 8 L 1 WAT 3

Kravitz, Scott
GC 7 GC 8 WAT 3

Kravitz, Scott
HCP 1 L 1 SG 1 TIM 1 TIM 8

Krebs, Loren E.
E 5 HCP 6 P 2

Kreider, Philip
HCP 1 OG 1 OG 2 TIM 1 VEG 2

Kreider, Philip
E 4 L 1 OG 1 TIM 1 VEG 2

Kremer, Alene
HCP 1 OG 1 RIP 4

Kremer, Mildred F.
HCP 1 OG 1 RIP 4

Krieger, Matthew
GC 8 RIP 3 TIM 1

Kriegler-Dobs, Patricia
OG 1

Krihak, Paul R.
HCP 6

Krihak, Paul R.
HCP 6

Krisky, Steven
GC 8 GC 10 HCP 1 L 1

Kroop, J.
OG 1

Kroski, Joanne S.
HCP 6

Kross, M
GC 9 GC 10 HCP 1 L 1

Kross, et al., Sue
HCP 1 HCP 2 L 1

Krotchko, John
F 1 GC 4 GC 5 GC 8 HCP 1 HCP 2 L 1 RIP 1
RIP 4 SG 1 SG 7 WAT 1 WAT 4

Krotchko, John F.
F 1 GC 8 H 2 HCP 1 HCP 2 L 1 RIP 1 RIP 4
SG 1 TIM 3 WAT 4

Krouse, Greg
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Krutein, Helmut
HCP 1 OG 1

Kuchler, Cheryl
GC 8 GC 10 HCP 1 L 1 OG 1

Kudurshian, Aram
GC 8 GC 10 HCP 1

Kuhn, Charles
HCP 1 OG 1 RIP 4

Kujawa, Stephen
HCP 1 OG 1 RIP 4

Kunkel, Evelyn
GC 1 GC 4 GC 7 H 1 H 2 HCP 1 I 1 L 1
OG 1 RIP 4 SG 1 TIM 3 WNSO 1

Kunkel, Evelyn
GC 4 GC 9 GC 14 GC 15 H 1 HCP 1 L 1 OG 1
RIP 4 SG 1

Kunkel, Evelyn M.
GC 1 GC 9 H 1 H 2 HCP 1 I 1 L 1 OG 1
RIP 4 SG 1 TIM 3

Kunz-Vincere, Alicia
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Kuriloff, Eff ie
HCP 1 OG 1

Kuten, Margaret
HCP 1 OG 2 RIP 4

Kwak, et al., Lawrence
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7 WAT 3

Kyser, Erik
HCP 1 OG 2 RIP 4

Kysey, Bill
HCP 1 OG 1 RIP 4

La Pointe / Augus, Jackie / Kevin
RIP 4 SG 3

LaFollette, Peter
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 1 RIP 4 SG 3
TIM 1 WAT 3

LaFreniere, Tri'shanne
GC 8 GC 10 HCP 1 L 1 OG 1

LaHonta, Jodie
HCP 1 OG 1 RIP 4

LaHonta, Jodie
HCP 1 OG 1 RIP 4

LaPuma, Karen
HCP 1 OG 1 RIP 4

LaRhette, Marc
HCP 1 OG 1 RIP 4

LaScola, Mark
HCP 1 OG 1 RIP 4

Labrecque, Darlene
HCP 1 OG 1 RIP 4

Lach, Gae C.
GC 10 HCP 1

Lach, Gae C.
HCP 1 L 1 P 1

Lach, John
GC 5 GC 8 HCP 1 L 1 OG 1 TIM 1 WAT 3

Lach, Susannah
GC 8 HCP 1 L 1 OG 1 RIP 4 WAT 3

Lach, Susannah
GC 5 HCP 1 L 1 RIP 5 TIM 5

Lache, Barbara
GC 7 HCP 4 L 1

Lachowsky, Judy
F 3 GC 7 GC 8 HCP 1 HCP 2 L 1 MC 1 OG 1
OG 2 P 1 RIP 4 TIM 1 WAT 2 WAT 3 WMM 1 WNSO 1

Laczynski, Adela
HCP 1 OG 1 RIP 4

Ladrech, Michael
HCP 1 OG 1

Laguana / Moultrie, Gina / Richard
HCP 1 I 1 L 1 OG 1 OG 2

Laguana / Moultrie, Gina / Richard
GC 7 HCP 1 I 1 L 1 OG 1

Laine, Terry
GC 1

Lainen-Keussen, Nancy
GC 7 GC 8 SG 6

Laird, Mary
HCP 1 OG 1 RIP 4

Laird, Mary
HCP 1 OG 2 RIP 4

Lajoie, Kenneth
OG 1 RIP 4

Lajoie, Kenneth R.
HCP 1 OG 1 RIP 4

Lake, Richard T.
GC 9 OG 1

Laland, Avar

GC 10 L 1 OG 1

Lalime-Davidson, Suzette
HCP 1 OG 1 RIP 4

Lamb, Daniel Ft.
HCP 1 OG 1

Lamboy, Albert & Patricia
HCP 1 OG 1 RIP 4

Lamm, Mitch & Cathie
GC a GC 10 HCP 1 L 1 WAT 2

Lamoreaux, Richard
HCP 1 OG 1 RIP 4

Lamport, Jim
GC a P 1

Lancaster-Shallenber, Francine
HCP 1 OG 1

Landbammer, Bill
GC 7 GC 10 I 1 L 1

Landers, Wayne
H 2 H 3 HCP 1 L 1 MON 1 OG 1 SG 6

Landing, Marla D.
E 5 HCP 6

Landon, Charles
L 1 OG 1

Landrum, Kenneth A.
HCP 1 OG 1 RIP 4

Landshoff, Debbi
HCP 1 HCP 2 HCP 5 L 1 MON 1 RIP 4 WMM 1 WNSO 1

Landshoff, Debbi
GC a HCP 1 HCP 2 HCP 5 L 1 RIP 4 WMM 1 WNSO 1

Lane, Dick
HCP 1 L 1 OG 1

Lane, Dick
HCP 1 L 1 OG 2

Lane, Stephanie
GC a OG 1 RIP 5 RIP 7 SG 1

Lang, Frank
HCP 1 OG 1

Langenthal, Josh
HCP 1 OG 1

Langenthal, Josh
HCP 1

Langer, Raymond
HCP 1 OG 1 RIP 4

Langstrom, Judith
HCP 1

Langstrom, Judith
HCP 1

Lanham, Mel
P 1

Lanier, Jim
F 1 HCP 1 I 1 OG 2 RIP 4 WAT 4

Lanman, C
GC 8 HCP 2 L 1 OG 1 TIM 1 VEG 2 WMM 1

Lanman, Cecelia
E 3 GC 7 GC 8 GC 10 GM 1 HCP 1 L 1 OG 1
OG 2 TIM 1 WMM 1

Lanman, Cecelia
AQ 1 GC 8 GC 10 GM 2 L 1 OG 2 TIM 1 TIM 8
VEG 2 WMM 1

Lanman, Cecelia
AQ 1 E 3 GC 5 GC 8 GC 10 GM 2 HCP 1 L 1
OG 1 TIM 1 VEG 2 WMM 1

Lanning, Lisa
HCP 1 OG 1 RIP 4

Lapiner, Jane
E 4 HCP 1 OG 1 SG 1 TIM 3 TIM 5

Laplante, Michelle
HCP 1 OG 1

Lapunt, Maxum
HCP 1 OG 1 RIP 4

Largen, David
HCP 1 OG 1 RIP 4

Larison, Brenda
GC 2 RIP 4 RIP 7

Larry, Michael
HCP 1

Larsen, Glenn
HCP 1 OG 1 RIP 4

Larsen et al., Catherine
GC 8 HCP 1 L 1 RIP 4 WAT 3

Larson, Mary
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Latif, Quresh
GC 8 MI 1 RIP 5 SG 6

Latin, Bernadette
HCP 1 I 1

Latshaw, Glenn
GC 8 GC 10 HCP 1

Latta, et al., Beth
HCP 1 OG 1 RIP 4

Lattanza, Gregory
E 4 HCP 1 L 1 TIM 1

Laurel, Mikki
HCP 1 OG 1 RIP 4

Laurick, Jr., Richard R
GC 7 GC 10 I 1 L 1

Lavee, Annina
GC 8 GC 10 HCP 1 L 1 OG 1

Lavine, Harris & Paula
RIP 4

Lawless, Charlotte
GC 8 GC 10 HCP 1 L 1 OG 1

Lawrence,
HCP 1 OG 1 RIP 4

Lawrence, Stephanie

OG 1 RIP 4

Lawrence, et al., Chandra
HCP 1 MON 1 WAT 2 WAT 5

Lawrentz, John N.
E 5 HCP 6

Lazar, Jane
HCP 1 HCP 2 RIP 4 TIM 1

Lazarus, Lory
GC a GC 10 HCP 1 L 1 OG 1

LeBlanc, Marjorie Loraine
HCP 1

LeFevre, Dale N.
F 1 L 1 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Leader-Picone, Whitney
HCP 1 OG 1 RIP 4

Leahey, Teresa
GC a GC 10 HCP 1

Learner, Allen Jay
HCP 1 I 1 L 2

Leath, Marcella
OG 1 RIP 4

Leavitt, Patricia
GC 5 GC 10 HCP 1

Lebechre, Richard
OG 1 RIP 4

Leberer, Andrea
HCP 1 OG 1

Leberer, Andrea
HCP 1 OG 2 SG 1

Lederman / Opie, Nicole / Ellen
GC 10 HCP 1 HCP 2 L 1 TIM 1

Lee, Carol
HCP 1 OG 1 TIM 3

Lee, Deborah
HCP 1 OG 1 RIP 4

Lee, Deborah
HCP 1 OG 1 RIP 4

Lee, Erin
OG 1 RIP 4

Lee, John
HCP 1 OG 1 RIP 4

Lee, John
HCP 1 OG 1 RIP 4

Lee, Julie
HCP 1 OG 1 RIP 4

Lee, Julie M.
HCP 1 OG 1 RIP 4

Lee, Laree L.
L 1 OG 1 OG 2 RIP 7 SG 1 WAT 3

Lee, Linda
GC 8 HCP 3 L 1 OG 1 OG 2 RIP 4 WNSO 1

Lee, Lois
HCP 1 OG 1 RIP 4

Lee, Sr. Ann Marie
L 1 OG 1 RIP 7

Lee, Tina
OG 1 RIP 1

Lee, Wayne
HCP 1 OG 2

Lee, et al., Alison
HCP 1

Leek, Michelle
HCP 1 OG 1

Leete, Constance
GC 8 GC 10 HCP 1 L

Leff, Irwin & Enid
HCP 1 RIP 1

Lefler, Susan K.
GC 8 GC 10 HCP 1

Legnitto, Suzanne
HCP 1 OG 1 RIP 4

Legrand, Bruno
OG 1

Lehman, Kathy
HCP 1

Leibler, Ronald
HCP 1 OG 1

Leitbold, Melinda
H 2 H 3 OG 1 RIP 4 RIP 8 SG 8 TIM 3 VEG 2

Leitholt, Melinda
HCP 1 L 1 RIP 4 SG 1 TIM 3 WAT 5

Lemieux, James
HCP 6

Lender, Leila
HCP 1 OG 1

Lenning, Harlo
F 1 F 2 GC 7 GC 8 GC 10 GC 13 HCP 1 HCP 2
HCP 3 L 1 L 2 OG 1 OG 2 P 1 RIP 4 RIP 7
SG 1 TIM 1 VEG 2 WAT 2 WAT 6 WMM 1 WNSO 1

Lenning, Harlo
F 1 GC 8 GC 10 HCP 1 HCP 2 L 1 L 2 OG 2
RIP 1 RIP 4 SG 1 SG 6 TIM 1 VEG 2 WAT 4 WMM 1
WNSO 1

Lenning, Harlo
GC 8 GC 10 HCP 1 HCP 2 L 1 TIM 1 VEG 2

Lerch, Joe
GC 7 GC 10 I 1 L 1

Leschak, Peter
GC 8 GC 10 HCP 1

Lesperance, William G.
HCP 1 OG 1 RIP 4

Lester, Katharine S.
GC 7 I 1 OG 1

Leubner, Shawn
HCP 1

Levasseur, Aran
GC 7 GC 9 OG 1

Levie, Jeremy
GC a HCP 2 L 1 OG 2 RIP 4 TIM 1 WAT 3 WAT 6
WMM 1

Levine, Bill
HCP 1 OG 1

Levine, Virginia
HCP 1

Leving, Leonard
HCP 1 OG 1 RIP 4

Levinson, Mark
HCP 1 OG 1 RIP 4

Levongston, Margaret
HCP 1 L 1 TIM 1

Levy, Carrie
HCP 1 OG 1 RIP 4

Levy, Deborah
H 4 HCP 1 HCP 2 OG 1

Levy, Deborah
HCP 1 HCP 2 L 1 OG 1 TIM 5

Lewin, David
GC 7 GC a HCP 1 HCP 2 P 1 SG 1 TIM 1 WAT 3

Lewis, Alan D.
E 5 HCP 6

Lewis, Betsy
HCP 1 I 1 L 2 OG 1 TIM 3

Lewis, Ed
HCP 1 L 1 OG 1 OG 2 RIP 4

Lewis, Ed
GC 7 GC a HCP 1 OG 1 RIP 4

Lewis, Ronald C.
GC 7 GC 10 I 1 L 1

Lewis / Powers, M. Kate / Neville A.
GC 7 HCP 1 L 1 RIP 4

Liberman, Rebecca
GC a HCP 1

Licht, Suzanne

GC a GC 10 HCP 1 L 1 OG 1

Lichtenberg, Robert
HCP 1 OG 1 RIP 4

Lightfoot, Joan
H 4 HCP 1 L 1 OG 1 RIP 4 SG 1

Ligon, William & Kristin
HCP 1 OG 1 RIP 4

Liken, Janice
HCP 1 HCP 2

Lilien, Janice
GC a HCP 1 HCP 2

Lilien, Marc
HCP 1 HCP 2

Lilien, Pearl
HCP 1 HCP 2

Lilley, Sasha
HCP 1 OG 1 RIP 4

Lim, Marja
HCP 1 OG 1 RIP 4

Linas,
GC 7 GC 10 I 1 L 1

Lind, Eskel
GC a GC 10 HCP 1 HCP 2 I 1 L 1 OG 2 TIM 1
VEG 1 WNSO 1

Lind, Karen
GC a GC 10 HCP 1 L 1

Lind-Hanson, Mark V.
HCP 1 OG 1 RIP 4

Lind-Hanson, Mark V.
GC 7 GC 10 HCP 1 HCP 2 I 1 L 1 OG 1 RIP 4
SG 1

Lindenau, William
HCP 1 OG 1 RIP 4

Lindheimer, Robin
GC 5 HCP 1 HCP 2 HCP 4 L 1 RIP 4 TIM 1 WMM 1
WNSO 1

Lindsay, Bill
HCP 1

Lindstrom, Daniel
GC 8 GC 10 HCP 1

Link, Vicki
HCP 1 OG 1 RIP 4

Linn, Eva M.
HCP 1 OG 1 RIP 4

Linzer, Alan

Linzer, Alan
E 4 HCP 1 HCP 2 I 1 L 1 RIP 4 SG 1 TIM 1

Linzer, Alan
HCP 1 L 1

Linzer, Alan
L 1

Linzer, Alan
E 4 HCP 1 HCP 2 L 1 RIP 2 SG 1 TIM 1

Linzer, Alan
HCP 1 L 1

Linzer, Alan
HCP 1 L 1

Lipkowitz, Roy
HCP 1 OG 1 RIP 4

Lipp, Lee
GC 8 HCP 1 L 1 OG 1 WAT 3

Little, M.
HCP 1 RIP 4

Littleton / Kaufman, John / Maria Rosa
L 1 RIP 4 TIM 1 WAT 3

Liu, Yan
HCP 1 OG 1 RIP 4

Livermore, Donna
HCP 1 OG 1 RIP 4

Livingston, Mark
HCP 1 OG 1 RIP 4

Livingston, Mark

GC 8 HCP 1 L 1 OG 1 RIP 4 TIM 1

Lizaranzu, Alistair
GC 7 GC 8 L 1 OG 1 TIM 1

Lizaranzu, Alistair
E 1 E 2 E 4 F 2 GC 4 GC 10 HCP 1 I 1
L 1

Lizaranzu, Alistair
GC 8 I 1 L 1

Llamas, Maria
GC 8 GC 10 HCP 1

Lloyd, Richard
OG 1 RIP 4

Lobdell, Kym
GC 8 GC 10 HCP 1

Lodes, Tom
HCP 1 OG 1

Lodes, Tom
HCP 1 OG 1

Loeb, Bobbi
HCP 1 OG 1 RIP 4

Loewy, Erica
HCP 1 OG 1 RIP 4

Loewy, Evan
HCP 1 OG 1 RIP 4

Logan, Barbara
GC 7 TIM 6

Loh, Leo & Frances
HCP 1 OG 1 RIP 4

Lohr, Erik
HCP 1 OG 1 RIP 4

Lohse, Paul
F 1 GC 8 GC 15 HCP 1 RIP 4 WA 1 WAT 1

Lomba, Nathan S.
GC 7 GC 8 HCP 1 WAT 2

Long, Benjamin Andrew
HCP 1

Long, Carol
H 3 OG 1 RIP 4

Long, Donna
HCP 1 OG 1 RIP 4

Long, Kristine
HCP 1 L 1 MON 1 RIP 4 WNSO 1

Long, Kristine
HCP 1 L 1 MON 1 OG 2 RIP 1 RIP 4 WNSO 1

Long, Kristine
HCP 1 L 1 RIP 1 RIP 4 WNSO 1

Long, Kristine
GC a HCP 1 L 1 MON 1 RIP 1 RIP 4 WNSO 1

Long, Kristine
HCP 1 L 1 MON 1 RIP 4 WNSO 1

Longeot, Matthieu
P 1 TIM 1

Looney, Ian
GC 7 GC a HCP 1 L

Looney, Ian
HCP 1 OG 1 RIP 4

Looney, Ian
GC 7 GC a HCP 1 HCP 2

Lopey, Eva
GC 7 L 1 OG 1

Lopez,
HCP 1 L 1 MON 1

Lopez-Forrnent, Martha
HCP 1 OG 1 RIP 4

Lott, Donna Y.
HCP 1 OG 1 RIP 4

Louden, Mary
HCP 1 OG 1

Loughcan, Jo Anne K.
HCP 1 OG 2

Loughlin, Bob
GC 7 HCP 1. L 1

Loughran, Joanne
HCP 1 OG 1

Louis, James A.
GC 7 GC 10 | 1 L

Louviere, Thad
| 1 OG 1

Louviere, Thad
HCP 1 OG 1

Loux, Linda
HCP 1 OG 1

Loux, Linda
HCP 1 OG 1 RIP 4

Lovejoy-Grinnell, Bryn
GC 8 GC 10 HCP 1

Lowe, Ernest
HCP 1 OG 1 RIP 4

Lowe, Ernest & Grace
HCP 1 OG 1 OG 2 RIP 4

Lowe, Martha
HCP 1 OG 1 RIP 4

Lowe, Martha E.
HCP 1 OG 1 RIP 3

Lowenthal, Kathleen
HCP 1 OG 1 RIP 4

Lowery, Hunter
GC 8 HCP 3 L 1 OG 2 RIP 4 WAT 3 WMM 1

Lowery, Laura A.
HCP 1 OG 1 RIP 4

Lucas, David
HCP 1 RIP 4

Lucas, Debbie
GC 1

Lucchesi-Cook, Teresa
GC 8 HCP 1 L 1 OG 1 OG 2 SG 1 WAT 3 WNSO 1

Lucchesi-Cook, Teresa
GC 8 HCP 1 L 1 MON 1 OG 2 SG 1 TIM 1 WAT 3

Ludlow, Candice
GC 7 L 1

Ludlow, Candice
GC 7 HCP 1 L 1

Luecke, Damon
HCP 1 OG 1 RIP 4

Luftig, Dennis
HCP 1 OG 1 RIP 4

Luk, Men-Ching
HCP 1 OG 1 RIP 4

Lukering, Stan
HCP 1 OG 1

Lukich, Tom
GC 7 GC 10 | 1 L 1

Lukim, Stan
HCP 1 OG 1

Lundberg, Mesa
HCP 1 L 1 OG 2 TIM 1 WAT 3

Lundberg, Mesa
GC 7 GC 8 L 1 OG 2 TIM 1

Lundberg, Vernell
GC 14

Lurard, Elizabeth
GC 7 OG 1

Lux, Thomas
E 1 HCP 1 HCP 5 L 1 OG 2 RIP 4 TIM 1 TIM 8
VEG 2

Lux, Thomas
E 1 HCP 1 HCP 5 L 1 OG 2 TIM 1 TIM 4 TIM 8
VEG 2

Luxon, Tai
GC 8 HCP 2 L 1 OG 1 OG 2 RIP 4 WAT 3 WAT 6
WNSO 1

Lydgate, Bill
F 1 GC 5 HCP 1 RIP 1 TIM 1

Lydon, Catherine
HCP 1 OG 1 RIP 4

Lynott, John
HCP 6

Lyons, Derek
HCP 1 I 1 OG 1 RIP 4

MILLER, JIM
GC 8 HCP 1 RIP 4 TIM 3 WAT 4

Mabanga, Melanie
OG 1 P 1 WAT 2

Mac Gallor, Muriel
HCP 1 OG 1 RIP 4

MacDermott, Beatrice
I 1 L 1

MacDermott, Beatrice
GC 7 HCP 1 I 1 L

MacDonald, B.C.
L 1 P 1

MacDonald, William C.
HCP 6

MacDonald, William C.
HCP 6

MacKallor, Muriel
HCP 1 OG 2 RIP 4

MacPhail, Samantha
GC 8 HCP 1

MacPhail, Samantha
HCP 1

Macabee, Ken
HCP 1 OG 1 TIM 6

Machado, Mercedes
GC 8 GC 10 HCP 1

Machen, Ernest
HCP 1 OG 1 RIP 1

Maciejewski, Gloria A.
GC 9 HCP 1 OG 1

Mackey, Andrew
HCP 1

Mackey, Anja
HCP 1 OG 1 RIP 4

Mackey, Neil
OG 1 RIP 4

Mackey, Robert & Lisa
HCP 1 HCP 3 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 2
WAT 6 WMM 1

Mackin, John
E 4 GC 8 GC 10 HCP 1 L 1 TIM 1

Mackin, John
E 4 GC 7 HCP 1 I 1 L 1

Mackin, M. John
HCP 1

Mackwell, Bill
HCP 1 P 1

Macy, Gary
HCP 6

Madrone, Devlin
HCP 1 L 1 RIP 4 TIM 1 WAT 2 WNSO 1

Madrone, Rose
E 3 GC 7 HCP 1 L 1 SG 1 SG 4

Madsen, Nathan
E 4 F 1 F 2 GC 7 H 4 HCP 2 I 1 L 1
OG 1 RIP 4 SG 7 WAT 2

Madsen, Nathan
F 1 GC 10 H 2 HCP 1 I 1 L 2 RIP 4 SG 1
TIM 1 TIM 3 WAT 4 WAT 5

Madsen, Nathan
F 1 GC 10 H 2 HCP 1 HCP 8 L 1 RIP 4 WAT 4
WAT 5

Maedbee, Karen
HCP 1

Maertz, Bernice C.
GC 8 GC 10 HCP 1 L 1 OG 1

Maezono, Jan
HCP 1 OG 2 RIP 4

Magana, Gabriel
HCP 1 OG 1 RIP 4

Maguire, John & Mary Lee
GC 2 HCP 1

Maguire-Lennings, Fiona
HCP 1 OG 1 TIM 1

Mahoney, Gene
GC 8 GC 10

Mahoney, Kathleen
HCP 1 OG 1 RIP 4 RIP 5

Mahoney, Kathleen
HCP 1 OG 1 RIP 4 RIP 5

Mahoney, Kathleen
GC 8 OG 1 RIP 4 RIP 5

Mahoney, Robert J.
HCP 1 RIP 4

Mahoney, Robert J.
HCP 1 OG 1 RIP 4

Mahony, Gwyn
HCP 1

Mahver, Robin
GC 7 WNSO 1

Mahver, Robin
E 4 GC 10 HCP 2 HCP 3 L 1 RIP 4 SG 1 TIM 1
TIM 5 WAT 2 WAT 3 WMM 1 WNSO 1

Maila, Christopher
HCP 1 RIP 4

Maize, Dave
HCP 1 RIP 1 RIP 4 RIP 7

Makaus, Mary
L 1 MON 1 RIP 4

Makaus, Mary
HCP 1 MON 1 RIP 4 TIM 6

Malanga, Sally

OG 1

Maliver, Robin
GC 5 GC 8 HCP 1 HCP 2 L 1 TIM 1 WAT 3

Mallison, Stacey
GC 5 HCP 1 OG 1

Mallitt, Jane
GC 5 GC 8 H 4 HCP 1 HCP 2 HCP 4 L 1 TIM 8
WAT 3

Mallow, Dawn
GC 8 HCP 1 L 1 WAT 6

Malone, Katherine
HCP 1 OG 1 RIP 4

Malork, John E.
HCP 1 OG 1 RIP 4

Mancuso, Michele
HCP 1 OG 1 RIP 1 RIP 4

Maness, Liza
GC 8 GC 10 HCP 1 L 1

Mangelsdorf, Robert
HCP 1 OG 1 RIP 4

Marburg, Sandra Lin
GC 8 HCP 1 WMM 1

Marburg, Sandra Lin
GC 8 HCP 1 HCP 3 MC 1 P 1

Marcellino, Sara
HCP 1 OG 1

Margolin, Katherine L.
HCP 1 OG 1 RIP 4

Marion, Bruce
HCP 1 OG 1 RIP 4

Marish, Alex & Hadassa
HCP 1 L 1 L 2 OG 2 TIM 1 WAT 3

Marish, Elad
HCP 1 L 1 L 2 OG 2 TIM 1 WAT 3

Marish, Flad
HCP 1 | 1

Marish, Ofir
HCP 1 L 1 L 2 OG 2 TIM 1 WAT 3

Markeloff, Robert
GC 8 GC 10 HCP 1

Markham, Brenda
HCP 1 HCP 2 L 1 OG 1 TIM 1 WAT 3

Markham, Brenda
HCP 1 HCP 3 L 1 TIM 1 WAT 6 WMM 1

Marks, Edith
GC 10 HCP 1

Marks, Wendy
HCP 1 OG 1 RIP 4

Marler, Christopher
HCP 1 OG 1 RIP 4

Marlovitz, Linda
H 2 HCP 1 HCP 2

Marondel, Dorina
F 1 SG 6 WAT 1

Marquis, Louise
F 1 HCP 1 HCP 5 RIP 1 SG 1

Marrs, Penny A.
HCP 1 OG 1 RIP 4

Marrs, Thomas R.
HCP 1 OG 1 RIP 4

Marrs, Jr., Leo Richard
HCP 1 OG 1 RIP 4

Marrus, Elona Michele
OG 1 RIP 4

Marsh, Lynn
OG 1 P 1

Marsh / Lemer, Jesse / Jeremy
OG 1

Marshall, Ana W.
GC 9 OG 1

Marshall, Dolly
GC 8 GC 10 HCP 1

Marshall, Taye G.
HCP 1 OG 1 RIP 4

Marshall-Edwards, Virginia
GC 7 HCP 1 RIP 4

Marston, Jodie-Jean
GC 8 HCP 1 HCP 2 OG 1 WAT 6

Marston, Jodie-Jean
GC 8 HCP 2 OG 1 WAT 3

Marta, Dick
HCP 1 OG 1

Martien, Jerry
GC 7 HCP 1 HCP 2 HCP 4 RIP 7 SG 7 TIM 1 WAT 1
WAT 3

Martien, Jerry
HCP 1 HCP 2 OG 1 RIP 4 SG 7

Martin, Allison
HCP 1 OG 1 RIP 4

Martin, Carol
HCP 1

Martin, Debra Ellen
HCP 1 OG 1 RIP 4

Martin, Erin
L 1 OG 1 OG 2 RIP 4 SG 1 WAT 6

Martin, Glenn H.
GC 8 HCP 1 HCP 2 L 1 OG 1 OG 2 RIP 4 SG 1
TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Martin, Jay
HCP 1 OG 1

Martin, Michele
GC 8 GC 10 HCP 1

Martin, Randy
GC 8 GC 10 HCP 1

Martin, Stephen
HCP 1 L 1 OG 2 RIP 4 TIM 1

Martlert, May
HCP 1 OG 1 RIP 4

Marzak, Debra
GC 13 HCP 1 VEG 2

Marzak, Debra L.
HCP 1 OG 1

Marzak, Jess R.
GC 13 HCP 1 VEG 2

Marzak, Jess R.
HCP 1 OG 1

Marzons, Jan
HCP 1 OG 1 RIP 4

Mascott, et al., Richard
E 1 HCP 1 TIM 5

Maslenikov, Lorna
GC 10 HCP 1 OG 1

Mason, Bruni
HCP 1 OG 1 RIP 4

Mason, Helen
HCP 6

Mason, Joann
HCP 1 OG 1 RIP 4

Mason, Jcann
HCP 1 OG 1 RIP 4

Mason, Lewis
HCP 1 OG 1 RIP 4

Mason, Nancy D.
HCP 1 OG 1 RIP 4

Mason, Richard
HCP 1 RIP 4

Mathieu, Marc
HCP 1

Matsumoto, Janis
HCP 1 OG 1 P 1 WMM 1

Matsumoto, Janis
HCP 1 OG 1

Matteson, Nanou
HCP 1 OG 1 RIP 4

Matteson, Teale
HCP 1 OG 1 RIP 4

Matthieu, Marc
HCP 1

Matyja, Sharon B.
HCP 1 OG 1 RIP 4

Mauldin, Charla
HCP 1 OG 1 RIP 4

Mauldin, Charla Jean
HCP 1 OG 1 RIP 4

Mauldin, Rita
HCP 1 OG 1

Maurer, Janet
HCP 1

Maurer, Jeff
GC 5 HCP 1 L 1 OG 1 RIP 4 SG 6 SG 7

Maurer, Jeff
HCP 1 L 1 OG 1 RIP 4 RIP 7 SG 6 WAT 6

Maurer, John
HCP 1 I 1 L 1 TIM 1

Maurer, John
GC 7 L 1 TIM 1

Maurer, Joseph
HCP 1 OG 1 RIP 4

Mauz / Pyle, Barbara / Mildred
HCP 1 OG 1 RIP 4

Maxwell, Christiane
OG 1 TIM 6

Maxwell, Christiane
E 4 HCP 1 OG 1 TIM 6

Maxwell, David F.
HCP 1 OG 1

May, Aaron
OG 1

May, Jacqueline B.
GC I o HCP 1

May, Karl
GC 10

Mayeda, Kevin
HCP 1 OG 1

Mayerchild, Susan
HCP 1 OG 1 RIP 4

Mayoff, Debra
HCP 1 OG 2 TIM 1

Mc Clain, Anne
HCP 1 OG 1 RIP 4

McAbery / Bunker, John / Gretchen
GC 8 HCP 1 OG 2 RIP 4 SG 1 SG 6 WAT 3

McAbery / Bunker, John / Gretchen
GC 8 HCP 1 HCP 2 RIP 4 SG 1 SG 6 WAT 3

McAndrew, Loretta
HCP 1 OG 1 WAT 2 WAT 6

McBeth, Rob
HCP 6

McCabe, Carol E.
GC 7 GC 10 I 1 L

McCallister, John Douglas
HCP 1 OG 1 RIP 4

McCarthy, Ann
HCP 1 OG 1 RIP 4

McCarthy, Brian W.
GC 8 GC 10 HCP 1

McCartney, David
HCP 6

McCartny, Melissa
GC 5 GC 8 HCP 1 HCP 2 L 1 RIP 4 TIM 1 WAT 3
WMM 1 WNSO 1

McCarty, Michael
HCP 1 OG 1 RIP 4

McCarty, Michael
HCP 1 OG 1 RIP 4

McCarvill, William T.

HCP 1 OG 1 RIP 4

McCaslin, Sharon
HCP 1 L 1 OG 1 RIP 4

McClain, Kate
GC 5 GC a HCP 1 L 1 TIM 1

McClung, Bonnie
HCP 1 OG 1

McClure, Daniel J.
GC 13 HCP 1 HCP 2 HCP 5 I 1 L 1 MON a OG 2
RIP 4 SG 3 WAT 2 WAT 3 WAT 4 WMM 1 WNSO 1

McClure, William & Rebekah
HCP 1 OG 1 RIP 4

McCollom, Jerome
HCP 4 L 1 RIP 1

McCord, Fred
HCP 1 RIP 4

McCord, Fred
HCP 1 RIP 4

McCowen, John
E 4 GC 10 GC 11 H 4 HCP 1 HCP 2 I 1 L 1
OG 2 SG 1 TIM 1 VEG 2 WAT 5

McCoy, Brian
GC 9 OG 1

McCoy, Kathleen
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

McCoy, Kathleen
HCP 1 HCP 3 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 2
WAT 6 WMM 1

McCoy, Kathleen
HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 6 WMM 1

McCracken, Maryon
HCP 1 OG 1

McCulley, Elizabeth
GC a HCP 1 L 1 RIP 7 WMM 1

McCulloch, T.
HCP 1 OG 1 RIP 4

McCutchen, Jr, Robert
HCP 6

McDermott, Mike
HCP 1 OG 1

McDonald, Doug
HCP 1 OG 1

McDonald, Heather
HCP 1

McDonald, Ken A.
HCP 1 OG 1

McDonald, Michael D.
HCP 1 OG 1 RIP 4

McDonald-Smith, Kyle
HCP 1 OG 1 RIP 4

McDonough, Richard
HCP 1

McDowell-O'Connell, Susan
GC 7 HCP 1 HCP 2 L 1 OG 2 RIP 4 TIM 1 WAT 2

McEldowney, Victoria
HCP 1 OG 1 RIP 4

McElroy, M.A.
HCP 1 HCP 2 L 1 OG 1 OG 2

McFalls, Georgina
HCP 1 OG 1 RIP 4

McGee, Stone & Marie
GC 8 GC 10 HCP 1

McGeehan, Carol
GC 8 GC 10 HCP 1 OG 1

McGilvray, Patrick
HCP 1 OG 1 RIP 4

McGinnis, Danita
HCP 1 OG 1

McGowan, Daniel
HCP 1 RIP 5 SG 6

McGowen, Daniel
GC 8 HCP 1 OG 1

McGuire, Maree
GC 2 GC 10 HCP 1 HCP 2 L 1 OG 2 SG 1 TIM 1

McGurk, Stacey
GC 8 HCP 1 HCP 4 P 1 TIM 1

McGurk, Stacey
HCP 1 OG 2 TIM 5

McHenry, Mildred
HCP 1 OG 1

McIlmore, George
HCP 1 OG 1

McInnes, Joan
HCP 1 OG 1

McIntyre, Larry
GC 7 GC 10 I 1 L 1

McKay, Tim
E 1 GC 7 HCP 1 L 1 RIP 7 SG 6 WAT 2 WAT 4

McKay, Tim
GC 7 HCP 1

McKay, Tim
F 1 GC 10 HCP 1 HCP 4 L 1 MON 1 RIP 4 RIP 5
RIP 7 SG 6 WAT 4 WAT 6

McKean, Ronald
F 1 F 5 FACT 1 GC 5 GC 9 HCP 1 HCP 4 I 1
L 1 MON 1 OG 2 RIP 1 RIP 4 RIP 5 RIP 6 SG 1
SG 6 SG 8 TIM 1 TIM 8 VEG 2 WAT 2 WAT 4 WAT 5

McKenna, Christie
HCP 1 OG 1 RIP 4

McKenny, Kevin
HCP 6

McKinney, Tom
HCP 1 OG 1

McKinsey, Jason
HCP 1 OG 1 RIP 4

McLaughlin, Colette Marie
GC 8 HCP 1

McLaughlin, Katy
HCP 1 L 1 OG 1 OG 2 SG 1 TIM 1

McLaughlin, Michael
GC a GC 10 HCP 1

McLellan, Joyce S.
HCP 1 OG 1 RIP 4

McLellan, Thomas
HCP 1 OG 1 RIP 4

McLoughlin, Eleonor
HCP 1 OG 1

McMahon, Kay
HCP 1 L 1

McManis, Andrea L.
OG 1 RIP 4

McMaster, Jerome D.
GC 7 GC 10 I 1 L 1

McMillan, Cara
HCP 1 I 1

McMillan, et al., Suzanne
OG 2 RIP 4

McMorrow, Christine
GC 5 GC a HCP 1 HCP 2 HCP 3 L 1 OG 2 SG 3
TIM 1 WAT 6 WMM 1 WNSO 1

McNamara, Chris
GC a HCP 1 L 1 OG 2

McNamee, Christina
H 4 HCP 1 L 1 OG 1

McNamee, Thomas
HCP 1 OG 1 RIP 4

McNeil, Shannon
GC a RIP 6 WAT 2 WAT 5 WAT 6

McNelly, Sheila
HCP 1 OG 1

McNerney, John T.
HCP 1 OG 1

McQueeney, Claire

GC 8 HCP 1

Mclean, Sienna
HCP 1 OG 1 RIP 4

Meade, Carey
GC 7 GC 8 HCP 1 I 1 L 1 OG 1 OG 2 RIP 4

Meade, Carey
GC 7 GC 8 HCP 1 OG 1 RIP 4

Meagher, Kathleen
GC 8 GC 10 HCP 1

Mecking, Esther
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Medina, William
HCP 1 L 1 OG 1 OG 2 RIP 1 RIP 4 SG 1 WAT 6
WMM 1

Medwick, Joanna
HCP 1 OG 1 RIP 4

Medwick, Joanna
OG 1 RIP 4

Meeriolf, Mary Jo
E 4 GC 10 HCP 2 HCP 3 L 1 RIP 4 SG 1 TIM 1
TIM 5 WAT 2 WAT 3 WMM 1 WNSO 1

Mefford, W.
HCP 1 OG 1

Meggs, Jason
GC 7 H 1 H 2 HCP 1 HCP 2 L 1 OG 2 SG 1
WAT 2 WAT 3 WMM 3

Mehl, et al., Hillary
GC 1 GC 8 OG 2

Mehose, Jane
HCP 1

Mehose, Jane
GC 10 HCP 1 HCP 3

Meidus, Paul
HCP 1 OG 1 RIP 4

Meier, Joe
HCP 1 OG 1 RIP 4

Meislin, Barbara J.
GC 8 HCP 1 L 1 OG 1

Mel, Marc
HCP 1

Mel, Marc
HCP 1 OG 1

Melendez, Carissa
F 1 HCP 1

Melendy, Donny
GC 7 HCP 1 OG 1

Melrose, Jane
GC 8 HCP 1

Melsh, Margaret
HCP 1 OG 1 RIP 4

Menapace, Julia
GC 9 HCP 1 OG 2

Menapace, Julia
GC 9 GC 10 HCP 1 L 1 OG 1

Menapaee, Julia
GC 9 HCP 1 L 1 OG 1

Mendiola, Linda
HCP 1 OG 1 RIP 4

Mendoza, Gloria M.
HCP 1 L 1 L 2 OG 2 TIM 1 WAT 3

Mendoza, John G.
MON 1

Mendoza, Melissa
HCP 1

Menehan, Karen
I 1 OG 1 RIP 4 WAT 2

Mennen, Peter & Carlene
F 1 F 2 OG 1 RIP 7 RIP 8 RIP 9 RIP 10 SG 1
SG 6 WA 1 WAT 1 WAT 2 WAT 4

Merkel. Victor C.

GC 7 GC 10 | 1 L 1

Merlerhill, Megan
OG 1 RIP 4

Merrill, Dan
HCP 6

Merrill, Dan
HCP 6

Merrill, Tom
GC 7 GC 10 | 1 L 1

Merritt, Bill
E 4 GC a HCP 1 HCP 2 L 1 OG 2 RIP 4 TIM 1
WAT 3 WMM 1 WNSO 1

Merritt, Bill
E 4 GC a HCP 2 L 1 RIP 4 WAT 3 WMM 1 WNSO 1

Mery, Loretta
HCP 1

Meserve, Osha
HCP 1 OG 1 RIP 4 WAT 2

Messika, Lise
GC 7 GC 9 OG 1

Meyer, Darroll
E 5 HCP 6

Meyer, Dorothy
HCP 1 TIM 1

Meyer, Dorothy T.
E 4 HCP 1

Meyerink, Dorothy D.
GC 10 GC 13 HCP 2 OG 2 TIM 1

Meyers, Georgia
GC a GC 10 HCP 1

Micale, Vincent J.
HCP 6

Michael, Phoenix
HCP 1 OG 1

Michael, Phoenix
GC 10 HCP 1 L 1 OG 1

Michaeledes, Jennifer
E 5

Michaels, Craig
GC 7 GC a HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 6
TIM 1 WAT 3 WMM 1

Michaels, Craig
GC a HCP 1 L 2 MON 1 OG 2 RIP 6 SG 6 TIM 1
WAT 3 WAT 6 WMM 1

Michaels, Craig
GC a HCP 1 L 1 MON 1 RIP 4 SG 1 TIM 1 WAT 3
WAT 4 WAT 6 WMM 1

Michaels, Craig
GC 5 GC a HCP 1 L 1 MON 1 RIP 5 SG 6 TIM 1
WAT 3

Michaels, Gerald & Carolyn
HCP 1 OG 1 RIP 4

Michaels, Patrick
OG 1

Michaelson, Paul & Marilyn
HCP 1 OG 2

Miadleton, Ann
HCP 1 OG 1

Midkiff, Gene A.
GC 7 GC 10 I 1 L 1

Mikesell, Paul
HCP 1 OG 1 RIP 4

Mikesell, Paul J.
HCP 1 OG 1 RIP 4

Milbourne, Donna
GC a GC 10 HCP 1

Miles, Andrew
HCP 6

Miller, Adam
H 4 HCP 1 HCP 2 L 1 OG 1 RIP 4 SG 1 TIM 5
WAT 3

Miller, Adam
F 3 GC 13 GC 14 HCP 1 L 1 MON 1 MON 2 RIP 3
RIP 6 WAT 4

Miller, Adam
GC 4 GC 8 H 4 HCP 1 L 1 P 1 TIM 1 WAT 3
WMM 3

Miller, Adam
A 2 F 3 GC 7 GC 13 HCP 1 MON 2 RIP 3 RIP 4
SG 7

Miller, Alice
HCP 1 OG 1 RIP 4

Miller, Alice M.
OG 1 RIP 4

Miller, Bonnie
HCP 1 RIP 4

Miller, Cathy
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WNSO 1

Miller, Corey
HCP 1 OG 1 RIP 4

Miller, Cory
OG 1

Miller, James M.
HCP 1 OG 1

Miller, Jane E.
HCP 1 OG 1 RIP 4

Miller, Jim
GC 12 OG 1 RIP 4 WAT 4

Miller, Jim
HCP 1

Miller, Karen
HCP 1 OG 1

Miller, Karen
HCP 1 OG 1

Miller, Katyssa
H 2 HCP 1 L 1

Miller, Ken
E 4 GC 1 GC 8 GC 10 HCP 1 I 1 RIP 4 WAT 5

Miller, Kimberly
HCP 1

Miller, Larry
RIP 4 RIP 9 TIM 3

Miller, Linda
HCP 1

Miller, Narmi
HCP 1 OG 1

Miller, Pamela
GC 7 GC 13 GM 1 H 4 HCP 1 RIP 3 RIP 4 RIP 5
TIM 1

Miller, Ralph W.
HCP 1 OG 1

Miller, Timothy
HCP 1 OG 1

Miller, Tina M.
GC 8 GC 10 HCP 1 L 1 OG 1

Miller, William
HCP 1 TIM 1

Miller, Jr., Michael H.
GC 8 HCP 1 L 1 OG 1

Miller-Freeman, Leah
GC 5 HCP 1 L 1 OG 1 TIM 1

Miller-Wolf, Lorraine
E 1 HCP 1 HCP 2 L 1 RIP 4 SG 6 TIM 1

Miller-Wolf, Lorraine B.
HCP 1 HCP 2 L 1 MON 1 RIP 4 SG 6 TIM 1

Millis, Sean
HCP 1 OG 1

Millison, Martha
HCP 1 OG 1 RIP 4

Mills, Jean
HCP 1

Mills, Oliver

H 2 H 4 HCP 1 L 1 OG 1 RIP 2 RIP 3 RIP 4
RIP 5 SG 1 WAT 2

Mills, Oliver & Randi
H 2 HCP 1 L 1 OG 1 RIP 1 RIP 5 RIP 8 SG 1
SG 3 WAT 2

Mills, Oliver S.
H 2 H 3 HCP 1 L 1 OG 1 OG 2 RIP 4 RIP 8
SG 1 SG 3 WAT 2 WNSO 1

Mills, Sean
OG 1

Milton, Brian
GC 2 GC 8 HCP 1 HCP 2 L 1 OG 1 WAT 4

Milton, Hal & Sonya
GC 8 GC 10 HCP 1 L 1 OG 1

Mines, Anaka
GC 8 HCP 1 L 1 OG 2 WAT 3

Mines, Anaka
GC 8 L 1 OG 2 WAT 3

Mink, Katie
HCP 1 L 1 TIM 1 WAT 3

Mink, Katie
HCP 1 OG 1 RIP 4

Minkus, Kenneth
HCP 1 OG 1 RIP 4

Minnix, John S.
GC 7 GC 10 I 1 L

Minon, Mindy Martin
HCP 1 OG 1 RIP 4

Minor, Will
HCP 1 OG 2

Minor, Will
HCP 1 OG 1

Mione, Nicholas
HCP 1 L 1 OG 1 OG 2 RIP 4 SG 3 WAT 6

Mione, Nicholas
HCP 1 L 1 OG 2 RIP 4

Miranda, Erika
GC 9 HCP 1 L 1 P 1

Mirviss, Dick
HCP 1 OG 1 RIP 4

Mirviss, Marisa
HCP 1 OG 1 RIP 4

Mirviss, Suzanne
HCP 1 OG 1 RIP 4

Misenko, Tim
HCP 1 OG 1

Misiuk, Thomas A.
HCP 1 OG 1

Mitchell, Aaron
OG 1 RIP 5 WAT 2

Mitchell, Aaron
HCP 1 L 1

Mitchell, Bruce
HCP 1 OG 1 RIP 4

Mitchell, Bruce
GC 8 HCP 1 OG 1 RIP 4

Mitchell, Chris
HCP 1 OG 1

Mitchell, David R.
H 3 HCP 1 L 1 L 2 RIP 4 SG 1 TIM 3 WMM 1
WNSO 1

Mitchell, Donna
OG 1 P 1

Mitchell, John
HCP 1 OG 1 RIP 4

Mitchell, John R.
HCP 1 OG 1 RIP 4

Mitchell, Paul, Sylvia, Stephe
HCP 1

Mitchell et al., P.
E 1 GC 5 GC 8 HCP 1 HCP 2 HCP 3 L 1 OG 2
RIP 7 SG 6 TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Mitrovic, Borko
E 1 HCP 1 RIP 10

Mix, Samuel
GC a L 1 TIM 1

Mix, Samuel
GC 7 GC a HCP 1 L 1

Mizani, Najah
GC a HCP 1 HCP 2 RIP 7 TIM 1

Mochids, Kevin
HCP 1

Mock, Jean M.
F 1 F 2 RIP 1 SG 6 WA 1 WAT 1 WAT 4

Modi, Pulin
GC 12 HCP 1 L 1 TIM 1 WMM 1

Modic, Jessie
GC 7 HCP 1 L 1 OG 1 OG 2 TIM 6

Moe, Laura
HCP 1 OG 1 RIP 4

Moe / Kleinman, Laura / Karen
HCP 1 OG 1 RIP 4

Moffat, Lorna
HCP 1 TIM 3 TIM 8 TIM 10 WAT 4

Mohamed, Nancy J.
HCP 1 OG 1

Mohammed, Nancy
HCP 1 OG 1 RIP 4 TIM 3

Mohammed, Nancy
OG 1

Mohr, Doug
HCP 1 OG 1

Moll, Adrienne
HCP 1 OG 1 RIP 4

Molloy, Molly
GC 5 GC a GC 9 L 1 P 1

Moloney, Susan W.
HCP 1 L 1 OG 2

Moloney, Susan W.
HCP 1 L 1 OG 2 WMM 1

Moltzen, Judith 0.
HCP 1 OG 1 RIP 4

Moncrief, Amber
GC 14

Monroe, George A.
HCP 1 L 1 OG 1 RIP 4

Monroe, George A.
HCP 1 L 1 OG 1 RIP 4

Montagu, Dominic
HCP 1 RIP 4

Montalbin, Paco
GC 7 GC 8 HCP 1

Montalbin, Paco
GC 7

Montgomery, Ed & Maryalice
HCP 1 L 1 MON 1 RIP 4

Montgomery, Ed & Maryalice
HCP 1 L 1 MON 1 RIP 4

Montgomery, Richard
H 4 HCP 1 L 1 RIP 4 SG 1

Moon, Lesli
HCP 1 OG 1 RIP 4

Moondy, Taun
GC 8 HCP 1 SG 1 TIM 3

Moondy, Taun
GC 7 GC 8 H 2 HCP 1 L 1 OG 1 OG 2 RIP 4
SG 1 TIM 3 WAT 2

Moondy, Taun
GC 8 HCP 3 L 1 P 1 RIP 4 SG 1 TIM 1 TIM 3
WAT 2

Mooney, Barbara
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Moore, Alan
L 2

Moore, Bruce
HCP 1 OG 1 RIP 1

Moore, Giles
HCP 1 OG 1

Moore, Glennis
GC 7 GC 10 HCP 1 | 1 L 1

Moore, Jason
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Moore, Julie
HCP 1 OG 1

Moore, Ken
HCP 1 OG 1

Moore, Michelle
HCP 1 OG 1 RIP 4

Moore, Michelle
HCP 1 OG 1 RIP 4

Moore, Patricia
HCP 1 OG 1 RIP 4

Moore, Robert V.
GC 8 GC 10 HCP 1

Moore, Shannon C.
GC 5 GC 8 HCP 1 L 1 OG 2 TIM 1 WNSO 1

Moore, Thomas H.
GC 8 GC 10 HCP 1

Moore, Tricia
HCP 5 OG 1 RIP 4

Moorhead, Carol Ann
HCP 1 L 1

Moorman / DeMarco, Barbara / Louise
HCP 1 L 1 OG 2WMM 1

Mor, Edo
HCP 1 MON 1 RIP 4

Mor, Edo

HCP 1 L 1 RIP 4 SG 3

Morace, Marjorie J.
GC 8 GC 10 HCP 1

Moradi-Long-Zwicki, Marie Louise
GC 8 GC 10 HCP 1 L 1 OG 1

Moran, Jr., Charles V.
HCP 1 OG 1 RIP 4

Morawitz, Terry
HCP 1 OG 1 RIP 4

Moray, Ian
HCP 1 L 1 OG 1 OG 2 RIP 7 SG 1 WAT 3

Moray, Susan
HCP 1 L 1 OG 2 RIP 7 SG 1

Moref, Barbara
GC 1 HCP 1

Morel, Barbara
HCP 1 OG 1 P 1

Moreland, Julie
GC 8 HCP 1 TIM 1

Morey, Edward
GC 8 GC 10 HCP 1

Morgan, Darca
OG 1 RIP 7 SG 1 SG 6 WAT 3

Morgan, Greg
HCP 1 OG 1 RIP 4

Morgan, Helen C.
OG 1 RIP 4

Morgan, Helen C.
HCP 1 I 1 OG 1 RIP 4

Morgan, Jane
GC 10 HCP 1 HCP 2 L 1 WAT 5

Morgan, Kathy
OG 1 RIP 4

Morgan, Lee
GC 7 GC 9 OG 1

Morgan, Octavia
HCP 1 OG 1 RIP 4

Morgan, Octavia
HCP 1 OG 1 RIP 4

Morgan, Richard A.
HCP 1 OG 1 RIP 4

Morgan, Sherryl
GC 8 HCP 1

Morgan, Sherryl
HCP 1

Morgan, Sylvia E.
HCP 1 OG 1 RIP 4

Morhidh, Kevin
HCP 1

Moriarty, Elizabeth
HCP 1

Morley, Martha
HCP 1

Morley, Martha
HCP 1 OG 1

Morley, Martha
HCP 1

Morley, Martha
HCP 1

Morris, Evie
HCP 1 OG 1

Morris, Jim
HCP 1 HCP 2 I 1 L 1 L 2 OG 2 RIP 4 SG 1
TIM 1 WMM 1 WNSO 1

Morrison, April
HCP 1 P 1 SG 1 TIM 3

Morrison, J. Robert
GC 8 GC 10 HCP 1

Morrison, Mary Lou
GC 10 HCP 1 OG 1

Morrisseau, Jamie

HCP 1 OG 1 RIP 4

Morrisseau, Rob
HCP 1 OG 1 RIP 4

Morry, David W.
GC 8 HCP 1 L 1 OG 1 RIP 4

Morry, James
E 4 F 1 GC 8 HCP 1 L 1 OG 2 RIP 4 SG 1
SG 3 SG 6 VEG 2 WMM 1 WNSO 1

Mortola, Carolyn J.
HCP 1 OG 1 RIP 4

Morton, Seth W.
OG 1

Mosel, Doug
E 4 GC 15 HCP 1 L 1 OG 2 TIM 1

Mosel, Doug
A 1 E 4 GC 2 GC 5 GC 7 HCP 1 I 1 RIP 4
TIM 1

Moseley, John R.
HCP 1 OG 1 RIP 4

Moseley, John R.
GC 7 HCP 1 OG 1 RIP 4

Moser, Alison
HCP 1 OG 1

Moser, Alison
HCP 1 OG 1

Mosqueda, Anna R.
E 4 F 1 F 5 HCP 2 HCP 5 HCP 7 L 1 MON 1
OG 1 RIP 4 SG 1 TIM 6 WA 1 WAT 1 WMM 1 WNSO 1

Moss, Monica H.
GC 5 GC 7 GC 9 HCP 1 OG 1

Moss, Paul
HCP 1 OG 1

Moss, et al., Larry
HCP 1

Mott, James M.
HCP 1

Mott, Stephanie
H 4 HCP 1 RIP 7 SG 1 TIM 1

Mottershead, Andre F.
HCP 1 OG 1 RIP 4

Mottershead, Laura
GC 7 GC 8 HCP 1 OG 1

Mouarty, Elizabeth
HCP 1

Movat, Robin
HCP 1 OG 1 RIP 4

Moverley, Lisa
HCP 1 OG 1

Muenzen, Joseph
HCP 1 OG 1 RIP 4

Muhammad, Terres A.
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1
WAT 3 WMM 1 WNSO 1

Muhrlein, Erika
HCP 3 L 1 WAT 3

Muior, Will
HCP 1

Muir, Kathryn
HCP 1 OG 1 RIP 4

Muirhead, Bruce
RIP 4

Mulcahy, Michael
GC 7 HCP 1 OG 1

Mulcahy, Michael Scott
GC 7 HCP 1

Muller, J. C.
GC 8 GC 10 HCP 1

Mullerleile, Steve
GC 7 GC 10 1 L

Mullins, Diane
HCP 1 OG 1 RIP 4

Mullins, Star

GC 1 L 1

Mulrane, Ann
GC 8 HCP 1 OG 1

Mulroy, Quinn
GC 7 HCP 1 L 1 OG 1

Munnecke, Marchel
GC 10 H 2 HCP 1 OG 1 SG 6 TIM 1 TIM 3

Munther, Gunnar
GC 7 GC 10 I 1 L 1

Munther, Ruth
GC 7 GC 10 I 1 L 1

Murcia, Anamaria Nina
H 4 HCP 1 OG 1 RIP 4

Murdock, Karen
E 4 FACT 1 GC 8 HCP 1 HCP 2 L 2 MON 1 OG 2
RIP 4 TIM 1 WAT 3 WNSO 1

Murdock, William M.
HCP 3 L 1 RIP 1 TIM 1

Murillo, Pedro
OG 1 P 1

Murphy, Collin G.
HCP 1 HCP 5 RIP 1 SG 1 WMM 1

Murphy, Dennis D.
HCP 6

Murphy, Duane
GC 7 GC 10 I 1 L 1

Murphy, Edward
GC 7 GC 10 I 1 L 1

Murphy, Margaret
OG 1 RIP 4

Murphy, Margaret
OG 2 RIP 4

Murphy, P.
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Murray, Alicia
HCP 1 OG 1 RIP 4

Murray, Bill & Susan
GC 7 GC 9 OG 1

Murray, K.
GC 9 HCP 1

Murray, K.
GC 9 HCP 1 L 1

Murray, Mary Ann
HCP 1 L 1 MON 1

Murray, Mary Ann
GC 7 GC a HCP 1 HCP 3 L 1 MON 1

Murrell, Erin C.
OG 1 RIP 4

Murrell, Erin C.
HCP 1 OG 1 RIP 4

Mushica, Jane
E 4 HCP 1 L 1 OG 1 TIM 3

Mustard, Dione
RIP 7

Muyllaert, Dorothy
HCP 1 OG 1

Muzinich, Jean
HCP 1 OG 1 RIP 4

Muzinich, Jean
HCP 1 OG 2 RIP 4

Muzinich, Z.J.
HCP 1 OG 2 RIP 4

Muzinich, ZJ
HCP 1 OG 1 RIP 4

Myers, Ann
HCP 1 OG 1 RIP 4

Myers, Leland & Sydney
HCP 6

Myers, Marianne
OG 1 RIP 4

Myers, Paul
GC a GC 10 HCP 1

Myrick, Steve
HCP 6

Myrick, Steve
E 5 HCP 6

Na, Monica
GC 8 HCP 1 RIP 4 TIM 1 WMM 1

Nace, Elnor M.
GC 8 GC 10 HCP 1

Nachenberg, Judy
OG 2 WAT 3

Nachtwey, Kate
P 1 TIM 1

Naditch, Leslie
GC 5 GC 8 GC 10 HCP 1 OG 1

Nagel, Nancy
GC 8 HCP 1

Nakaham, Molly
GC 5 HCP 1 HCP 4 OG 1 OG 2

Nam, L.Y.
GC 5 L 1 OG 2 RIP 4 SG 1 TIM 1 WAT 3 W M M 1

Nance, Harold
OG 1

Nardi, Nina
OG 1

Nash, J
HCP 1 OG 1 RIP 4

Nash, Kenneth & Adrianne
HCP 1 L 1 OG 1 TIM 1

Nash, Kenneth & Adrianne
HCP 1 TIM 1

Nash, Ruth P.
RIP 4

Nash, Susan
GC 8 HCP 1 HCP 3 L 1 L 2 SG 1

Nash, Valerie A.
HCP 1 OG 1

Natsues, Leon & Molly
HCP 1 OG 1 RIP 4

Naylor, Joyce
HCP 1 OG 2

Naylor, Joyce T.
HCP 1 OG 1

Nayyar, Rena
E 4 GC 7 GC 9 H 2 HCP 1 HCP 2 I 1 L 1
MON 1 OG 1 OG 2 SG 2 TIM 3 VEG 1 WNSO 1

Nayyar, Robyn
HCP 1 OG 1

Nayyar, Robyn
HCP 1 L 1

Nears, Pamela J.
GC 12 HCP 1 HCP 3 TIM 5 WMM 1

Neff, Jack
GC 7 HCP 1 OG 1

Negales, Carmen
H 4 HCP 1 HCP 2 L 1 OG 1 RIP 4 TIM 3 WAT 3

Neighbaur, Paul & Marilyn
HCP 1 OG 1

Neilands, J. B.
HCP 1

Neilands, J.B.
HCP 1

Neilands, J.B.
HCP 1 L 1 OG 1

Neilands, J.B. & Juanita
GC 7 HCP 1 OG 1

Neils, Danielle
HCP 1 OG 2 WMM 1

Nelsen, Michael John
GC a GC 10 HCP 1 L 1 OG 1

Nelson, Amy J.
HCP 1 I 1

Nelson, David C.

GC 7 HCP 1 TIM 3

Nelson, Shirley
GC 7 GC 9 OG 1

Nelson, Thomas
GC 9 HCP 1 OG 1

Nesmith, Mary L.
HCP 6

Netherton, Dawn
HCP 1 OG 1 RIP 4

Netta, Susan
HCP 1 OG 1 RIP 4

Nettler, Ed
GC a HCP 1 OG 1

Neuhauser, Ron
HCP 1 OG 1

Neuman, Lisa
GC 7 GC 9 HCP 1 OG 1

Neumayer, Victor
GC 7 HCP 1 OG 1

Nevfeld, Corinna
H 1 HCP 1 SG 1 TIM 1

Neville, Michele L.
HCP 1 OG 1 RIP 4

Newell, Heather
GC a HCP 1

Newgren, Jim
OG 1 RIP 4

Newgren, Wendy
OG 1

Newkirk, Ray
HCP 1 I 1 L 1 L 2

Newkirk, Ray
HCP 1 I 1 L 1 L 2

Newman, Jan
HCP 1 OG 1 RIP 4

Newman, Robert
GC 8 GC 10 HCP 1

Newsham, Brad
HCP 1 OG 1

Newton, B.
HCP 1 OG 1 RIP 4

Newton, Kirsten
HCP 1 OG 1 RIP 4

Newton-Wright, Michael & Marianna
GC 8 GC 10 HCP 1

Nguyen, Hop
HCP 1 OG 1 RIP 4

Nguyen, Thanh H.
HCP 1 OG 1 RIP 4

Nguyen, Vi
OG 1 TIM 6

Nichol, Laurie
GC 7 GC 9 OG 1

Nichol, Laurie
GC 7 GC 9 OG 1

Nicholas, Brook & Ruthie
HCP 1 OG 1 RIP 4

Nicholas, John
HCP 1 OG 1

Nichols, Jamin
HCP 1 OG 1 RIP 4 TIM 1 WAT 3

Nielsen, Dianne
GC 10 HCP 1 OG 1

Nieves, Edwin
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Nieves, Terry
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Nikkel, Diana
OG 1 RIP 1

Niswander, M. Ruth
F 1 HCP 1 L 1 MON 1 RIP 1 TIM 1 WMM 1

Niswander, MR
GC 8 RIP 5 RIP 7 SG 1

Niswander, Ruth
HCP 1 RIP 4 WAT 6

Niswander, Ruth
GC 10 HCP 1

Niswander, Ruth
GC 10 HCP 1

No, Name
HCP 1 OG 1 RIP 4

Noel, Cynthia
HCP 1 OG 1

Nolan, George
OG 1 RIP 4

Nolan, George
OG 2 RIP 4

Nolan, Susan
F 1 HCP 1 HCP 2 TIM 1

Noleen, Jeff
H 1 HCP 1 L 1 OG 1 TIM 5

Norand, Santoshi
HCP 1 OG 1

Not-berry, Michael W.
HCP 6

Norbut, Joanne
H 4 L 1

Nord, Cory G.
GC 7 GC 10 I 1 L 1

Nordhaus, Ted
HCP 1 L 1 MON 1 RIP 4 WAT 6

Nordhaus, Ted
HCP 1 L 1 MON 1 RIP 4

Norman, Joan
E 1 F 1 HCP 1 L 1 OG 1 OG 2 RIP 1 RIP 2
RIP 5 RIP 7 SG 6 TIM 1 WAT 2 WAT 6 WMM 1 WNSO 1

Norman, Joan M.

HCP 1 RIP 1 RIP 4

Northrup, Kim
HCP 1 OG 1 RIP 4

Northrup, Kim
HCP 1 OG 1 RIP 4

Norton, Carrie
GC 9 GC 10 HCP 1 I 1 L 1 OG 1

Norwood, Terri
HCP 1 L 1 OG 1 RIP 4 WMM 1

Nova, Barbara
HCP 1 OG 1 RIP 4

Novak, Anne
HCP 1 OG 1 RIP 4

Novak, David L.
HCP 1 OG 1 RIP 4

Novelli-Crady, Adele
HCP 1 OG 1 RIP 4

Noyes, Mark A.
HCP 6

Nulsen, Margie
E 4 GC a H C P 1 L 1 RIP 4

Numally, Gordon & Miriam
HCP 1 RIP 4

Nunez, Lucia
HCP 1 OG 1 RIP 4

Nurre, Michael
GC 7 HCP 1 HCP 2 I 1 L 1 OG 1 WNSO 1

Nurre, Michael
GC 7 HCP 1 HCP 2

Nuzzo, D.
GC a GC 10 HCP 1

Nyberg, Phil
E 5 HCP 6

O'Brien, Elaine
OG 1 RIP 4 WAT 2

O'Brien, Mary
GC 8 GC 10 HCP 1 L 1

O'Brien, William B.
HCP 1 HCP 2 L 1

O'Connell, Cathleen
HCP 1 OG 1 WAT 6

O'Connell, John J.
HCP 6

O'Connell, Kathy
GC 7 HCP 1

O'Connell, Kathy
HCP 1 L 1 SG 5

O'Connell, Sue

O'Connor, Meaveen
HCP 1 OG 2

O'Day, Carol
HCP 1 OG 1 RIP 4

O'Day, Michael
HCP 1 OG 1 RIP 4

O'Doul, Tom
HCP 1 OG 1 RIP 4

O'Kailath, Ryan
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

O'Laughlin, Brian
HCP 1 HCP 4 L 1 OG 1 OG 2 RIP 1 SG 1 WAT 6

O'Neal, James P.
HCP 1 OG 1

O'Neal, Jim
HCP 1 OG 1

O'Neal, Moira & Jim
HCP 1 OG 2

O'Steen, Sean
GC 8 HCP 1 HCP 2 I 1 L 1 L 2 OG 1 OG 2
RIP 1 RIP 4 SG 1 SG 3 TIM 1 TIM 3 WAT 3 WAT 6
WMM 1

Oaklander, Martha
GC 8 GC 10 HCP 1 L 1 OG 1

Oaklander, Violet
GC 8 GC 10 HCP 1 L 1 OG 1

Ober, James A.
HCP 6

Oblander, Edward & Nancy
GC 9 OG 1

Occhiogrosso/Groococ, Barbara G./Hugh D.
GC 7 HCP 1 I 1 OG 1

Ode, Susan
L 1

Oden / Sutten, Lacy / Benjamin
HCP 1 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 6 WMM 1

Odum, Wade Daniel
HCP 1 HCP 2 OG 2

Ofrin, John
GC 8 GC 10 HCP 1

Ogard, Kristin Joy
HCP 1 HCP 2 OG 1 OG 2 RIP 4 SG 1 SG 2 WMM 1
WNSO 1

Ogden, Stephen
GC 8

Ogden, Stephen J.
HCP 1 OG 2

Okun, Hillary
GC 7 GC 9 GC 10

Olavson, Lars
HCP 1 OG 1 RIP 4

Oldenshaw, Barbara
GC 8 L 1

Olds, Vicki
HCP 1 RIP 1

Ole, Ken
HCP 1 OG 1 RIP 4

Oleson, David

GC 7 GC 10 I 1 L 1

Oliveria, Robert
HCP 1 HCP 2 L 1 RIP 4 TIM 1 VEG 2 WNSO 1

Oliveria, Robert
HCP 1 HCP 2 L 1 OG 1 RIP 4 TIM 1 TIM 3 VEG 2
WMM 1 WNSO 1

Olivier, Heather
GC 8 GC 10 HCP 1

Olson, Carrie
GC 8 OG 2

Olyarnik, Suzanne
HCP 1 L 1 OG 2 RIP 4 TIM 1

Opheim, Megaera
HCP 1 OG 2

Opie / Lederman, Ellen / J.N.
E 4 GC 7 GC 10 HCP 1 HCP 2 HCP 3 L 1 TIM 1

Oren, Rodney
GC 8 HCP 1 L 1

Orr, Lolita
HCP 1 OG 1 RIP 4

Ortiz, Eric
HCP 1 WMM 1

Ortiz, Eric
HCP 1 OG 1

Ortiz, Marcos
HCP 6

Ortiz, Marcos
HCP 6

Ortman, Ron
HCP 1

Osborn, Jeanne
GC 8 HCP 1

Osmidoff, Elizabeth
HCP 1

Osmidoff, Elizabeth
HCP 1

Ostro, Bart
HCP 1 OG 1 RIP 4

Otten, Maureen
GC 8 GC 10 HCP 1 L 1 OG 1

Otters, Goldie
GC 8 GC 10 HCP 1 L 1 WAT 2

Otto,
GC 14

Oveland, Charley
GC 9 OG 1

Owen, Jennifer
E 4 GC 7 GC 8 HCP 1 OG 1 OG 2 SG 6 WMM 1
WNSO 1

Owen, Mary L.
HCP 1 OG 1 RIP 4

Owens, Janice
HCP 1

Owens, Michael
GC 7 GC 10 I 1 L

Owens, Stephanie
HCP 1 OG 1 RIP 4

Owings-Kaposi, Emily
HCP 1

Pacini, J. D.
HCP 1 OG 1

Paff rath, Susan
HCP 1 OG 1 RIP 4

Page, Chris
HCP 1 HCP 4 L 1 OG 1 OG 2 RIP 4 WMM 1

Paget-Seekins, Laurel
GC 8 RIP 5 SG 6

Paggett, Carol
GC 7 GC 10 I 1 L 1

Pain, Lincoln
HCP 1 RIP 4

Paisley, Christine W.

OG 1

Paiva, Carlos
GC a GC 10 HCP 1

Palmer, Jane
HCP 1

Palmer, Mary Pat
GC 7 HCP 1 OG 1

Panek, Roger T.
GC a GC 10 HCP 1

Pang, Jamie
HCP 1 OG 1 TIM 6

Pankin, Sidney
P 2

Papler, Roger W.
HCP 1 I 1 OG 1 RIP 4

Papler, Roger W.
GC 10 HCP 1 L 1 OG 1 RIP 4

Parenti, PhD, Michael
H 4 HCP 1 OG 1 WAT 2

Paris, Nancy
HCP 1 OG 1 RIP 4

Parisi, Vinny
F 1 HCP 1 WAT 1 WAT 4

Park, Hae-Soo
OG 1

Park, Vicki
HCP 1 OG 1 RIP 4

Parker, Don
HCP 1 L 1 OG 2

Parker, Susan
HCP 1 OG 1

Parker, Vivian
GC 7 HCP 1 HCP 2 I 1 L 1 MON 2 RIP 4 TIM 1
WAT 3 WAT 4 WMM 1

Parker, Webb
OG 2 RIP 4

Parkinson, Linda
GC 8 HCP 2 L 1 RIP 1 RIP 5 SG 1 TIM 1 WAT 3
WMM 1 WMM 2 WNSO 1

Parkoric, Nik
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Parks, W. T
GC 7 GC 10 I 1 L 1

Parque, Grid
HCP 1 OG 1

Parrish, Liz
HCP 1

Parrish, Liz
GC 8 HCP 1

Parrish, Liz
E 1 GC 8 HCP 1

Parsons, Pamela
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1
WAT 3 WMM 1 WNSO 1

Parsons, Patricia
HCP 1 OG 1

Parsons, Tim & Laura
GC 8 OG 1 RIP 4

Par-tee, Gail D.
HCP 1 OG 1 RIP 4

Partridge, Richard W.
HCP 1 OG 1 RIP 4

Pasek, Randy & Adrienne
HCP 1 OG 1 RIP 4

Paskal, Alison
HCP 1

Pasqual, Liana
HCP 1 L 1 OG 2 RIP 4 SG 1 WAT 3

Pasquet, Michael
GC 5 H 4 HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 3
WAT 4

Passaris, Elaine
HCP 1 OG 1 RIP 4

Passavanti, Acacia
HCP 1 OG 1

Passoff, Michael
F 1 GC a HCP 1 HCP 2 L 1 MON 1 RIP a RIP 10
SG 6 WA 1 WAT 1 WAT 3 WAT 4

Passoff, Michael
F 1 GC a HCP 1 HCP 2 L 1 RIP 1 SG 1 SG 6
TIM 3 WA 1 WAT 1 WAT 4 WMM 1 WNSO 1

Patanjo, Anthony
HCP 1

Patek, David J.
GC a GC 10 HCP 1

Patel, Bhauk
HCP 1 TIM 6

Patel, Radha
HCP 1 OG 1 RIP 4

Patenaude, J. Rose
GC 7 HCP 1 OG 1 OG 2 RIP 4 SG 3 TIM 1 WAT 2
WNSO 1

Patenaude, J. Rose
HCP 1 OG 2 RIP 4 TIM 1 WMM 1 WNSO 1

Paton, Robert
GC a OG 1 TIM 1

Patrick, Michele S.
HCP 1 OG 1 RIP 4

Patterson, Bob & Lea
HCP 1 OG 1 RIP 4

Patterson, Carol
HCP 1 OG 1

Patterson, Lindsay S.
GC 7 HCP 1 OG 1 WMM 3

Patterson, Tina
HCP 1 OG 1 RIP 4

Pattison, Jo M.
HCP 6

Patton, Susan
HCP 1 L 2 OG 1

Pauker, Tony
HCP 1 RIP 4

Paul, Larry
GC 7 GC 10 I 1 L 1

Pauletto, Gian
GC 7 GC 8 HCP 1 OG 1

Paulson, Jean
F 1 GC 7 HCP 1 RIP 4 RIP 8 RIP 9 SG 6 WA 1
WAT 1 WAT 2 WAT 4

Paulson, Jean
E 4 H 2 L 1 OG 2 SG 1 TIM 1 TIM 3 TIM 6
VEG 2 WAT 3 WAT 5 WMM 1 WNSO 1

Paulson, Jean
E 3 HCP 1 HCP 3 L 1 OG 2 TIM 1 WAT 6

Pavlini, Laura
OG 1 RIP 4

Pavorini, Marie
HCP 1

Payne, Mary M.
HCP 1 OG 1 RIP 4

Payton, P.D.
HCP 1 OG 1 RIP 4

Peake, David
E 5 HCP 6 L 3

Pearl, Jonathan
H 4 HCP 1 HCP 2 L 1 OG 2 RIP 4 TIM 1 WAT 2

Pearl, Jonathan
GC 9 HCP 1 L 1

Pearl, Jonathan
E 4 GC 5 H 2 HCP 1 HCP 2 L 1 OG 2 RIP 4
SG 1 TIM 1 VEG 2 WMM 1

Pearson, David
HCP 1 HCP 2 L 1 RIP 4

Peden, Alicia
HCP 1 RIP 1 SG 1

Pedersen, Barbara
GC 7 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3

Pedersen, Barbara E.
HCP 1 HCP 3 L 1 OG 2 RIP 4 SG 1 WAT 2 WAT 6
WMM 2

Pederson, Barbara E.
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 6 WMM 1

Peebles, Richard
GC 8 GC 10 HCP 1 L 1 OG 1

Peevley, Barbara
HCP 1 OG 2

Peizer, Lisa
HCP 1 OG 1 RIP 4

Pelaez, Eucksau
HCP 1 OG 1

Pell, Lewis M.
GC 8 GC 10 HCP 1

Pellessier Muir, Kathryn
HCP 1 OG 1

Pelton, Taffy
HCP 1 L 1 OG 1 OG 2 RIP 4 SG 3 WAT 6

Pelupessy, Asmara
HCP 1 OG 1 RIP 4

Pemble, Alice
HCP 1 OG 1

Pena, Adolfo
OG 1 RIP 4

Penn, Alexis
HCP 1

Penn, Candis
RIP 1 RIP 5 RIP 7 SG 1 SG 6

Penn, Sara

HCP 1 OG 1 RIP 4

Pennell, Robert
HCP 1 OG 1 RIP 4

Penner, Robert
HCP 1

Pennington, Margaret
HCP 1 HCP 2 L 1 OG 2 RIP 1 RIP 4 RIP 7 RIP 8
SG 1 TIM 1 WAT 3 WAT 6 WNSO 1

Pennington, Margaret
F 1 GC 10 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1
SG 3 TIM 1 WAT 3 WMM 1 WNSO 1

Penwell, Elaine
HCP 1 OG 1 RIP 4

Pepperwood, Susan
GC 5 GC 8 HCP 1 HCP 2 HCP 3 L 1 OG 1 OG 2
P 1 RIP 4 TIM 1 WAT 3 WMM 1 WNSO 1

Peralez, Manuel
HCP 1 RIP 4 SG 6

Perczek, Ruben
HCP 1 OG 1 RIP 4

Peregrine, Nancy
GC 7 OG 1

Peri, Andy
HCP 1 L 1 SG 1 SG 6 WAT 2 WAT 3 WAT 6 W M M 1
WNSO 1

Peri, Andy
GC 8 HCP 2 L 1 OG 2 RIP 4 SG 1 SG 6 WAT 2
WAT 3 WAT 6 WNSO 1

Peri, Andy
HCP 1 HCP 3 RIP 4 WAT 2

Perkins, Dorothy
HCP 1 OG 1 RIP 4

Perkins, Dorothy
HCP 1 OG 2 RIP 4

Perkins, Kathy
HCP 1 OG 1

Perkins, Linda
HCP 1 MON 1 RIP 3 RIP 4 SG 1 WAT 2 WAT 4 WMM 1
WNSO 1

Perkins, Rob
HCP 1

Perkins, Tracy
GC 7 GC a L 1 OG 1 RIP 4 WNSO 1

Penman, Elizabeth
GC a GC 10 HCP 1

Perrone, Jan
GC a HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Perry, Helen
HCP 1 OG 2

Perry, Ross & Bonnie
HCP 1 OG 1 RIP 4

Pessin, Elana
GC a GC 10 HCP 1 L 1 OG 1

Pesta, M. Erika
HCP 1 OG 1 RIP 4

Peters, Frank E.
HCP 1 OG 1

Peters, Frank E.
HCP 1

Peters, Nathan
AQ 1 GC 7 GC a I 1 L 1 OG 2 TIM 1 WAT 3
WNSO 1

Peters, Nathan
AQ 1 GC 7 GC a HCP 1 HCP 2 I 1 L 1 TIM 1
WAT 3 WNSO 1

Petersen, Eric
GC 14 HCP 1 L 1

Peterson,
GC 7 GC 10 I 1 L 1

Peterson, Gary
HCP 1 OG 1 RIP 4

Peterson, Jason
OG 1

Peterson, Lorne
RIP 4

Petit, Alan
GC 7 HCP 1 OG 1

Petit, Karen Marie
HCP 1 L 1

Petrim, Nancy
HCP 1 L 1 OG 1

Petrocelli, Maya
GC 7 HCP 1 RIP 4

Pettenger, Amy M.
OG 1

Pettit, Alan
HCP 1 I 1 L 1

Pettit, Charles Alan
GC 7 HCP 1 OG 1

Pettit, Karen
HCP 1 L 1

Pettii, Karen Marie
GC 7 HCP 1 OG 1

Pettlon, Archee Lynn
E 4 HCP 1 TIM 1

Pfeifer, Linda
HCP 1 OG 1

Pfeiffer, Isabella
HCP 1 OG 1

Phan, Angela
HCP 1 OG 1

Phelan, Jeanne
HCP 1 OG 1 OG 2

Phelan, Joan
HCP 1 RIP 1 SG 1

Phillips, Carol
GC 8

Phillips, Jennifer
HCP 1 L 1 RIP 4 SG 1 WAT 2

Phillips, Judy
HCP 1 OG 1

Phillips, Judy
HCP 1 OG 1 TIM 1 WAT 5

Phillips, Maryanne
HCP 1

Phillipson, David
GC 8 L 1 OG 1 P 1

Phong, Cao
HCP 1 OG 1 RIP 4

Pickering, John M.
HCP 1 L 1 OG 1

Pickett, Elizabeth
HCP 1 HCP 2 OG 2 P 1

Piel, Elizabeth
HCP 1 OG 1 RIP 4

Pierson, David
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

Pihaller, Brian
HCP 1 OG 1

Pilotte, Jeff
HCP 1 OG 1

Pink, Patty
E 4 GC 5 GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4
TIM 1 WAT 3 WMM 1 WNSO 1

Pink, Patty
E 4 HCP 1 HCP 2 RIP 4 TIM 1 WAT 3 WMM 1 WNSO 1

Pinoni, Francesca
HCP 1 OG 1 RIP 4

Pisano, Vivian M.
HCP 1 OG 1 RIP 4

Pisciotta, Sophia
HCP 1 L 1 OG 1 RIP 4

Pittman, Craig

HCP 4 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 3

Pittman, Eric
GC 7 GC 10 I 1 L 1

Pitts, Gary
HCP 1 OG 1 RIP 4

Pitts, Leslie
HCP 1 OG 1 RIP 4

Pitts, Nina
H 2 OG 2 RIP 4 TIM 1 TIM 7

Pittson, Suzanne
HCP 1 OG 1

Pittson, Suzanne
HCP 1

Plambeck, Lynne
HCP 1 RIP 4

Plambeck, Lynne
HCP 1 RIP 4

Plane, Dennis L.
HCP 1 L 1 OG 1

Platter, Mary
HCP 1 L 1 OG 1

Plyer, Allison
GC 8 GC 10 HCP 1 L 1 OG 1

Podvin, Elizabeth M.
GC 8 HCP 1 L 1

Podvin, Elizabeth M.
GC 8 HCP 1 HCP 4 L 1

Podvin, Jo
GC 8 HCP 1 I 1

Podvin, Jo
GC 8 HCP 1 L 1

Poindexter, Ron & Corky
HCP 1

Poindexter, Ronald E.
HCP 1 OG 1

Polansky, Leo
RIP 5 RIP 7

Polite, Cindy
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

Polite, Cindy
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 5 WMM 1

Pollack, Kim
H 2 HCP 1

Pollak, Cristy J.
HCP 1 OG 1 RIP 4

Pollak, Kim
H 1 H 4 HCP 1 OG 1 TIM 1

Pollak, Lauren
GC 8 HCP 1 TIM 3

Pollak, Lauren
GC 8 HCP 1 I 1 L 1 TIM 3

Pollakowsky, Doreen
HCP 1 TIM 1

Pollakowsky, Doreen
HCP 1

Pollard, Ted
E 5 HCP 6

Pollick, Christopher John
GC 14

Pollinger, Erin
HCP 1 OG 2 RIP 4 TIM 1

Pollock, Erik
OG 1

Pollyak, Steve
HCP 1

Polston, Loyal
HCP 1 OG 2

Polston, Loyal L.
HCP 1 OG 1 RIP 4

Pomasl et al., Toni
E 1 GC 10 HCP 1

Pope, Randy
GC 7 GC 10 I 1 L 1

Popejoy, Greg
E 3 GC 7 HCP 1 I 1 L 1 OG 1 OG 2 TIM 5

Popper, William M.
HCP 1 OG 1 RIP 4

Porter, Brian W.
GC 7 GC 10 I 1 L 1

Porter, David
HCP 1 OG 1 RIP 4

Poschman, Jon
E 2 E 4 HCP 1 OG 1

Postler, Klaus
GC 8 HCP 1 I 1

Potstada, Claire
HCP 1 HCP 3 OG 1 RIP 4

Pottenberger, Robin
HCP 1 I 1 L 1 TIM 5 WAT 2

Potter, Jay
HCP 1 OG 1 RIP 4

Pouirnacky, Amy
HCP 1 OG 1 RIP 4

Powder, Adrienne
F 1 HCP 1 HCP 2 OG 2 RIP 1 RIP 4 TIM 1 WNSO 1

Powell, Elizabeth
HCP 1 OG 1 RIP 4

Powell, Elizabeth
HCP 1 OG 1 RIP 4

Powell, Sue
HCP 1 OG 1 RIP 4

Powrean, Viviane
HCP 1 OG 1

Pran, Angela
OG 1

Prather, David
E 2 I 1 L 1 OG 1 OG 2 SG 1 WMM 1

Pratt, Darlene
HCP 1 OG 1 RIP 4 TIM 1 WMM 1

Pratt, L. Darlene
HCP 1 RIP 4

Prerson, David
HCP 1 HCP 2 L 1 RIP 4 TIM 5

Prescott, James H.
GC 10 HCP 1

Prescott, Page
HCP 1 HCP 2 OG 1

Prescott, Page
HCP 1 L 1 OG 2 WAT 3

Presley, Constance
OG 1 RIP 4

Preswick, Zoe
GC 8 GC 10 HCP 2 HCP 3 L 1 OG 1 OG 2 RIP 4
SG 1 TIM 1 WAT 2 WAT 3 WAT 6 WMM 1 WNSO 1

Pret, Garet
HCP 1 OG 1

Preucil, Christine Marie
GC 5 L 1 OG 2 RIP 4 RIP 5 WAT 6 WMM 1

Prevost, John
HCP 6

Price, Barbara
HCP 1 OG 1 RIP 4

Price, Elizabeth
GC 10 HCP 1 I 1 L 1 L 2 OG 1 OG 2 RIP 4
SG 1 TIM 1 WAT 3

Price, Elizabeth
HCP 1 L 1 L 2 OG 2 RIP 4 TIM 1 WAT 2 WAT 3

Price, Logan
HCP 1 OG 1 RIP 4

Price, Wayne E.
HCP 1 OG 1 RIP 4

Primack, Karen M.
GC 10 HCP 1 OG 1

Primrose, Christine
HCP 1 OG 1 RIP 4

Primrose, Christine
HCP 1 OG 1 RIP 4 VEG 1

Prince, Anthony D.
HCP 1 OG 1 RIP 4

Pringle, Margaret E.
HCP 1 OG 1 RIP 4

Pringle, Mark
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Pringle, Mark
HCP 1 RIP 4 TIM 1 WAT 3 WAT 5

Pringle, Mark
HCP 1 TIM 1 WAT 3 WAT 4

Prinz, Peter
GC 8 GC 10 HCP 1

Prochazka, Ingeborg
GC 9 I 1 OG 1

Procheska, Shannon
HCP 1 OG 2 RIP 4 TIM 1

Proeme, Tim & Laurel
HCP 1 L 1 OG 1 OG 2 RIP 7 SG 1 WAT 3

Prouty, Gus
HCP 6

Provisor, Allyson
GC 7 HCP 1 OG 1 RIP 1 WAT 2

Provisor, Allyson
E 1 GC 7 HCP 1 I 1 L 2 OG 1 SG 1 SG 6

Prow, Sharon
L 1 OG 1 OG 2 RIP 1 WAT 3

Prucha, Tera
E 1 HCP 1 TIM 1 TIM 3

Prucha, Tera
H 4 HCP 1

Pruegel, Stefanie

HCP 1 OG 1

Pruegel, Stefanie
HCP 1 OG 1

Pryor / Holland, Allan / Sunny
HCP 1

Pucik, Chris
HCP 1 OG 1 RIP 4

Puglisi, Allison
HCP 1 OG 1 RIP 4

Puleo, Kathy
HCP 1

Puma, Phoebe
HCP 1

Pundt, Nathan
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1 WAT 3

Purdy, Janet L.
HCP 1 OG 1 RIP 4

Purdy, Jr., Robert W.
HCP 1 OG 1 RIP 4

Pyle, Katie
HCP 1 L 1 OG 1

Pyles, Marvin
HCP 2 P 2 WAT 2

Quezada, Kathryn
HCP 1 OG 1

Quick, June
HCP 1 OG 1 RIP 4

Quinlan, Alby
GC a GC 10 HCP 1 L 1 OG 1

Quinlan, Kari L.
HCP 1 OG 1

Quinn, Christiane
GC a GC 10 HCP 1 L 1

Quintin, Christian
HCP 1 OG 1 RIP 4

Quintin, Tracey
HCP 1 OG 1 RIP 4

Rabenstein, Mark
GC 8 HCP 1 OG 1

Rabenstein, Mark
GC 8 HCP 1 OG 1

Racer, Tim
GC 7

Rademacher, Dan
HCP 1 I 1 L 1

Radwan, Joe
GC 8 GC 10 HCP 1

Raes, Yolanda
OG 1

Ragab, Andrea

Raha, Kay R.
L 1 MON 1 OG 2

Rahimzadeh, Aghaghia
GC 8 HCP 1 HCP 2 L 1 OG 1 TIM 1 WAT 3

Rain, Willow
GC 7 HCP 1 I 1

Raine, John C.
MON 1 RIP 4 WAT 2

Raisel, Jeffrey L.
GC 7 GC 10 I 1 L

Raison-Cain, Josiah
HCP 1 L 1

Ramage, Hollie B.
HCP 1 OG 1 SG 1 WNSO 1

Ramey, Susan
HCP 1 OG 1 RIP 4

Ramirez, Cheryl
HCP 1 OG 1 RIP 4

Ramirez, Gene
HCP 1 OG 1 RIP 4

Ramirez, Gregory Charles

HCP 1 OG 1 RIP 4

Ramirez, Gregory Charles
HCP 1 OG 1 RIP 4

Ramlan, Thomas L.
HCP 1 OG 1 RIP 4

Ramsaier, Dorothy C.
GC 10 HCP 1

Ramsden, Sidney
GC 7 HCP 1 OG 1

Ranade, Geetanjali
HCP 1 OG 1

Randall, Terry
GC 7 GC 10 I 1 L 1

Ransom, Jim
GC 7 GC 9 HCP 1 I 1

Ransom, Jim
GC 7 HCP 1 TIM 1

Raphael, Rose Anne
GC 8 HCP 1 L 1 MON 1 OG 1 RIP 4 RIP 7

Raphael, Rose Anne
GC 8 HCP 1 L 1 OG 1 RIP 1 RIP 4

Rapoport, Marni
L 1 WAT 5

Rapp, Jill
HCP 1 OG 1 RIP 4

Rarick, Kevin C.
HCP 1 I 1 OG 1 RIP 4

Rasmussen, Dianne
HCP 1 OG 1 RIP 4

Rasmussen, Paul S.
HCP 1 OG 1 RIP 4

Ratcliff, Margaret
HCP 1 OG 1

Ratcliff, Margaret
HCP 1

Rathbun, Rex & Ruth
GC 7 GC 13 HCP 1 I 1 RIP 4 VEG 1

Rathod, Cristn
HCP 1 OG 1 RIP 4

Ratner, Adrienne
HCP 1 OG 1 RIP 4

Ratner, Jill
GC 9 L 1 OG 1 RIP 4 SG 1 SG 6 TIM 3 WAT 4
WMM 1

Rauch, Laura
HCP 1 RIP 4

Ravage et al., Ethan
HCP 1 HCP 2 OG 1 OG 2 RIP 4 SG 1 SG 2 WMM 1
WNSO 1

Ravitz, Nina
HCP 3 OG 1

Rawson, Heather
GC 5 HCP 1 RIP 1

Rawson, Heather
HCP 1 WAT 2

Rawson et al., Heather
HCP 1 L 1

Raymer, Terry,Gayle,Michaela
E 1 E 4 E 5 GC 7 HCP 1 P 1 TIM 1

Read, Donna
HCP 1 HCP 2 L 1 OG 1 RIP 4

Read, Judy
HCP 1 OG 1 RIP 4

Read, Judy
HCP 1 OG 1 RIP 4

Read, Perry
OG 1

Redfern, Richard L.
GC 8 GC 10 HCP 1

Redish, Laura
HCP 1 RIP 5 SG 1

Redmond, Don
GC 1 GC 7 GC 8 HCP 1 L 1 OG 2 TIM 1

Redmond, Don
E 1 HCP 1 HCP 2 L 1 OG 2 SG 1 TIM 1 TIM 3

Reece, Gerry
GC 8 HCP 1

Reed, Clifton
HCP 1 OG 1 RIP 4

Reed, Vivian
HCP 1 RIP 4

Reed, William
GC 7 GC 8 L 1 RIP 4 WAT 2

Reeder, Deborah
GC 8 GC 10 HCP 1

Reedy, Gary
F 1 HCP 1 RIP 4 SG 1 WAT 4

Reedy, Gary
HCP 1 HCP 2 L 1 OG 2

Reedy, Gary
L 1 SG 1 TIM 1 WAT 3

Reeh, Karl
OG 1 RIP 4

Reeser-Wooley, Stacy
HCP 1 OG 1 RIP 4

Reeve, Colin
HCP 1 OG 1 RIP 4

Regonini, Todd
HCP 1 OG 1 RIP 4

Reichert, Sarah A.
HCP 1 OG 1

Reifschneider, Fran
H 1 HCP 1 L 1 OG 1 TIM 3

Reifschnieder, Fran
GC 7 GC 8

Reifschnieder, Fran
GC 8 H 1 HCP 1 OG 1 SG 1 TIM 3

Reifsteck, Christopher
HCP 1

Reiley, Shari
HCP 1 OG 1

Reinemann, Jill
HCP 1 OG 1 RIP 4

Reiss, Hoan
HCP 1 HCP 2 L 1 OG 2 SG 3 TIM 1 WAT 3 WMM 1
WNSO 1

Reiter, Miriam
GC 7 HCP 1 L 1 OG 1 RIP 5

Remington, Margaret
GC 8 GC 10 HCP 1 L 1 OG 1

Rentschler, Dennis S.
GC 10 HCP 1 L 1 OG 1

Resnik / Winstead, Daniel J. / Amanda R
HCP 1 HCP 2 L 1 OG 2 SG 1 SG 6

Reuter, Willfried & Otto
GC 8 GC 10 HCP 1

Reveles, Lauro
GC 8 GC 10 HCP 1

Reyes, Judy
OG 1

Reyes, Melissa
HCP 1 OG 1 RIP 4

Reyes, Oliver
HCP 1 OG 1 RIP 4

Reyes, Rodney
HCP 1 OG 1 RIP 4

Reyes, Walfredo & Carolina
GC 8 GC 10 HCP 1 L 1 WAT 2

Reyes, et al., Oliver
HCP 1 RIP 4

Reynolds, Donna
GC 7

Reynolds, Eve

HCP 3 RIP 4

Reynolds, Forrest
GC 7 GC 10 I 1 L 1

Reynoso, Gabby
GC 8 HCP 1 L 1 OG 2

Reynoso, Janese
GC 8 GC 10 HCP 1

Reynoso, Jesus
OG 1

Reynoso, Jesus
HCP 1

Rhee, Seung
HCP 1 P 1

Rhett, Mike
HCP 1 OG 1 TIM 3

Rhude, Paula
F 1 WAT 1

Riccio, John S.
GC 8 GC 10 HCP 1 L 1 OG 1

Rice, Jennifer
HCP 1 OG 1 WAT 2 WMM 1

Rice, Raymond
HCP 6

Rice, Shirley
HCP 1 OG 1

Rice, Sonja
HCP 1 I 1 OG 1 RIP 4

Rich, Jim
E 5 HCP 6

Richards, April
E 4 F 1 GC 8 HCP 1 HCP 2 L 1 SG 1 WA 1
WAT 3 WAT 4

Richards, April C.
GC 1 HCP 3 TIM 1

Richards, Bill & Donna
GC 8 GC 10 HCP 1 L 1 OG 1

Richards, John
HCP 1 L 1 RIP 4 SG 1 TIM 3

Richards, John
GC 7 HCP 3 HCP 4 OG 1 WAT 2

Richardson, Philip
HCP 1 HCP 2 L 1 RIP 4

Richardson, Sherrie
HCP 1 OG 1

Richardson, Suzanne
E 1 GC 8 HCP 1 HCP 3 L 1 RIP 7 SG 6 TIM 1
WAT 3 WAT 6

Richardson, Tom
GC 7 GC 10 | 1 L

Richardson, Victor
P 1 RIP 1

Richey, Charles
HCP 1 OG 1

Richmond, Lonna
GC 8 GC 10 HCP 1 OG 1

Rick, John W.
HCP 1 OG 1

Riechmann, Anne
HCP 1 OG 1 RIP 4

Ries, Amy
GC 7 L 1 P 1

Rightnowar, J.R.
HCP 6

Riles, Tomi
OG 1

Riley, Brian
HCP 1 OG 2 RIP 4 TIM 1

Riley, Brian
HCP 1 HCP 2 RIP 4 TIM 1 TIM 5

Riley, Charles W.
HCP 1 I 1 L 1

Riley, Karin L.

HCP 1 HCP 4 L 1 SG 1 TIM 1 WMM 1

Riley, Mary A. B.
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Riley, Susanne
GC 5 HCP 1 HCP 2 OG 2 RIP 1 RIP 4 TIM 1 WAT 3
WMM 1

Rilla, Frances
GC 8 GC 10 HCP 1

Rilla, Frances
HCP 1 OG 1

Rimer, Michelle
OG 1

Rimer, Michelle
OG 1 OG 2

Ring, Wendy
HCP 1 I 1 L 1 RIP 4 SG 1 SG 6 TIM 1

Rios, Tomol
HCP 1 L 1 OG 1

Rios, Victoria
GC 7 GC 8 HCP 1 OG 1 RIP 4

Rios-Terherw, Victoria
E 1 L 1 Ml 1 RIP 4

Ripman, Jennifer Cole
HCP 1 OG 1

Ris, Maini & Christopher
HCP 1

Risch, Dane
GC 5 GC 8 HCP 1 L 1 RIP 4 WMM 1

Risley, Claire
HCP 1 L 1 OG 2 TIM 1 WAT 3

Ristow, Barbara
GC 7 HCP 1 HCP 4 L 1 OG 1

Ristow, Barbara
GC 7 GC 8 HCP 4 L 1 MON 1 OG 1 P 1

Ristow, Barbara
HCP 1 HCP 4 L 1 OG 1 TIM 1

Ritchie, Sylvia
GC 8 GC 10 HCP 1 L 1 OG 1

Rittinhouse, Tiffany
E 4 GC 7 HCP 1 HCP 2 I 1 L 1 TIM 1 TIM 3

Ritts, William D.
HCP 1 OG 1 TIM 1

Rivard, Adam
HCP 1 OG 1 RIP 4

Rivas, Dina
HCP 1 HCP 4 L 1 OG 2 RIP 4 SG 1 WAT 3

Rivera, Jose R.
HCP 1 L 1 OG 2 RIP 4 SG 1 WAT 6 WMM 1

Rivero, Therese
HCP 1 OG 1 RIP 4

Rivero, Therese
HCP 1 OG 1 RIP 4

Rivers, Jerry
GC 8 GC 10 HCP 1

Rivwer, Stacey
HCP 1 OG 1

Roach, Lisa
HCP 1 I 1

Roach, Lisa
HCP 1 OG 1

Robbins, Jack
GC 7 GC 8 HCP 1 OG 1

Robbins, Jacob
HCP 1 OG 1 RIP 4

Robbins, Priscilla
HCP 1 L 1 MON 1 RIP 4

Robbins, Rachel
HCP 1 L 1

Robbins, Rachel L.
HCP 1 OG 1 RIP 4

Robbins, Richard
HCP 6

Roberts, Curtis
HCP 6

Roberts, Frank E.
OG 1

Roberts, Frank E.
HCP 1 OG 2

Roberts, Hilda
HCP 4

Roberts, Joyce
GC a GC 10 HCP 1

Roberts, William T.
HCP 1 OG 1 RIP 4

Robertson, Bruce K.
HCP 1 OG 1 RIP 4

Robertson, James W.
GC 5 HCP 1 OG 1

Robertson, Nina
HCP 1 L 1 OG 2 RIP 4 TIM 1 WAT 3 WMM 1 WNSO 1

Robie, Holen
HCP 1 OG 1 RIP 1

Robie, Holen
HCP 1 OG 1

Robin, Lois
HCP 1

Robinson, Brenda
HCP 1 I 1 OG 1

Robinson, Brenda L.
HCP 1 I 1 OG 1 TIM 3

Robinson, Daniel R.
HCP 1 OG 1

Robinson, Daniel R.
HCP 1 OG 1

Robinson, Gary D.
HCP 1 I 1 OG 1

Robinson, Gary D.
GC 7 HCP 1 OG 1 TIM 3

Robischon, Emily
L 1 TIM 3 WMM 1

Robison, Sandy
HCP 1 OG 1

Roche, Maureen
GC 8 HCP 1 L 1 OG 1 RIP 4 SG 1 WAT 2

Rock, Mel
GC 7 HCP 1 WAT 2

Rockwell, Patricia
HCP 1 OG 1 RIP 4

Rodewick, Stephen
OG 1 RIP 4

Rodrigues, Kim
GC 7 GC 13 WAT 3

Roehr, Bill
GC 7 HCP 1 MON 2 RIP 4

Roehr, Bill & Judy
L 1 OG 2 TIM 1 WAT 3

Roehr, Keegan
HCP 1 L 1 L 2 OG 2 TIM 1 WAT 3

Roehr, Mary E.
HCP 1 L 1 OG 2 TIM 1 WAT 3 WMM 1

Roehr, Tom
HCP 1 L 1 OG 2 TIM 1 WAT 3

Rogalin, Suzanne
HCP 1 P 1

Rogalin, Suzanne M.
HCP 1 TIM 1

Roger, Rel
HCP 1

Rogers, James L.
AQ 1 OG 1 RIP 4 TIM 6

Rogers, Patricia A.
HCP 1 L 1 OG 1 TIM 5

Rogers, Rel
HCP 1 P 1

Rogers, Seth
GC 7 HCP 1 OG 1

Rogers, William H.
HCP 1

Roller, Bill
OG 1 RIP 4

Roller, Bill
HCP 1 OG 1 RIP 4

Romani, Patrick
HCP 1 OG 1 RIP 4

Romano, Joe
HCP 6

Romano, Joe
E 5 HCP 6

Romansic, John
HCP 1 HCP 2

Romesburg, Denise L.
HCP 1 L 1 OG 1 OG 2 RIP 1 RIP 4 SG 1 WAT 6
WMM 1

Ronay, Lisa
GC 7 HCP 1 L 1 MC 1 OG 2 P 1

Ronay, Lisa
HCP 1 TIM 1 WAT 3

Roner, Christopher
HCP 1 OG 2 TIM 1

Roome, Carl D.
E 4 HCP 6

Roopenian, Kourtney
HCP 1 OG 1

Roosevelt, Ellen D.
HCP 1 OG 1 RIP 4

Roosevelt, Nicholas
HCP 1 OG 1 RIP 4

Rosa, Lauren

HCP 1

Rosch, Arthur
HCP 1 OG 1 RIP 4

Rose, Caroline R.
HCP 1 OG 1

Rose, Chicklena
HCP 1 OG 1 RIP 4

Rose, Diana
GC 8 TIM 3

Rose, Dorothy J.
HCP 1 OG 1

Rose, Joly
E 5

Rose, Jon
HCP 1 MON 1 OG 1 RIP 4

Rose, Jon
GC 8 L 1 MON 1 OG 1 RIP 4

Rose, Renee
HCP 1 L 1 RIP 4

Rosen, Glenn W.
AQ 1 HCP 1 HCP 2 I 1 L 2 OG 1 TIM 3 WMM 1

Rosenberg, Carol A.
GC 8 GC 10 HCP 1 L 1 OG 1

Rosenberg, Judith
HCP 1 OG 1 TIM 3

Rosenman, Judy
HCP 1 OG 1 RIP 4

Rosenstein, et al., David
HCP 1 RIP 4

Rosenthal, Anne
GC 8 HCP 1 OG 1 OG 2 TIM 3 WAT 3

Rosenthal, Anne M.
GC 8 H 4 HCP 1 I 1 OG 1 OG 2 TIM 3 WAT 3

Rosenthal, K.
HCP 1 OG 1 RIP 4

Rosenthal, Marion
GC 8

Rosenthal, Susan
GC 5 H 4 HCP 2 HCP 3 L 1 OG 2 RIP 4 SG 1

Rosenthall, MR
HCP 1 L 1 OG 1

Rosman, Richard R.
F 1 HCP 1 HCP 2 I 1 L 1 MON 1 RIP 1 RIP 7
RIP 9 RIP 10 SG 6 WAT 1 WAT 4

Ross, Courtney
HCP 1 OG 1 RIP 4

Ross, Courtney
HCP 1 OG 2 RIP 4

Ross, David
GC 10 HCP 2 L 1 RIP 4 SG 1 TIM 1

Ross, Leslie
E 4 HCP 1 RIP 4

Ross, Michael & Claudia
HCP 1 OG 1 RIP 4

Ross, Scott A.
HCP 1 HCP 2 OG 2 TIM 1 VEG 2 WMM 1 WNSO 1

Ross, William
HCP 1 OG 1

Rosser, Dianne
GC 8 HCP 1 RIP 4

Rossman, Jared
GC a HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Rossman, Jared K.
GC 7 HCP 1 HCP 2 L 1 RIP 4 RIP 5 SG 1 TIM 1
WAT 2

Rossman, Jared K.
F 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1 VEG 2

Roswell, Jeremy
HCP 1 RIP 4

Roszkowiak, John Peter
HCP 1 OG 1

Roszkowiak, John Peter
GC 8 OG 1 OG 2

Rothchild, Patricia E.
RIP 1 RIP 5 RIP 7 SG 1 SG 6

Rothenberg, Keith
HCP 1 OG 1 RIP 4

Rotterman, Delores
GC 10 OG 1

Rotterman, Delores
GC 8 GC 10 OG 1

Rowe, Jim
HCP 1

Rowe, Jim
GC 8 HCP 1

Rowe, Jim
GC 8 HCP 1

Rowe, Susan
GC 5 GC 8 HCP 1

Rowell, Diana
HCP 1 OG 1 RIP 4

Rowell, Diana
HCP 1 RIP 4

Rowell, Diana
HCP 1 OG 1

Rowen, Jan
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Rowland, Bill & Stella
HCP 1 OG 1

Rowland, Dianne F.
H 4 HCP 1 OG 1 WAT 2

Roye, Donna
HCP 1 OG 1 RIP 4

Rubach, Mary

GC 7

Rubalow, Joa
HCP 1 OG 1

Rubiltt, Sara
HCP 1 L 1 OG 1 RIP 4

Rubin, David
F 1 GC 8 L 1 RIP 5 TIM 1 WAT 3 WAT 4 WMM 1
WNSO 1

Rubin, David
GC 8 HCP 1 L 1 WAT 3 WAT 4

Rubin, Kate
HCP 1 HCP 3 OG 1 RIP 4

Rubin, Kate
GC 8 HCP 1 OG 1 P 1 RIP 4

Rubin, Michelle K.
F 1 GC 8 L 1 OG 1 OG 2 RIP 5 TIM 1 WAT 3
WAT 4 WNSO 1

Rubin, Michelle K.
F 1 GC 8 L 1 OG 2 SG 1 TIM 1 WAT 3 WAT 4
WAT 5 WMM 1 WNSO 1

Rubin, Michelle K.
F 1 GC 8 HCP 1 L 1 RIP 1 RIP 4 WAT 3

Ruby, Daleh
GC 7 GC 10 I 1 L 1

Rudin, K.
HCP 1 L 1 OG 1

Rudner et al., Lanny
GC 5 HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 3

Rudolph, Colin
HCP 1

Rudolph, John
RIP 4

Ruff, Joe & Jayne
HCP 1 L 1 OG 1 TIM 1 WAT 3

Ruff, Joe & Jayne
GC 7 GC 8 HCP 1

Ruiz, Nedra
GC 8 HCP 1

Ruiz, Redre
HCP 1 OG 1

Running, Daryl B.
OG 1

Ruse, Michael R.
HCP 1 OG 1 RIP 4

Rush, Irene
GC 7 GC 8 HCP 1 WAT 3 WNSO 1

Rush, Irene
GC 8 HCP 1 L 1

Russ, Gaile
HCP 1 RIP 4

Russell, Darrell
GC 7 GC 10 | 1 L

Russell, Lee
HCP 6

Ruzicka, Chris
HCP 1 TIM 1 WAT 3

Ryan, Jeane P.
E 1 HCP 1 RIP 4 TIM 3

Ryan, Shelly
GC 8 HCP 1 L 1 OG 2

Ryan, Stephanie A.
HCP 1 OG 1

Ryan, Susan C.
HCP 1

Ryce, Peter
F 3 GC 7 GC 13 HCP 1 L 1 MON 1 RIP 3 RIP 4
WAT 2

Ryce, Peter
AL 1 GC 13 L 1 MON 1 MON 2 RIP 3 RIP 6 SG 1
WAT 3 WAT 4

Ryce, Peter
HCP 1 L 1 RIP 3 SG 1 SG 3 TIM 1 TIM 3 WAT 4

Ryersbach, Zak
GC 10 HCP 1

Ryersbach, Zak
GC 5 HCP 1

Rygg, Shawn
HCP 1 OG 1

Rypaport, Emily S.
E 1 HCP 1 OG 1

Ryvlin, Christian & Julie
E 1 GC 7 HCP 1

Ryvlin, Christian & Julie
E 4 GC 7 HCP 1 L 1

Sack, Gary
HCP 1 L 1 SG 1 TIM 3

Sadon, Janice
GC 13 HCP 1 L 1 RIP 4 SG 1 TIM 1 WAT 2

Sadowski, Jessica C.
GC 9 HCP 1

Saenger, Paul
HCP 1 OG 1 RIP 4

Saenger, Paul M.
HCP 1 OG 1 RIP 4

Safran, Jennifer
HCP 1 OG 1 RIP 4

Safran, Jennifer
HCP 1

Salen, Laurie
HCP 1 OG 1 RIP 4

Salen, Laurie
HCP 1 OG 2 RIP 4

Salgodo, Liane
GC 10 HCP 1 OG 1 TIM 1

Saline, Sharon
HCP 1 RIP 4

Salomon, David
GC 7 HCP 1 HCP 2 HCP 5 L 1 OG 1

Salopek, Elena
HCP 1 OG 1

Samul, A.L.
HCP 1 OG 1 RIP 4

San Miguel, Kristel
HCP 1 OG 1

Sana, Catherine
GC a GC 10 HCP 1 L 1 OG 1 WAT 6

Sandberg, Paul
HCP 6

Sanders, Karen
GC a L 1 TIM 2

Sanders, Roger
HCP 1 OG 1 RIP 4

Sanderson, Rodney
E 5 HCP 6

Sanderson, Roger
E 5 HCP 6

Sanford, Curt
E 1 E 4 HCP 1 L 1

Sanford, Donald MacA.
HCP 1 OG 1 RIP 4

Sanford, Donald MacA.
HCP 1 OG 1 RIP 4

Sangunlee et al., Sara
E 1 HCP 1 RIP 4 RIP 7 SG 6 WAT 6

Sanjayan, M.A
H 2 HCP 1 RIP 1 RIP 4

Sanjayan, M.A.
GC a H 3 HCP 1 OG 1 RIP 4

Sanregret, Sam
HCP 6

Sansone, Dave
HCP 1 L 1

Santina, Don
HCP 1 OG 1 RIP 4

Santoro, Juliann
HCP 1 L 1 OG 2

Santos, Scott A.
HCP 1 I 1 OG 1 RIP 4

Sarantis, Heather
GC 7 HCP 1 OG 1

Sarantis, Heather
HCP 1 I 1 L 1 OG 1

Sargeant, Gene
GC 8 GC 10 HCP 1

Sargent, Gary
GC 5 GC 10 HCP 1 L 1 RIP 4

Sargent, Gary
GC 8 HCP 1 I 1 L 1 OG 2

Sari, Elish
GC 8 GC 10 HCP 1

Sarter, Annre
HCP 1 HCP 2

Sarvinski, Gerald
E 5 HCP 6

Sarzynski, Monica
HCP 1 OG 1 RIP 4

Saturta, Michelle
HCP 1 L 1

Sauer, Aletta
GC 8 HCP 1 L 1 OG 2 TIM 1 WAT 3 WMM 1

Saund, Eric
HCP 1 I 1 OG 1

Saunders, John A.
HCP 6

Savage, Ron F.
GC 10 HCP 1 OG 1 RIP 4

Savvon, Konstantin
HCP 1

Savvon, Konstantin
HCP 1

Sawyer, Kathryn
HCP 3

Sawyer, Kathryn
HCP 1 OG 1

Sayad, Rebecca R.
GC 1

Sayles, Doris
GC 8 HCP 1 HCP 3 L 1 MC 1 P 1 TIM 1 WAT 3

Sayles, Mary
GC 8 HCP 1 HCP 3 L 1 TIM 1 WAT 3

Saylor, Christina M.
HCP 1 L 1 OG 1

Saylor, Gayle
GC 8 GC 10 HCP 1 L 1 OG 1

Sayre, Ann
HCP 1 OG 1 RIP 4

Sayre, Robert H.
HCP 1 OG 1 RIP 4

Scalzo, Geraldine
HCP 1 OG 1 RIP 4

Scantlebury, Jane
HCP 1

Scarpone, Robert
HCP 1 OG 1 RIP 4

Schaffer, Briana
HCP 1 OG 1 RIP 4

Schaff er, Joe
GC 2 GC 10 HCP 1 L 1

Schaldach, Laura
HCP 1 OG 1 RIP 4 SG 1 TIM 1

Schaller, Kristin
HCP 1 L 1 OG 1

Sche, Lisart
HCP 1 L 1

Scheinberg, Sandi
H 3 H 4 L 1 OG 2 RIP 4 SG 1 SG 6 TIM 3

Scheinberg, Sandi
HCP 1 RIP 4

Scheiner, Betsey
HCP 1 OG 1 RIP 4

Scheinman, Elizabeth
HCP 1 OG 1

Scheinman, Jenny
HCP 1

Scheinman, Jenny
HCP 1

Scheinman, Richard
HCP 1 I 1 L 1

Scheinman, Richard
HCP 1 P 1 RIP 4

Schembri, Carole
HCP 1 OG 1 RIP 4

Schenck, Michelle
HCP 1 OG 1

Scheve, John
HCP 1 OG 1

Scheville, Sean
GC 8 HCP 1 TIM 1

Schiller, Karen H.
HCP 1

Schiller, Karen H.
HCP 1

Schinnerer, James
HCP 1 HCP 2 L 1 OG 2 TIM 1 WAT 3

Schlosser, Tanja M.
HCP 1 HCP 2 RIP 4

Schlosser, Tanja M.
HCP 1 OG 1 OG 2 RIP 4

Schlumberger, Merlin
HCP 1

Schmidt, Abby R.
GC 9 I

Schmidt, Brian
HCP 1 OG 1 RIP 4

Schmidt, Jason
GC 7 HCP 1

Schmidt, Nikolas
OG 2 RIP 1 RIP 4

Schmitz, Kristen
HCP 1 OG 1

Schneider, Dr. David
HCP 1

Schneider, J.S.
HCP 1 OG 1 RIP 4

Schneider, Paul
HCP 1 OG 1 RIP 1 RIP 2 RIP 3 RIP 4

Schneider, Phyllis
OG 1

Scholz, Claire
HCP 1 OG 1 TIM 3

Scholz, David
OG 1

Scholze, Birgit
HCP 1 OG 1

Schrader, Peg
HCP 1 OG 1 RIP 4

Schraufnagel, John
GC 8 GC 10 HCP 1

Schreiber, Michele
HCP 1 OG 1 RIP 4

Schuler, Liz
GC 1

Schuler, Marcus
OG 1 RIP 4

Schuler, Marcus
HCP 1 OG 1 RIP 4

Schulman, Daryn
HCP 1 RIP 4

Schultz, Joseph
HCP 1 SG 1

Schultze, Robert C.
GC 7 HCP 1 | 1

Schultze-Huff, Sonja
HCP 1 L 1 TIM 1

Schulze-Huff, Sonya
HCP 1 L 1 TIM 1 VEG 2

Schumacher, P.H.
HCP 1 OG 1 RIP 4

Schumacher, P.H.
HCP 1 OG 1

Schumacher, T.W.
HCP 1 OG 1 RIP 4

Schumacher, T.W.
HCP 1 OG 1

Schwalb, Bill
HCP 1 L 1

Schwartlander-Golden, Johannes & Kelly
HCP 1 L 1 OG 1

Schwartz, David & Carol
OG 1 RIP 4

Schwartz, Leslie I.
| 1 OG 1

Schwarz, Tamara
GC 7 HCP 1 | 1

Schwarzenberger, Richard
OG 1 RIP 4

Schwarzschild, et al, Daria
HCP 1

Schweig, Rishi
HCP 1 OG 1 RIP 4

Schweig, Rishi
HCP 1 OG 1 RIP 4

Schwimmer / Rubel, Betty L. /John
GC 10 HCP 1 OG 1

Schwindt, Patricia
GC 8 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1 TIM 5
WAT 2 WAT 3 WAT 6 WMM 1 WNSO 1

Schwyhart, W. Ft.
HCP 1

Scofield, Carl
GC 5 GC 8 GC 10 HCP 1

Scordelis, Philip
HCP 1 MON 2 RIP 4 WAT 2

Scott, Anthony
GC 8 GC 10 HCP 1

Scott, Brenda
HCP 1 OG 1 RIP 4

Scott, Carolynn Mary
HCP 1 L 1 MON 1 SG 3

Scott, Celia
GC 7 GC 8 HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4
SG 3 TIM 1 WAT 3 WMM 1 WNSO 1

Scott, George
HCP 1 OG 1 RIP 4

Scott, Javrell
GC 7 GC 10 | 1 L 1

Scott, Mika
GC 10 HCP 1

Scott, Naiyana
HCP 1

Scott, Valere B.
OG 1

Scranton, Tony & Felicia
HCP 1 OG 1 RIP 4

Scroggs, Emily
GC 8 GC 10 HCP 1

Scruby, Giovanna
HCP 1

Scully, Marion
GC 10 HCP 1 OG 1

Sdao, Dennis
GC 7 GC 10 I 1 L 1

Seal / Distante, Stephen /Joe
GC 9 HCP 1 HCP 2 I 1 OG 1

Sears, Judy
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Seary, R.
HCP 1 TIM 6

Seay, Ray
GC 7 GC 10 I 1 L 1

Seibel, Andre
GC 8 HCP 1 OG 1

Seibel, Andre
GC 8 HCP 1 OG 1

Seidell, Joseph
HCP 1

Seidell, Joseph
HCP 1 MON 2 MON 8

Seim, S.
HCP 1 OG 1 RIP 4

Seim, Shauntrell
HCP 1 OG 2 RIP 4

Seip, Ann
GC 8 GC 10 HCP 1 L 1

Seiret, Launa
GC 7 GC 8 H 1 H 2 H 3 HCP 1 HCP 2 I 1
L 1 L 3 OG 1 OG 2 RIP 4 SG 1 TIM 1 WAT 2
WNSO 1

Seitz, et al., Jennifer
GC 8 HCP 1

Sejuri, W.
HCP 1 OG 1

Sellers, Joanna
HCP 1 MON 1 RIP 7

Sellers, Joanna
E 1 HCP 1 L 1 MON 1 RIP 7

Sellers, Suzanne
HCP 1 OG 1 RIP 4

Sells, Robert
GC 7 GC 10 I 1 L 1

Selmanof, Scott
E 4 HCP 1 I 1

Selmanoff, Scott
E 1 E 4 GC a H 1 HCP 1 HCP 2 L 1 OG 1
RIP 4 SG 6 TIM 1 TIM 5

Selong, Gerry
GC 7 GC 10 I 1 L 1

Semler, Gregory T.
HCP 1 OG 1 RIP 4

Sendino, Nelson
HCP 1 OG 1 RIP 4

Seng, Carrie
HCP 1 OG 1 RIP 4

Septent, E.B.
HCP 1 OG 1 RIP 4

Servino, Angelo & Kathryn
HCP 1 OG 1 RIP 4

Seung, Judy
GC a HCP 1 OG 2

Seuret, Lanna
GC 1 GC a HCP 2 OG 1 OG 2 RIP a RIP 9 SG 1
TIM 1 TIM 5 WMM 3

Seuret, Lanna
E 4 E 5 GC 7 H 2 HCP 1 HCP 2 L 1 OG 1
OG 2 RIP 4 TIM 1 VEG 2 WAT 2 WMM 1

Sexton, John C.
HCP 1 I 1 OG 1 RIP 4

Seybold, Scott
GC 7 GC 10 I 1 L 1

Shaffer, Therese
HCP 1 OG 1

Shaffer, Therese
HCP 1

Shaller, Edward
HCP 1 OG 1

Shamblin, David
E 5 HCP 6

Shane, Ashley
HCP 1 OG 1 SG 1 TIM 3 WNSO 1

Shannon-Chastain, Joshua
HCP 1 OG 1 RIP 4

Shanteau, John
HCP 1 I 1

Shapiro, Daniel
GC a H C P 2 L 1 OG 1 WAT 3 WMM 1 WNSO 1

Shapiro, Natalie
OG 1 P 1

Shapiro, Natalie
HCP 1 OG 2

Sharkey, Jennifer
E 5 OG 1 P 2 REC 1

Sharlett, Peter
GC a H C P 1 SG 1 TIM 1 WMM 1 WNSO 1

Sharp, Bradley D.
HCP 6

Shatz, Fae
GC a GC 10 HCP 1 L 1 OG 1

Shaw, Sylvia
HCP 1 OG 1 RIP 4

Shaw, et al., Sylvia
HCP 1 OG 1 RIP 4

Shawver, David
HCP 1 OG 1 RIP 4

Shawver-Granger, Diane
HCP 1 OG 1 RIP 4

Shea, Allen
HCP 1 OG 2

Shea, Pamela
HCP 1 OG 1 RIP 4

Shea, Pamela
HCP 1 OG 1 RIP 4

Shearer, Michael
HCP 1 OG 1

Sheff er, Florence
HCP 1 HCP 2

Sheff er, Florence
HCP 1 L 1 P 1 TIM 1

Sheftel-Gomes, Nancy
HCP 1 OG 1

Shehadeh, Francis
HCP 1 OG 2

Shekerjian, Laura
HCP 1 OG 1 RIP 4

Shelburn, Shirley J.
GC 7 L 1 TIM 1

Sheldon, William L.
GC 7 GC 10 I 1 L

Shelley, Carl
HCP 6

Shelley, Carl
E 6 HCP 6

Shelton, Wade
HCP 1 L 1 OG 1 OG 2

Shelton / Jackson, Robert / Betty
GC 8 GC 10 HCP 1

Sher, Lee
HCP 1 OG 1

Sherafat, Kamram
HCP 1 OG

Sherby, L.
HCP 1 L

Shereve, Angela
HCP 1 OG 1

Sherman /Jones, Cynthia /John
GC 8 GC 10 HCP 1

Sherohman, John
HCP 1 OG 1

Sherohman, John
HCP 1 OG 1

Shewry, Gary W.
HCP 6

Shewry et al., Gary
HCP 6

Sheyner, Alex & Natalie
HCP 1 OG 1

Shields, Jennifer
HCP 1 OG 1 RIP 4

Shimada, Michelle
GC 8 GC 10 HCP 1

Shinar, Lisa
HCP 1 OG 2 SG 1 TIM 3

Shipnes, J.
GC 1

Shirley, Glen & Marlys
GC 8 GC 10 HCP 1

Shively, Daniel C.
GC 8 GC 10 HCP 1

Shoemaker, Dorothy
HCP 1 WAT 5

Shoemaker, Walter C.
HCP 1 OG 1 RIP 4

Shook, Deborah
HCP 1 L 1 P 1

Shoop, Karen
GC 8 GC 10 HCP 1

Shoraco, Daniel
HCP 1 HCP 4 L 1 RIP 4

Shores, Kian
GC 7 GC a H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Showit, Kristen
HCP 1 OG 1

Shreve, Angela
P 1

Shuler, Nancy
GC a GC 10 HCP 1

Shull, Judy
HCP 1 L 1

Shull, Judy
HCP 1 L 1

Shumpert, Arlo
HCP 1 OG 1

Sibirtsev, Anna L.
E 1 HCP 1 L 1 MON 1 RIP 4

Sicking, Isadora
GC 9 OG 1

Siegenthaler, Dolores Nice
HCP 1

Sikes, Aaron J.
HCP 1 OG 1 RIP 4

Sills, Terry Lea
HCP 1 OG 1

Silver, Adam
GC 1 HCP 1 OG 1 RIP 1 WNSO 1

Silverblatt, Deborah B.
HCP 1 OG 1 RIP 4

Silverman, Randee
GC a GC 10 HCP 1

Silvers, Rodger
GC a HCP 1 HCP 2 OG 2 WMM 1

Simitz, DJ
OG 1 RIP 4

Simmons, Mani

GC 8 L 1

Simon, Tibby
GC 7 GC 9

Simon, Tibby
HCP 1 OG 1 RIP 4

Simos, Miriam
HCP 1 L 1 OG 2 RIP 4

Simpson, Aroza
HCP 1 L 1 OG 2 RIP 4 SG 1

Simpson, Aroza
GC 7 HCP 2 L 1 RIP 4 SG 1

Simpson, Dennis
GC 7 GC 10 I 1 L 1

Simpson, Julie
HCP 1 HCP 7 L 1 SG 6 TIM 1

Simpson, Richard L.
HCP 1 OG 1 RIP 4

Sinek Yardis, Yonah
OG 1

Singer, Nora
HCP 1 OG 1 RIP 4

Singer, Nora
HCP 1 OG 1 RIP 4

Singh Khalsa, Mha Atma
GC 5 HCP 1 HCP 2 L 1 OG 1 OG 2 TIM 1 WA 1
WAT 2 WNSO 1

Singleton, Marlon
HCP 1 L 1 OG 2

Sinsheimer, Amy
HCP 1 L 1 OG 2 RIP 4 WMM 1

Sinsheimer, Carol
L 1 OG 2 RIP 1 RIP 4 SG 1 WAT 6 WMM 1

Sismondo, Lori
E 4 GC 5 L 1 MON 1 OG 1

Sissons II, Gilbert M.
P 2

Sitton, Schaunna
HCP 1 OG 1 RIP 4

Situm, Lori
HCP 1 OG 1 RIP 4

Sively, Steven Ft.
GC 8 HCP 1 L 1

Skaarup, Matthew
OG 1 P 1

Skelly, John
HCP 1 L 1

Skims, John P.
HCP 1 RIP 4

Skolnick, Heidi
HCP 1 L 1

Sky, Jim
OG 1

Sky, Valerie
OG 1

Sky, Valerie
HCP 1 RIP 4 TIM 3 TIM 6 TIM 9 WAT 2

Slanilir, Phyllis
HCP 1

Slaughter, Marshawen
HCP 1 HCP 2 OG 1 RIP 4

Slaughter, Marshawen
GC 8 HCP 1 HCP 2 P 1 RIP 4 WAT 2 WMM 1

Slaviem, Mike
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 TIM 1 WAT 3
WNSO 1

Slavin-Low, Diane
HCP 1 OG 1

Slay, Jennifer
OG 1 P 1 RIP 1 TIM 6 WAT 2

Sloan, Glenda
GC 10 HCP 1 HCP 2 L 1 OG 2 SG 1 TIM 1 TIM 3
VEG 2 WMM 1 WNSO 1

Smail, Catherine R.
OG 1 RIP 4

Smail, Catherine R.
HCP 1 OG 1 WAT 1

Small, Kathy
HCP 1 OG 2

Small, Kathy M.
HCP 1 OG 1

Small, Terry
HCP 1 OG 1

Small, Terry E.
HCP 1 OG 1

Smedberg, Jeffrey
H 4 HCP 1 L 1

Smiler, Jeff
HCP 1 OG 1

Smiley, Pat
OG 1 RIP 4

Smith, Bret L.
GC 8 GC 10 HCP 1

Smith, Cassie
GC 7 HCP 1 | 1

Smith, Chris 0.
GC 7 GC 10 | 1 L 1

Smith, David
OG 1 RIP 4

Smith, Gary D.
HCP 1 OG 1 RIP 4

Smith, Geoffrey W.
HCP 1 L 1 OG 1 OG 2 RIP 1 WAT 3

Smith, Laura Wooley
| 1

Smith, Lawrence W.
HCP 1 L 1 TIM 1

Smith, Marie E.
HCP 1 OG 2 RIP 4

Smith, Melanie
HCP 1 L 1 OG 2

Smith, Mike
H 4 HCP 1 L 1 OG 1 RIP 4 SG 1 TIM 1 WAT 3
WNSO 1

Smith, Mrs. David P.
HCP 1 OG 1

Smith, Ronald E.
GC 8 GC 10 HCP 1

Smith, Summer
HCP 1 OG 1

Smith, Summer
OG 1

Smith, Todd C.
GC 8 HCP 1 L 1 OG 1

Smith, William M.
GC 12 OG 1

Smithyman, Austin
HCP 1 OG 1 RIP 4

Smithyman, Drew
HCP 1 OG 1 RIP 4

Smithyman, John
HCP 1 OG 1 RIP 4

Smithyman, Owen
HCP 1 OG 1 RIP 4

Snead, Judith L.
HCP 1 OG 1 RIP 4

Sneed, John
E 5 HCP 6

Sneed, Nathan
HCP 1 OG 1

Sneed, Nathan
HCP 1

Snow, Berk
GC 8 GC 10 HCP 1 L 1 OG 1

Snow, Berk

GC 13 HCP 1 RIP 8 SG 1

Snowman, Clifford E.
OG 1 RIP 4

Snyder, Anne P.
GC 8 GC 10 HCP 1 L 1 OG 1

Snyder, Dana
HCP 1 OG 1 RIP 4

Snyder, Eyen
HCP 1 OG 1 RIP 4

Snyder, Joanna
HCP 1 HCP 4 OG 1 WNSO 1

Snyder, Julie
HCP 1 OG 1

Snyder, Spencer
HCP 1 OG 1 RIP 4

Snyder, Stu
HCP 1 OG 1 RIP 4

Sokolinsky, Joseph
GC 5 GC 10 HCP 1 L 1 OG 1 RIP 4 SG 6 TIM 3
WAT 3 WMM 1

Sokolinsky, Joseph
GC 10 H 1 HCP 1 HCP 2 L 1 OG 1 RIP 4 SG 1

Sokolinsky, Myrna
GC 10 HCP 1 HCP 2 L 1 RIP 4 SG 1 WAT 3 WMM 1
WMM 3

Sokolinsky, Myrna
GC 10 H 1 H 2 L 1 OG 1 RIP 4 SG 1 TIM 3
WAT 3 WMM 1 WNSO 1

Solberg, Jerome
GC 7 GC 8 L 1 MON 1

Solberg, Jerome
E 1 HCP 1

Soles, Louise
HCP 1 OG 1 RIP 4

Solinsky, Frank
HCP 6

Solis, Alex
I 1 OG 1

Solis, Alex
HCP 1 L 1 OG 1

Solo, C.B.
GC 7 GC 8 HCP 1 L 1 OG 1 RIP 4 SG 1 SG 6
TIM 1 WAT 3 WNSO 1

Solo, C.B.
GC 8 HCP 1 L 1 OG 1 RIP 4 SG 1 TIM 1 WAT 2
WAT 3 WNSO 1

Solomon, Phyllis
GC 8 GC 10 HCP 1 L 1 OG 1

Solomon, Rachel
HCP 1 TIM 1

Soltz, Richard
OG 1

Soman, Laurie A.
HCP 1 OG 1 RIP 4

Sondheim, David
HCP 1 OG 1 RIP 4

Sondin, Janet
HCP 1 L 1 OG 2 TIM 1

Sopjes, Barbara
GC 7 GC 8 HCP 1 HCP 2 L 1 RIP 4 SG 3 WAT 2
WAT 6

Sorenson, Deb
HCP 1 OG 1 RIP 4

Sotelo, Vanessa
HCP 6

Sotelo, Vanessa
HCP 6

Soucy, Margaret Noel
E 3 HCP 1 HCP 2 HCP 8 L 1 OG 1 RIP 6 SG 1
TIM 3 WAT 3 WMM 1

Sowkey, Clarence
HCP 1 OG 1 OG 2 RIP 7

Spangle, Keith M.
GC 7 GC 10 I 1 L 1

Sparks, Cammie F.
HCP 1 OG 1 RIP 4

Sparling, Katharine & Bill
HCP 1 OG 1 RIP 4

Spater, Cheryl
HCP 1 OG 1

Spear, Charles
HCP 1

Spear, Charles S.
OG 1

Speciale, Robert
HCP 1 RIP 4 TIM 6

Speece, Ralph & Suzanne
HCP 1 OG 1 RIP 4

Speece, Ralph & Suzanne
HCP 1 OG 2 RIP 4

Speier, Linda L.
GC 7 HCP 1 L 1 RIP 4 WAT 2

Spencer, Saphia
OG 1 RIP 4

Speniawski, Mark
HCP 1 L 1 OG 2 SG 1 TIM 1 TIM 3 VEG 2 WMM 1
WNSO 1

Spicher, Michelle Katreen
HCP 1 MON 1 RIP 4 SG 7

Spiegel, Raoul
HCP 1 RIP 4

Spiegel, Sabrina
GC 8 GC 10 HCP 1

Spielman, Tamarie
HCP 1 OG 1 RIP 4

Spielman, Tamarie
HCP 1 OG 1 RIP 4

Spitaleri, Richard

HCP 1 RIP 4

Spoerer, Mary
HCP 1 OG 1 RIP 4

Spottswood, Dana
HCP 1 OG 1 RIP 4

Sprague, Carrie
OG 1

Sprague, Marguerite
GC 8 HCP 1 OG 1 RIP 4

Sprecher, Nina
GC 8 H 2 L 1 OG 1 P 1 TIM 1

Spreitzer, Francis F.
GC 8 L 1 OG 1 RIP 4 SG 1

Spring, David & Christine
HCP 1

Spring, David & Christy
HCP 1

Springer, John
GC 7 HCP 3 I 1 OG 1 TIM 3

Sproat, Kezia Vanmeter
HCP 1 HCP 2 OG 2

Sredanovic, Gail
HCP 1 OG 1 RIP 4

Sredanovic, Gail
GC 9 L 1 OG 2 P 1 RIP 4

Sreniawski, Mark
GC 8 GC 10 HCP 1 HCP 2 L 1 OG 1 OG 2 TIM 1
VEG 2 WMM 1 WNSO 1

Stack, M.
OG 1

Stahle, Wallace
HCP 1 OG 2 TIM 1

Stahler, Alan
L 1 P 1

Stamon, Nick
GC 7 GC 10 HCP 1

Stanewick, Richard & Phyllis
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Stanfield, James Scott
HCP 6

Stanley, Bea
H 2 HCP 1 HCP 2 L 1 OG 2

Stanley, Robert
HCP 1 OG 1

Stansbury, Susan
HCP 1 L 1 RIP 4 SG 1 SG 3 TIM 1 WAT 3

Stansbury, Susan
GC 7 HCP 1 I 1 RIP 4 SG 1 SG 3 WAT 2 WAT 3

Stansbury, Susan
GC 7 HCP 1 RIP 4 SG 1 SG 3 SG 6 TIM 1 WAT 2
WAT 3

Stansbury, Susan
GC 7 HCP 1 HCP 2 L 1 RIP 4 SG 1 SG 3 TIM 1
WAT 2 WAT 3

Stansova, Natalia Anna
GC a GC 10 HCP 1

Stark, Loren
P 1

Starkey, Loretta
HCP 1 OG 1 RIP 4

Starkweather, Matthew
E 3 GC 7 HCP 1 L 1 OG 1 TIM 1 WAT 5

Starkweather, Matthew
E 3 GC 7 HCP 1 L 1 OG 1 RIP 4 TIM 1

Starkweather, Matthew
A 1 HCP 1 L 1 OG 2 RIP 4 TIM 1

Starkweather, Matthew
GC 5 HCP 1 L 1 OG 1 RIP 4 WAT 5

Starr, Peter
E 1 GC 13 H 1 HCP 1 TIM 5 WAT 2

Starr, Sara
HCP 1 L 1 MON 1 RIP 4 RIP 5 SG 1

Statler, Duane
GC 7 GC 10 I 1 L 1

Staton, Daniel
HCP 1 OG 1 RIP 4

Staveley, Jennifer
HCP 1 OG 1

Steadman, Lee
HCP 1 OG 1 RIP 4

Stealburg, Jan
HCP 1

Stearns, Catherine
HCP 1 OG 1 RIP 4

Stearns, Catherine
E 4 OG 1 RIP 4

Steel, Patricia
HCP 1 OG 1 SG 1

Steel, Patricia
F 4 HCP 1 OG 1

Steel, Peter
HCP 1

Steel, Peter
GC 8 HCP 1

Steger, Michael
GC a GC 10 HCP 1

Steiger, Joe
HCP 1 OG 1

Stein, Alan
HCP 1 RIP 4

Stein, Lyn
GC 5 GC 10 HCP 3 HCP 4 MON 1 OG 1 OG 2 RIP 4

Steinberg, Stephanie
GC 5 OG 1 RIP 4

Steinberger, Joseph
HCP 1 OG 1 RIP 4

Steisslinger, Mary Beth
HCP 1 I 1 OG 1

Stenad, George
GC 5 H 4 HCP 1 HCP 2 HCP 4 L 1 OG 2 RIP 4
SG 1 WAT 2

Stenton, Genelle
GC 8

Stephens, Dave
HCP 1 OG 1 OG 2 RIP 4

Stephens, Natalie
HCP 1 OG 1

Stephens, et al., Dave
HCP 1 OG 1 RIP 4 TIM 1

Stern, Zack
HCP 1 OG 1 SG 1

Stevens, David C.
GC 8 HCP 1 HCP 2 HCP 5 L 1 RIP 5 RIP 7 TIM 1
WAT 3 WMM 1

Stevens, David C.
E 4 GC 8 HCP 1 L 1 TIM 1 WAT 3

Stevens, et al., Eileen
HCP 1 L 1 OG 2 RIP 4

Stevenson, Linda L.
HCP 1 OG 1 RIP 4

Stevenson, Wendy
HCP 6

Stewart, Brandt
OG 1 RIP 4

Stewart, Charles
HCP 1 L 2 OG 1

Stewart, Chris
HCP 1 OG 1 RIP 4

Stewart, Connie
GC 7 HCP 1 L 1 RIP 3 RIP 7 WMM 1 WNSO 1

Stewart, J
HCP 1 OG 1 RIP 4

Stewart, Jennifer
HCP 2 L 1 OG 1 RIP 4

Stiegler, Kristen
E 4 GC a GC 10 HCP 1 HCP 2 L 1 OG 2 RIP 4
SG 1 SG 2 TIM 1 VEG 2 WMM 1 WNSO 1

Stillwell, S.P.
HCP 1 OG 1

Stine, Carol J.
HCP 1 L 1 OG 1

Stirrup, Keith
GC 7 GC 9 OG 1

Stocker, James D.
GC 10 HCP 1 OG 1

Stocker, Patricia G.
GC 10 HCP 1 OG 1

Stone, Valerie
GC 5 GC a GC 10 HCP 1 L 1

Stone / Fojt, Winifred / Robert
HCP 1 OG 1 RIP 4

Stone / Fojt, Winifred / Robert
HCP 1 OG 1 RIP 4

Stone, et al., Michael
GC a HCP 1 HCP 2 RIP 4 TIM 1

Stoner, Dawn E.
HCP 1 OG 1 RIP 4

Stoner, Nadine
GC a HCP 1 HCP 2 HCP 3 L 1 OG 1 OG 2 RIP 4
SG 1 TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Storre, Rick
GC 7 GC a HCP 1 HCP 3

Storre, Rick
GC a HCP 1 L 1

Story, Darryle
GC 7 GC a HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1
TIM 1 WAT 3 WAT 6 WMM 1 WNSO 1

Stouffer, Margaret
OG 1

Stowe, Richard
E 3 GC 9 HCP 1 L 1 OG 2

Stowe, Rudolph H.
GC 5 HCP 1

Stowell, Michael
GC 8 HCP 1

Strachan, Don
GC 8 GC 10 HCP 1 L 1 OG 1

Strain, Kathy
HCP 1 OG 1

Straka, Mishka
E 4 GC 8 H 1 H 2 H 4 HCP 1 HCP 2 L 1
SG 1 TIM 1 TIM 3 TIM 5

Strand, Erin
HCP 1 OG 1 RIP 4

Strand, Erin
HCP 1 OG 1 RIP 4

Strange, Josh
H 2 H 3 H 4 HCP 1 RIP 1 RIP 4 TIM 1 WAT 4

Strange, Josh
F 1 H 3 H 4 HCP 1 OG 2 RIP 4 TIM 1 WAT 4

Straub, C
P 1 TIM 1

Strauss, Art & Cindy
GC 7 HCP 1 I 1

Streete, April
HCP 1 RIP 4 TIM 1

Strickler, David M.
GC 8 HCP 1

Stroh, Malen
HCP 1 OG 1 RIP 4

Stroh, Malen
HCP 1 OG 1 OG 2 RIP 4

Strong, Diana

F 1 HCP 1 HCP 4 RIP 8 SG 1 WAT 1

Stroot, Angela
GC 8 GC 10 HCP 1

Strote, Mary Ellen
E 1 HCP 1 RIP 4

Struad et al., George
GC 5 H 4 HCP 1 HCP 2 L 1 RIP 4 SG 1

Struthers, Fred
GC 8 HCP 1 HCP 2 L 1 TIM 1 WAT 3 WNSO 1

Struthers, Julia
HCP 1 OG 1

Struthers, Julia D.
HCP 1 OG 1

Struthers / Burum, Stephen / Amby
HCP 1 L 1 OG 1 SG 1

Struven, Jerilyn
HCP 1 OG 1 RIP 4

Struven, Kenneth
HCP 1 OG 1 RIP 4

Struven, Kenneth
HCP 1 HCP 2 OG 1 RIP 4

Struven, Kenneth C.
HCP 1 OG 1 RIP 4

Stuckey, Jr., James C.
E 5 HCP 6

Sucato, Mea
E 1 HCP 1 RIP 4

Such, Richard & Jane
GC 7 OG 1

Sueen, Anne-Lise M.
HCP 1 OG 1 RIP 4

Sullivan, Brendan
OG 1

Sullivan, Jesse
GC 8 HCP 1 L 1 WA 1 WAT 1 WAT 4

Sullivan, Ryan R.
RIP 5 SG 6

Sullivan, Susan
HCP 1 OG 1

Sullivan, Susan
HCP 1 OG 1

Summers, Joan
HCP 1 OG 1 RIP 1 RIP 4

Summers et al, Autumn
GC 8 HCP 1

Sumner, E.A.
HCP 1 OG 1

Suronen, R
HCP 1 OG 1 RIP 4

Suronen, R.
HCP 1

Sussman, Anne
HCP 1 OG 1 RIP 4

Sussman, Paul
HCP 1 OG 1 RIP 4

Sutherland, Stephanie
OG 1 RIP 4

Sutherland, Stephanie
OG 2 RIP 4 TIM 3

Sutkowski, Marilyn
GC 5 HCP 1 OG 1

Sutter, David
GC 7 GC 10 HCP 1 L

Sutter, Lori
HCP 1 OG 2 RIP 4

Sutton, Linda
HCP 1 L 1 OG 1 OG 2 SG 1

Sutton, Rebecca
HCP 1

Sutton, Rebecca
HCP 1 HCP 2 WA 1 WMM 1

Sutton, Rebecca
GC 8 HCP 1 P 1

Suzuki, Diane
HCP 1 L 1 L 2 SG 1

Swalberg, Wilfred M.
HCP 1 HCP 3

Swan, Lucie
HCP 1 OG 1

Swan, P
GC 8 GC 10 HCP 1

Swan, Roger
GC 7 GC 10 I 1 L 1

Swanson, Jennifer
HCP 1

Swanson, Jenny
HCP 1 OG 1

Swanson, John R.
HCP 1 L 1 OG 1 TIM 1 WAT 5 WMM 1 WNSO 1

Swanson, Paula
F 1 GC 8 HCP 1 L 1 RIP 4 SG 1 SG 7 TIM 1

Swanson, Paula
GC 7 H 4 OG 1 TIM 1 TIM 3

Swanson, Paula
HCP 1 OG 1 TIM 5

Swanson, Rick E.
HCP 1

Sward, Jean
GC 8 GC 10 HCP 1 L 1 WAT 2

Swecker, Susan
GC 8 HCP 2 L 1 RIP 1 RIP 5 SG 1 TIM 1 WAT 3
WMM 1 WMM 2 WNSO 1

Sweeney, Jerry
GC 7 GC 10 I 1 L 1

Sweet, Holly
GC 8 HCP 1 OG 1

Swensen. Kei

HCP 1 OG 1 RIP 4

Swift, Andrea
HCP 1 OG 1

Syed, Sarah
HCP 1 OG 1 RIP 4

Syed, Sarah
OG 1 RIP 4

Sykora, Samantha
HCP 1 OG 1

Symons, Jay
GC 7 GC 10 I 1 L 1

Szabo, Lynn
E 4 HCP 1

Tabor, Theodore
HCP 1 OG 1

Tabor, Theodore
HCP 1

Taerie, Alain
HCP 1 OG 1

Taft, Ramond & Zada
HCP 1 OG 1 RIP 4

Tagariello, Mike
GC 7 GC 10 I 1 L 1

Tagariello, Philip
GC 7 GC 10 I 1 L 1

Taggart, Kyle
GC 7 GC 10 I 1 L 1

Talamo, Dave
HCP 1 OG 1 RIP 4

Tallerico-Salopek, Elena
HCP 1 OG 1

Tamasi, Judi
HCP 1 OG 1

Tamasi, Judi
A 1 GC 5 OG 1

Tamasi, Judi
HCP 1 OG 1

Tamkin, Caren
HCP 1

Tamkin, Caren
HCP 1

Tamkin, Caren
HCP 1

Tan, Nick
HCP 1 L 1 MON 1

Tanenbaum, Laurie
GC 7 GC 8 HCP 1 RIP 4 TIM 1 WAT 3

Tang, Amy
GC 5 GC 8 HCP 1 L 1 OG 2 SG 1

Tanzer, John P.
GC 7 GC 10 | 1 L 1

Tarjan, Jim
HCP 1 I 1 L 1 OG 1 OG 2 RIP 7 SG 1 WAT 3

Tauscher, Larry
HCP 1 OG 1 RIP 4

Tauscher, Larry
HCP 1 OG 2 RIP 4

Tavsches, Abby
HCP 1 OG 1

Taylor, Bianca
HCP 1 OG 1

Taylor, Bill
GC 7 GC 8 HCP 2 HCP 3 L 1 OG 1 RIP 4 TIM 1
WNSO 1

Taylor, Cynthia H.
E 4 GC 8 GC 10 HCP 2 L 1 RIP 4 SG 1 TIM 1
WAT 2 WAT 3 WAT 5 WMM 1 WNSO 1

Taylor, Denise
F 1 HCP 2 L 1 RIP 2 RIP 4 WAT 4

Taylor, Donald P.
HCP 6

Taylor, Ellen
E 1 HCP 1 SG 6

Taylor, Ellen
F 3 GC 8 GC 13 HCP 1 I 1 L 1 MON 2 OG 1
RIP 3 RIP 6 SG 1 SG 3 SG 6 WAT 2

Taylor, Ellen
E 1 E 4 HCP 1

Taylor, Ellen
GC 2 GC 18 L 1 MON 1 RIP 3 RIP 4 SG 3 TIM 1
WAT 1 WAT 3 WAT 4 WAT 5

Taylor, Ellen E.
HCP 1 SG 1

Taylor, Gary A.
HCP 1

Taylor, George
HCP 1 OG 1

Taylor, Jessica
HCP 1 OG 1

Taylor, Jo Lynn
HCP 1 OG 1 RIP 4

Taylor, Ken
HCP 6

Taylor, M
H 1 HCP 1 HCP 2 I 1 L 1 TIM 6 WAT 3

Taylor, Nat
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Taylor, Regina
HCP 1 HCP 3 I 1 L 1 OG 2 P 1 RIP 4

Taylor, Regina
E 1 HCP 1 HCP 2 RIP 4 SG 1

Taylor, Rose
HCP 1 OG 1

Taylor, Russell
HCP 1 OG 1

Taylor, Steve
OG 1 RIP 4

Taylor, Stone
HCP 1 OG 1 RIP 4

Taylor, Tina
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1 WAT 3
WMM 1 WNSO 1

Taylor et al., Gary
E 1 GC a HCP 1 HCP 2 L 1 OG 2 RIP 4 RIP 5
RIP 7 SG 6 TIM 1 WNSO 1

Teague, Rebecca
HCP 1 OG 1 RIP 4

Tebbut, Chris
GC 17 HCP 1 L 1 MON 1 OG 1 OG 2 SG 1 TIM 1
TIM 3 VEG 2 WAT 2

Tebbutt, Chris
HCP 1 HCP 2 HCP 5 I 1 OG 1 TIM 1 TIM 6 WAT 2
WAT 6

Teepoorten, Ann M.
HCP 1 OG 1 RIP 4

Teh, Jen Lee
GC a HCP 1 OG 2

Teitelbaum, Brian
HCP 1 I 1 RIP 3 WAT 2

Temple, Teresa
HCP 6

Tendick, Timothy
HCP 1 OG 1 RIP 4

Tennant, William P.
HCP 1 OG 1 RIP 4

Tenorio, Robie
E 4 F 1 H 2 HCP 1 HCP 3 MON 1 OG 2 RIP 3
RIP 4 SG 1 SG 6 WAT 4 WAT 6 WMM 1 WNSO 1

Tescher, Shaun M.
OG 1 RIP 4

Teshima, Taeko
GC a GC 10 HCP 1

Tesler, Pauline
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

Tesler, Pauline
HCP 1 HCP 3 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 2
WAT 6 WMM 1

Tesler, Pauline H.
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 6 WMM 1

Tezak, Joan
GC 7 HCP 1

Tezak, Joan
GC 7

Tezak, Sage
E 4 GC 7 HCP 1 I

Tezak, Sage
GC 7 HCP 1 I 1

Tezak, Sage
E 4 GC 7 HCP 1

Thai, Ariella
HCP 1 HCP 2 HCP 4 L 1 OG 2

Thayer, Bob
OG 1 RIP 4

Theisen, Elizabeth
HCP 1 OG 1 RIP 4

Theobald, Julie
GC 9 HCP 1

Thesen, Sven
GC 10 HCP 1 HCP 2 L 1 RIP 1 RIP 4 SG 1 SG 3
TIM 1 WAT 3 WMM 1 WNSO 1

Theule, Heidi
HCP 1 L 1 OG 1

Thiele, Traci
HCP 1 HCP 4 L 1 MON 1 RIP 1 RIP 4 WMM 1 WNSO 1

Thiss, T. N.
GC a GC 10 HCP 1

Thomas, John
E 4 HCP 1 L 1 RIP 8 WAT 2

Thomas, Rose M.
HCP 1 OG 1

Thomas, Shirl
HCP 1 OG 1

Thompson, Charles
HCP 1

Thompson, Claudia
GC 7 HCP 1 I 1 L 1 OG 1 WAT 3

Thompson, Joanne
HCP 1 OG 1 RIP 4

Thompson, Jon
HCP 2 OG 1 OG 2 RIP 4 WAT 2

Thompson, Jon
HCP 2 OG 1 RIP 4 WAT 2

Thompson, Larry H.
GC 8 HCP 1 I 1

Thompson, Pamela
HCP 1 OG 1

Thompson, Pamela
HCP 1

Thompson, Scott
HCP 1

Thompson, Scott W.
GC 8

Thompson, Steve
HCP 1 OG 1 OG 2

Thompson, Steve
HCP 1 OG 1

Thompson-Dolorier, Lisa
HCP 1 OG 1 RIP 4

Thompson-Dolorier, Lisa
HCP 1 OG 2 RIP 4

Thomson, Janis
HCP 1 RIP 4

Thomson, Michael
GC 8 HCP 1 L 1 SG 1 TIM 1

Thomson, Patrisha
GC 10 OG 1

Thornbury, James
HCP 6

Thorne, Beowulf J.
GC 7 GC 9 I 1

Thorne, Matt
E 4 GC 7 GC 10 HCP 1 HCP 2 RIP 4 TIM 1 VEG 2
WAT 3 WMM 1 WNSO 1

Thorne, Matt
E 4 GC 8 GC 10 HCP 1 L 1 L 2 RIP 4 VEG 2
WAT 3 WMM 1 WNSO 1

Thorniley, Scott
OG 1 RIP 4

Thrane, Colette & Ivan
HCP 1 I 1

Threat, Channa J.
HCP 1 OG 1 RIP 4

Thron, Doug
HCP 1 I 1 L 1

Thunen, Erif
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 TIM 1 WAT 3
WMM 1 WNSO 1

Thurston, Wesley
F 1 L 1 RIP 7 TIM 1 WAT 2

Thybers, Colin
HCP 1 OG 2 RIP 4 TIM 1

Thys, Danielle
HCP 1 OG 1

Thys, Danielle
HCP 1 OG 1 RIP 4

Tiberman, Andrew
HCP 1 OG 1

Tidwell, Julia
HCP 1 RIP 4 SG 6

Tifft, Katie
HCP 1 HCP 3 L 1 OG 1 RIP 4 WAT 3 WMM 1

Tilles, Sandra
GC 7 HCP 1 HCP 2 L 1 SG 6 TIM 1 WAT 3

Tilles, Sandra
HCP 1 HCP 2 L 1 SG 1 TIM 1 WAT 3

Timblin, Michael
GC 7 GC 10 I 1 L 1

Timm, Dr. Herman
HCP 1 OG 1 RIP 4

Timmerman, Joe
HCP 6

Tinay, Pieta M.
HCP 1 OG 1

Tingley, Nancy
HCP 1 OG 1 RIP 4

Tipper, Marion
HCP 1

Tisa, Eseabar
HCP 1

Tobey, Gary
GC 8 GC 10 HCP 1

Todd, Jessica
HCP 1 L 1

Todd, Jessica
HCP 1 L 1

Todd, Laura
GC 8 HCP 1 L 1 OG 1 P 1 TIM 1 WAT 2

Todd, Laura D.
GC 10 HCP 1 MI 1

Todd, Mike
E 5 HCP 6 HCP 7

Tokarz, Lisa
GC 8 GC 10 HCP 1

Toldi, Cathy
HCP 1 L 1 OG 1

Toler, Kevin
E 5 HCP 6

Tomasetti, Paula J.
HCP 1 OG 1 RIP 4

Tomich, Stephen
HCP 1 OG 1 RIP 4

Tompkins, Christal
HCP 1 OG 1 RIP 4

Tong, Jeffrey
HCP 1 HCP 4

Torres, Crystal
OG 1 RIP 4 TIM 1 WAT 2

Torres, Crystal
OG 1 RIP 4 SG 1 TIM 3

Torres, Mickey M.
OG 1

Torres, Oscar
HCP 1 OG 1 RIP 4

Torres, Susana
GC 8 HCP 1

Torrisi, Scott
GC 7 GC 10 I 1 L 1

Toscano, Nancy
HCP 1 OG 1

Toumazis, Alex
HCP 1 OG 1 RIP 4

Tout, Michael & Nancy
F 1 GC 6 GC 7 GC 8 HCP 1 L 1 LU 1 OG 2
P 1 WAT 2 WMM 1 WNSO 1

Townsend, Carolyn
HCP 1 HCP 2 RIP 4 TIM 1 TIM 5

Townsend, Carolyn
HCP 1 HCP 2 L 1 RIP 4 SG 1 TIM 1

Trabin, Eitan

HCP 1 OG 1

Trabin, Ethan
HCP 1 OG 2

Trace, Alvina A.
HCP 1 OG 1 RIP 4

Trager, Stephanie
GC 7 GC a H 1 H 2 HCP 1 HCP 2 L 1 OG 1
OG 2 RIP 4 SG 1 SG 3 TIM 1 WAT 3 WAT 6 WMM 1
WNSO 1

Traywich, Janie
HCP 1

Treible, Dax
HCP 1 OG 1 RIP 4

Treible, Gael
HCP 1 OG 1 RIP 4

Treible, James
HCP 1 OG 1 RIP 4

Treible, Jayce
HCP 1 OG 1 RIP 4

Tringali, Joe
HCP 1 OG 1 RIP 4

Triplett, Lency
HCP 1 HCP 3 TIM 1

Triplett, Nell
GC a H 1 HCP 1 | 1 L 1 OG 1 RIP 4 TIM 3

Triplett, Nell
H 4 HCP 1 | 1 RIP 4 TIM 3 WAT 1

Tripp, John
HCP 1 OG 1

Tripp, Robert C.
HCP 1 OG 2

Trippet, Bill
OG 1

Trippet, Connie
GC a GC 10 HCP 1

Tritel, Cathie
HCP 1 L 1 OG 1 OG 2

Trivedi, Pragya
HCP 1 OG 1 RIP 4

Trivedi, Pragya
HCP 1 OG 1 RIP 4

Trost / Robertson, Ed / Jayne
HCP 1 OG 1 RIP 4

Trouman, Jeffrey
HCP 1 OG 1 RIP 4

Truase, Julie & Donatina
HCP 1 I 1

Trucedell, Alfred
HCP 1 OG 2

Truesdell, Rueford
HCP 1 OG 1

Tsang, Jeffrey V.
GC 7 GC 9 OG 1

Tsang, Wallace
GC 7 GC 9 OG 1

Tseng, Joyce
GC 7 HCP 1 L 1 OG 1

Tsu,
HCP 1 L 1

Tucker, Douglas E.
HCP 1 OG 1 RIP 4

Tucker, Lisa N.
HCP 1 OG 1 RIP 4

Tucker, Patrick
GC a GC 12 HCP 1 OG 1

Tucker, Patrick
GC a HCP 1 OG 2

Tudorof, Paula
GC a GC 10 HCP 1

Tudorof, Paula
GC a GC 10 HCP 1

Tudorof, Paula
GC 7 GC 8 GC 10 HCP 1

Tuff, Paul David
RIP 1 RIP 5 RIP 7 SG 1 SG 6

Tufts, Jim
GC 7 GC 10 I 1 L 1

Tuite, Bernadette
H 2 HCP 1 L 1 TIM 1

Tuite, Bernie
HCP 1 RIP 4

Tuler, Jeremy
HCP 1 OG 2 RIP 4 TIM 1 WAT 6 WMM 1

Tullman, Maribelle
GC 8 OG 1

Tunick, Janet
GC 8 GC 10 HCP 1 L 1 OG 1

Turnbull, Vivian W.
GC 7 OG 1

Turner, Barbara C.
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Turner, Beth
GC 7 L 1

Turner, Beth R.
HCP 1 L 1

Turner, Geoff & Margaret
HCP 1 OG 1 RIP 4

Turner, Jeanne M.
HCP 1

Turner, Jessica
WMM 1 E 4 GC 8 GC 10 HCP 1 HCP 2 L 1 OG 1
TIM 1 WNSO 1

Turner, Kathrin K.
HCP 4 RIP 1 RIP 2 WAT 2

Turner, Matt
HCP 4 RIP 1 RIP 2 WAT 2

Turner, Mike
HCP 4 RIP 1 RIP 2 WAT 2

Turner, Milo
HCP 1

Turner, Milo
OG 2

Turner, Nancy
OG 1

Turner, Randy
F 1 F 2 HCP 1 L 1 WAT 2 WAT 4

Turner, Walt
OG 1

Turner, Walt
OG 1

Turner-McKibben, Ann L.
GC 8 HCP 1 RIP 4 WMM 1

Tuthill, Rosalind
HCP 1 OG 1

Tutle, Cynthia
HCP 1 OG 1

Tuttle, Theron
HCP 1 OG 1 RIP 4

Tyler, Pattreesha
HCP 1 TIM 2

Uehara, George Kunio
F 1 HCP 1 HCP 5 L 1 RIP 1 SG 1 WMM 1

Ujifusa, Summer
HCP 4 L 1 OG 2 SG 6 WAT 2 WAT 3

Uline, Rebecca
HCP 1 OG 2 RIP 4

Ungar, Avital
OG 1

Unterberger, Karen
HCP 1 HCP 2 OG 1

Unterberger, Tina
HCP 1 HCP 5 RIP 1 SG 1 WMM 1

Upton, Erica
GC 13 HCP 1

Ural, Catherine
L 1 OG 1 OG 2 RIP 7 SG 1 WAT 3

Ural, et al., Catherine
L 1 OG 2 RIP 4

Urena, Melissa
OG 1

Urso, Bobbie Lee
GC 8 HCP 1 L 1 OG 1

Usdyk, Carol
HCP 1 OG 1 RIP 4

Uttley, Jason
GC 8 GC 10 HCP 1

VINSON, D.S.
GC 9 HCP 1

Vails, Lena
HCP 1 OG 1

Vaitla, Bapu
GC 8 HCP 1 HCP 2 L 1 TIM 1

Valdes, Ruth
HCP 1 OG 1 RIP 4

Valdes, Ruth
HCP 1 OG 1 RIP 4

Valentine, Kathy
HCP 1 OG 1

Valero, Veronica C.
HCP 1 OG 1 RIP 4

Valero, Veronica C.
HCP 1 OG 1 RIP 4

Vallindras, Mark & Nina
HCP 1 OG 1

Valois, Denis
HCP 6

Van Alstyne, Richard
HCP 1

Van Brunt, Robert
HCP 1 OG 1 RIP 4

Van Druten, Kirk
HCP 1 OG 1 RIP 4

Van der Wyk, Lucille
HCP 1 OG 1 RIP 4

VanBrocklin, David
GC 8 GM 1 HCP 1 WAT 4 W M M 1

VanHardenbrock, M.
HCP 1 L 1 OG 1

VanLitt, Larry C.
GC 9 HCP 1

VanOosbree, David
HCP 1

VanValen, Jim
HCP 1

VanVoochis Family,
HCP 1 OG 1

Vangolde, Cory
HCP 1 OG 1

Vaquer, Patrick A.
GC 8 GC 10 HCP 1

Varga, Norma
GC 8 GC 10 HCP 1

Vargas, Heidi
HCP 1 OG 1 RIP 4

Varich, Laura J.
HCP 1 OG 1

Varner, David
HCP 1

Varney, Spring
GC 8 HCP 1 HCP 2 RIP 5 RIP 7 TIM 1

Varon, Charlie
RIP 4

Vassiah, Dorinda
HCP 1

Vaughn, Linda
HCP 1 OG 1

Vaughn, Mark
HCP 1 OG 1 RIP 4

Veach, et al., Dave
HCP 1 HCP 3 RIP 4

Venhuizen, David
H 2 HCP 1 L 1 L 2 RIP 4 SG 1 SG 6 TIM 3

Venhuizen, David
HCP 1 RIP 4

Ventresco, Annie
OG 1 RIP 4

Ventura, Maxina
H 1 HCP 1 L 1

Venturi, Karen
HCP 1 OG 1 RIP 4

Venturi, Steve
HCP 1 OG 1 RIP 4

Venturine, Diane
GC 13 HCP 1 L 1 RIP 1 SG 1 TIM 3 WAT 2

Vernot, Andrea
HCP 1 OG 1 RIP 4

Veronda, Mary C.
HCP 1 OG 1 RIP 4

Veronda, Mary C.
HCP 1 OG 1 RIP 4

Vetplank, Dorothy
OG 1 RIP 4

Vevoda, Sarah
GC 5 GC 8 HCP 1 L 1 OG 2 TIM 1 WNSO 1

Vicente, Adalverto
HCP 1 OG 1 RIP 4

Vicente, Jose
HCP 1 OG 1 RIP 4

Victor, Arisa
HCP 1 OG 1

Vid, Da
GC 7 HCP 1 HCP 2 I 1 OG 1 OG 2 RIP 4 WMM 1
WNSO 1

Vid, Da
HCP 1

Vid, Da
GC 1 GC 7 GC 8 HCP 3 L 1 MON 1 RIP 4 TIM 3
VEG 2 WMM 1

Vidaner, Judith
F 2 HCP 1 L 1 TIM 6 WAT 6

Viera, Elma
HCP 1 OG 1 RIP 4

Villanedo, Jose
OG 1 WAT 2

Villarreal, Ed & Helene
HCP 1 OG 1 RIP 4

Villevieille, Valentino
HCP 1 OG 1

Villevielle, Dulcinea
HCP 1 OG 1

Vincent, Amber
HCP 1 OG 1 RIP 4

Vincent, Nathaniel
GC 7 GC 8 HCP 1 SG 1 TIM 1 WMM 1 WNSO 1

Vitlacil, Antonio
F 1 GC 8 H 1 H 2 HCP 1 HCP 2 HCP 4 L 1
OG 1 RIP 4 SG 1 TIM 1 WAT 3 WAT 6 WMM 1

Vitlacil, Antonio
GC 8 H 1 H 2 HCP 1 HCP 2 L 1 OG 1 RIP 6
RIP 7 RIP 8 SG 1 SG 3 TIM 1 WAT 3 WMM 1

Vitlacil, Heidi
GC 8 HCP 1 L 1 OG 1 OG 2 SG 3 TIM 1

Vitlacil, Heidi
F 1 GC 8 H 1 H 2 HCP 1 HCP 2 HCP 3 L 1
OG 1 RIP 4 SG 3 TIM 1 WAT 3 WAT 6 WMM 1

Vitlacil, Heidi
GC 5 HCP 1 L 1 OG 1 SG 1 TIM 1

Vitlacil, John
GC 8 HCP 1 L 1 OG 2 SG 1 TIM 1

Vitlacil, John
GC 8 H 1 H 2 HCP 1 HCP 2 HCP 3 L 1 OG 1
OG 2 RIP 4 RIP 5 SG 1 TIM 1 TIM 5 WAT 3 WAT 6
WMM 1

Vitlacil, John
GC 8 H 1 H 2 HCP 1 HCP 2 L 1 OG 2 RIP 4
SG 1 TIM 1

Vitlacil, Laura
GC 8 H 1 H 2 HCP 1 HCP 2 HCP 3 L 1 OG 2
RIP 1 SG 1 SG 3 WAT 3 WMM 1

Vitlacil, Laura
GC 8 H 1 H 2 HCP 1 HCP 2 L 1 OG 1 RIP 6
RIP 7 RIP 8 SG 1 SG 3 TIM 1 WAT 3 WMM 1

Volckmar / Vogel, Kurt / Kristin
GC 7 HCP 1 L 1

Volckmar / Vogel, Kurt / Kristin
GC 7 HCP 1 I 1 L 1 OG 1

Von Holdt, Robert M.
HCP 1 L 1 MON 1

Vosacek, Jennie
GC 7 GC 8 HCP 1 OG 1

Vosacek, Jennie
GC 8 HCP 1

Vosacek, Jennifer
GC 8 HCP 2 L 1 OG 2 RIP 4 TIM 1 WAT 3 WAT 6
WMM 1 WNSO 1

Vynsten, Andie
GC 14

Wachenheim, Sequoiah
RIP 7 SG 1 WAT 3

Wages, John
OG 1 RIP 4

Wages, John
GC 10 HCP 1 OG 1 OG 2 RIP 4

Waggy, Austin G.
GC 7 GC 10 I 1 L 1

Wagner, Bill
HCP 6

Wagner, Elizabeth
F 2 HCP 1 OG 1 RIP 1 RIP 4

Wagner, Elizabeth
HCP 1 OG 1 RIP 4 RIP 10 WAT 4

Wagner, Elizabeth
HCP 1 OG 1 RIP 4 RIP 5

Wagner, Jack
GC 7 GC 10 I 1 L 1

Waites, Angela
P 1

Walden, Martha
HCP 1 L 1 OG 1 RIP 4 TIM 1

Walden, Martha
HCP 1 L 1 OG 2 RIP 4 TIM 1

Walker, Alexander
HCP 1 OG 1 RIP 4

Walker, Alexander & Gloria
HCP 1 OG 2 RIP 4

Walker, Gail K.
HCP 1 OG 1 RIP 4

Walker, Gloria
HCP 1 OG 1 RIP 4

Walker, Nancy
HCP 1 OG 1 RIP 4

Walker, Robert J.
GC 7 GC 10 I 1 L 1

Wallace, Aubrey
HCP 1 OG 1 RIP 4

Wallace, Brian
HCP 1

Wallace, Fred
GC 8 HCP 1 L 1 RIP 4

Wallace, G.
HCP 1 OG 1 RIP 4

Wallace, Marti
HCP 1 L 1 OG 2 TIM 1 WAT 3 WMM 1

Wallen, Norm
GC 8 HCP 1 L 1 OG 1

Wallen, Norm
GC 7 L 1 OG 1

Waller, Marni
GC 7 P 1

Waller, Marni
HCP 1

Walling, Catherine
HCP 1 L 1 RIP 4 TIM 1 VEG 2

Walling, Catherine J.
GC 7 HCP 1 OG 2 RIP 4 TIM 1 VEG 2

Wallridge, Betty
RIP 4

Walsh, Allison
HCP 1 RIP 7 SG 1 SG 6

Walsh, Bill
HCP 1 OG 1

Walters, Christine W.
F 1 F 2 HCP 1 HCP 2 L 1 OG 1 RIP 7 RIP 8
RIP 9 RIP 10 SG 6 TIM 1 WAT 3

Walters / Murcko, Christine / John
F 1 F 2 GC 8 GC 9 HCP 1 HCP 2 I 1 L 1
OG 1 OG 2 RIP 7 RIP 8 RIP 9 RIP 10 SG 6 TIM 1
WAT 3

Walters / Murcko, Christine / John
F 1 HCP 1 HCP 2 L 1 OG 2 RIP 4 TIM 1 WAT 3
WAT 4

Walters / Muroko, Christine / John
F 1 GC 8 GC 9 HCP 1 HCP 2 I 1 L 1 MON 1

OG 1 RIP 1 RIP 4 SG 6 TIM 1 WAT 3 WAT 4

Walthall, Davi
HCP 1 SG 1 TIM 1 TIM 5

Waltnall, Dani
E 4 HCP 1 SG 1 TIM 1

Walwoth, David
HCP 1 RIP 4

Wangler, Michael J.
GC 8 HCP 1 HCP 3 OG 1

Warburton, Michael
GC 8 HCP 1 I 1 L 1

Ward, Barbara
L 1

Ward, Diana
GC 8 GC 10 HCP 1

Wardner, Catherine
GC 8 HCP 1

Wardrip-Fruin, Noah
GC 7 GC 8 H 4 HCP 1 L 1 OG 1 OG 2 RIP 4
TIM 1 WAT 2 WNSO 1

Wardrip-Fruin, Noah
E 1 H 4 HCP 1 L 1 OG 2 SG 1 TIM 1 TIM 3
WAT 6

Wardrip-Fruin, Noah
GC 8 H 4 HCP 1 L 1 RIP 4 SG 1 TIM 1 TIM 3
WMM 1

Warkentin, Wayne
L 1 OG 1 RIP 4 SG 1

Warmowski, Stephen
GC 10 HCP 1

Warner, Barbara
GC 10 HCP 1 OG 1

Warner, Katie
HCP 1 OG 1

Warner, Sara
OG 1 RIP 4

Warner, Sara
OG 2 RIP 4

Warnes, Virginia L.
HCP 1 OG 1 RIP 4

Warren, Lori
HCP 1 RIP 4

Warwick, Lorene
F 1 GC a HCP 1 L 1 RIP 4 SG 1 SG 7

Waschitz, Scott Forest
HCP 1 OG 1 RIP 4

Washburn, Tara
HCP 1 OG 1 RIP 4

Washburn, Tara
HCP 1 OG 1 RIP 4

Wassadadel, Pete
GC 7 GC 10 I 1 L

Wasseman, Daniel
OG 2 TIM 1 TIM 3

Watanabe, Whitney
HCP 1 OG 1 RIP 4

Waters, Alea
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Waters, Alea
F 1 L 1 OG 2 RIP 4 SG 1 SG 7 TIM 1

Waters, Chrislle
HCP 1 OG 1 RIP 4

Waters, Michelle
GC 8 HCP 1 HCP 2 L 1 RIP 4 SG 6 WA 1 WAT 3
WMM 1

Waters, Royce
HCP 1 OG 1 RIP 4

Waters, Tom, Doris & Family
GC 7 GC 9 OG 1

Watiars, Amber
HCP 1 OG 1

Watkins. John

HCP 1 OG 2 RIP 1 SG 1

Watson, Gregory
HCP 1 OG 1

Watson, Suzanne E.
HCP 1 OG 1

Watson, Vaness Jill
HCP 1 OG 1

Watt, Vanessa
HCP 1 L 1 OG 1

Watts, Phoebe
HCP 1 OG 1 RIP 4

Wax, Elisa
HCP 1 L 1 TIM 1 WAT 3

Waxman, Jane
GC 7 HCP 1 HCP 2 I 1 L 1 OG 2 RIP 4 SG 3

Waxman, Jane
HCP 1 HCP 3 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 2
WAT 6 WMM 1

Waxman, Jane
HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 6 WMM 1

Wayburn, Edgar
HCP 1 HCP 2 OG 1 RIP 7 SG 6 TIM 1 WAT 6

Weaver, Damian
GC 7 GC 8 HCP 1 L 1 OG 2 RIP 4

Weaver, Damian
GC 7 GC 8 HCP 1 OG 1 RIP 4

Weaver, Jonah
HCP 1 L 1 OG 2 RIP 4

Weaver, Jonah
GC 8 HCP 1 L 1 OG 1 RIP 4

Weaver, Lang W.
GC 7 GC 10 I 1 L 1

Weaver, Sandy
GC 7 GC 8 HCP 1 L 1 OG 2 RIP 4

Weaver, Sandy
GC 7 GC 8 HCP 1 OG 1 RIP 4 WAT 3

Webb, Loraine
GC 7 HCP 1 HCP 2 I 1 RIP 4

Webb, Loraine
E 1 E 3 GC 7 HCP 1 L 1 OG 2

Webber, Roxanne
F 1 F 2 L 1 WA 1

Weber, I.
GC 14

Weber, Ollie
GC 7 GC 8 GC 10 H 1 H 2 HCP 1 SG 6 TIM 1
VEG 2 WAT 2

Weber, Ollie Ft.
E 1 E 4 GC 8 GC 10 H 1 H 2 HCP 1 HCP 2
OG 1 SG 1 SG 4 SG 6 TIM 1 VEG 2 WAT 2

Weber, Scott
HCP 1 L 1 OG 1

Weber, Scott
HCP 1 P 1

Weber, Vicent & Roxanne
HCP 1 I 1 SG 1 SG 7

Webster, James
HCP 1 OG 1 RIP 4

Weddle, Raymond
HCP 1 OG 1

Weeks, Scott
HCP 1 OG 1 RIP 4

Wegner, Joan Adrienne
HCP 1 OG 1 RIP 4

Weiland, Sherry
GC 8 GC 10 HCP 1

Weinberg, Rob
GC 8 HCP 1

Weinberg, Rob
GC 7 GC 8 HCP 1 OG 1

Weinstein, Miriam
HCP 1 OG 1 RIP 4

Weinstock, Ken
HCP 1 OG 1

Weiss, Lara
F 1 HCP 1 RIP 5 WMM 1 WNSO 1

Weiss, Mary L.
HCP 1 OG 1 RIP 4

Weiss, Maureen
HCP 1 OG 1 RIP 4

Weissbluth, Claire
HCP 1 I 1 OG 1

Weissbrich,
GC 10 HCP 1 HCP 3

Weissbruch,
GC 8 HCP 1 TIM 1

Weissman, Adam
GC 7 GC 8 GC 10 HCP 1

Welch, Dale
E 5 HCP 6

Welch, Linda
HCP 1 OG 1 RIP 4

Welch, Nonnie
HCP 1 OG 1 P 1

Welch, Nonnie
HCP 1

Welles, Jay M
GC 7 GC 10 I 1 L 1

Wellish, Greg
GC 5 GC 8 HCP 1 L 1 TIM 1

Wellish, Pam
HCP 1 OG 1

Wells, James v.
GC 7 GC 10 I 1 L 1

Wells, Marian R.
GC 9 OG

Welsch, Nathaniel
HCP 1

Wendel, Christiane C.
HCP 1 OG 1 RIP 4

Wendt, Dennis
HCP 6

Wendt, Melody
GC 8 HCP 1

Wendt, Melody
GC 8 HCP 1

Wersibuch,
HCP 1

West, Natalie
HCP 1 OG 1

West, et al., Christine
HCP 1 SG 4 WAT 2

Westendorf, Thomas
GC 8 GC 10 HCP 1

Westien, Eric
HCP 1 OG 1 RIP 4

Westney, Julie
F 1 GC 8 HCP 1 L 1 RIP 4 SG 1 SG 7 TIM 1

Weston, Mary Joe
HCP 1 OG 1 RIP 4

Weymuller, Sims
OG 1

Wheat, Francis M.
HCP 1 RIP 4 TIM 3

Wheatley, Dale
HCP 1 OG 1

Wheaton, Phyllis
HCP 1 OG 1 RIP 4

Wheeler, et al., Don
HCP 1 L 1 OG 1

Whitaker-Edwards, Janice
HCP 1 OG 1 RIP 4

White, Lornie
GC 8 GC 10 HCP 1

White, Adona
GC a L 1 OG 1 OG 2 TIM 1 WAT 3 WMM 1 WNSO 1

White, Debbie
GC a GC 10 HCP 1

White, E. A.
HCP 2 RIP 4 TIM 1 WAT 6

White, E.A.
HCP 1 HCP 2 RIP 5 TIM 1

White, Joan C.
HCP 1 L 2 OG 1

White, L.
GC 7 GC 10 | 1 L 1

White, Stanley A.
GC 7 GC 10 | 1 L 1

White, William S.
RIP 4 RIP 5 SG 6

White, William S.
L 1 MON 1

Whitehead, Mary E.
HCP 1 OG 1 RIP 4

Whiteman, Tom
HCP 1 OG 1 RIP 4

Whiteman / English, Tom /Andrea
GC a HCP 1 OG 1 RIP 4 WAT 2

Whitla, Brenda M.
OG 1 RIP 4

Whitmore, David
HCP 1 OG 1

Whitney-Yaeger, Ellie
HCP 1

Whitpler, Alison
HCP 1 HCP 2 L 1 RIP 4 TIM 5

Whitt-Jaron/Williams, Tammy / Marianne
HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1 SG 6
TIM 1 WAT 3 WNSO 1

Whittaker, Alison

GC 7 HCP 1 HCP 2 I 1 L 1 RIP 4

Whittaker, Richard
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

Whittaker, Richard
HCP 1

Whittaker, Richard
HCP 1 HCP 3 L 1 OG 2 RIP 4 SG 1 WAT 2 WAT 6
WMM 1

Whittaker, Richard
HCP 1 HCP 3 L 1 OG 2 RIP 4 WAT 6 WMM 1

Whittier, Al
GC 8 GC 10 HCP 1

Whittlesey, Emily
F 1 L 1 OG 2 RIP 4 SG 6 SG 7 TIM 1 WAT 2

Whittsler, Alison
GC 10 HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4

Who, Elizabeth
I 1 L 1 WAT 2

Wickens, Tim
HCP 1 RIP 4

Widess, Jim
HCP 1 OG 1 RIP 4

Widess, Paul
HCP 1 OG 1 RIP 4

Wieder, K'vod
HCP 1 OG 1 TIM 6

Wiedmer, Janine
HCP 1 OG 1 RIP 4

Wiener, Harry
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 TIM 1 WAT 3

Wigginton, Kathy
E 5 HCP 6

Wigginton, Linda C.
HCP 6

Wilbur, Mary
E 4 GC 5 HCP 1 LU 1

Wilbur, Mary
GC 5 HCP 1 P 1 VEG 2

Wilbur, Mary
F 2 GC 7 HCP 1 WAT 1

Wilbur, et al, Mary
HCP 1 MON 1 TIM 1

Wilburn, Todd & Diane
GC a H 4 HCP 1 HCP 2 HCP 4 L 1 OG 1 WAT 6
WNSO 1

Wilcox, Bernardine
GC 7 HCP 1

Wilcox, Bradley
HCP 1 OG 1 RIP 4

Wilcox, Susan E.
E 4 F 5 HCP 1 HCP 2 HCP 3 HCP 5 HCP 7 L 1
MON 1 OG 1 RIP 4 SG 1 TIM 1 TIM 6 WA 1 WAT 1
WNSO 1

Wild-Roy, Mary
GC a GC 10 HCP 1

Wilgrim, Charlie
OG 1

Wilhelm, Gary
F 1 GC 7 HCP 1 HCP 2 L 1 OG 1 RIP 4 RIP 9
SG 1 TIM 1 TIM 3 WAT 3 WAT 6 WMM 1 WNSO 1

Wilhelm, Gary
TIM 3 WAT 3

Wilhelm, Gary Lynn
HCP 1 L 1 SG 1

Wilhite, David
HCP 1 OG 1 RIP 4

Wilhoit, Betty Jane
HCP 1 MON 1 RIP 4

Wilkerson, Daniel
HCP 1 OG 1

Wilkes, Joe
E 2 HCP 1 RIP 4 TIM 1

Wilkes, Joe
E 4 RIP 1 RIP 2 RIP 4 SG 1 TIM 1 WAT 3

Willes, Burl
HCP 1 OG 2

Willett, Terrence
HCP 2 MON 1 MON 2 OG 2

Willett, Terrence
HCP 1 HCP 2 L 1 MON 1 OG 1 OG 2 RIP 4 TIM 1

Williams, Alix N.
HCP 1 OG 1 RIP 4

Williams, Barbara
HCP 1 OG 1 RIP 4

Williams, Barbara
GC 8 HCP 1 L 1 OG 1 RIP 4 TIM 1

Williams, Darrel Lewis
GC 9 OG 1

Williams, Donald C.
F 1 HCP 1 HCP 5 RIP 1 RIP 4 SG 1 TIM 3

Williams, Erin
GC 5 HCP 1 WMM 1

Williams, Holly
GC 8 GC 10 HCP 1

Williams, Jane & Richard
HCP 1 OG 1 RIP 4

Williams, Jeff
OG 1 TIM 3

Williams, Jeff
OG 2

Williams, Kristine
HCP 1 OG 1 RIP 4

Williams, Noel
HCP 1 OG 1 RIP 4

Williams, Paige
HCP 1 OG 1 OG 2 TIM 3 WMM 1 WNSO 1

Williams, Richard
HCP 1 OG 1 RIP 4

Williams, Sally S.
GC 11

Williams et al., Marianne
GC 8 HCP 2 L 1 OG 2 RIP 1 RIP 5 RIP 7 SG 1
SG 6 TIM 1 WAT 3 WNSO 1

Willis, Anne
GC 7 HCP 1 L 1 OG 1 SG 1

Willis, Anne E.
HCP 1 L 1 SG 1 TIM 5

Willis, Anne E.
GC 5 HCP 1 L 1 SG 1 TIM 1

Wilson, Cleveland
GC 7 OG 1 RIP 4

Wilson, Cleveland
GC 10 HCP 1 L 1 **OG** 2 RIP 4

Wilson, Diana
HCP 1 OG 1

Wilson, Frank R.
HCP 6

Wilson, James R.
E 4

Wilson, Jamie
F 1 HCP 1 SG 1 SG 6 WAT 4

Wilson, Jason B.
GC 5 GC 10 HCP 1 HCP 4 OG 2 RIP 4 SG 1 TIM 1
TIM 3

Wilson, Kalina G.
HCP 1 OG 1 RIP 4

Wilson, Lawrence
OG 1 P 1

Wilson, Marianne
HCP 1 OG 1

Wilson, Mark
HCP 1 OG 1

Wilson, Nicholas
GC 8 HCP 2 L 1 OG 2 RIP 4 SG 1 TIM 1 TIM 5

WAT 2 WAT 3 WAT 6 WMM 1 WNSO 1

Wilson, Sharyse
GC 8 HCP 1 L 1

Wilt, John
HCP 2 HCP 3 L 1 RIP 4 TIM 1 WAT 3 WAT 6 WMM 1
WNSO 1

Wilt, Michael
GC 8 HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4 SG 1
TIM 1 WAT 3 WAT 6 WNSO 1

Wimer, John S.
HCP 1

Wines, Ricky L.
GC 7 GC 10 I 1 L 1

Winn, Donald
HCP 1 L 1 OG 1

Winnie, Barbara A.
HCP 1 OG 1 RIP 4

Winter, Paris
HCP 1 L 1 RIP 5

Winter, Paris
F 1 HCP 1 L 1 RIP 5

Winters, Dean
HCP 6

Wipfler, Bob
GC 7 HCP 1 OG 1

Wire, Marcia V V
GC 7 HCP 1 HCP 2 I 1 L 1 OG 1 RIP 1 TIM 3

Wirth, Petra
OG 1

Wirth, Petra
HCP 1 OG 2

Wise, B.M.
HCP 1 OG 1 RIP 4

Wise, Pat
GC 7 GC 10 I 1 L

Wise, Ted
GC 7 GC 10 I 1 L 1

Wise et al., Dean
GC 7 GC 10 HCP 1 L 1

Withrow, Laurel
H 2 HCP 1 OG 2 RIP 4 SG 1 TIM 1

Witt, Jennifer
HCP 1 I 1 OG 1 RIP 4

Witt, Jennifer
I 1 L 1 OG 2 RIP 4

Witt, Joseph
GC 8 GC 10

Witteman, Richard
GC 7 HCP 1 I 1 OG 1

Wittman, Bret
HCP 1 OG 1

Wittmann, Bert
HCP 1 OG 1

Wobser, Jami
HCP 1 OG 1 RIP 4

Wolbert, K.C.
OG 1

Wolchow, Brent
HCP 1 OG 1

Wold, Jeanette
A 2 HCP 1 L 1 RIP 4 WMM 1

Wold, Jeanette
GC 8 HCP 1 L 1 RIP 4 WMM 1

Wolf, Alan & Susan
HCP 1 OG 1 RIP 4

Wolf, Leo & Sylvia
GC 8 GC 10 HCP 1 L 1 OG 1

Wolf, Richard J.
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 RIP 5 RIP 7
SG 3 SG 6 TIM 1 WAT 3 WAT 6 WNSO 1

Wolf. Steven R.

HCP 1 OG 1 OG 2

Wolf, Susan, Alan, Julia
OG 1 RIP 4

Wolf, Taryn
E 3 E 4 HCP 1 OG 2

Wolfe, Brian
GC 7 HCP 1

Wolfe, Kelly
GC 7 GC 9 HCP 1

Wolfley, Jessica
L 1 OG 1 RIP 5 SG 1 WAT 3 W M M 1

Wolfson, Michelle
HCP 1 HCP 2 L 1 OG 1 OG 2 RIP 4 SG 1 TIM 1
TIM 5 WAT 3 WMM 1 WNSO 1

Wolland, Scott
HCP 1 L 1 OG 1 OG 2 TIM 1 WAT 3 WNSO 1

Wong, Derek
HCP 1 OG 1 RIP 4

Wong, Pauline
HCP 1 OG 1 RIP 4

Wong, William
HCP 1 OG 1 RIP 4

Woo, Garmen A.
HCP 1 OG 1 RIP 4

Wood, David
GC 7 GC 10 I 1 L 1

Wood, Enid
HCP 1 OG 1

Wood, Fred
HCP 1 OG 2

Wood, Gordon H.
GC 5 GC 8 GC 10 HCP 1

Wood, Kalen
HCP 1 RIP 4

Wood, Lester
HCP 1 L 1

Wood, Lois M.
GC 8

Wood, Marge
HCP 1 OG 1 RIP 4

Wood, Marge
HCP 1 OG 1 RIP 4

Wood, Michael
GC 10 HCP 1

Woodfin, Glenn R.
GC 8 OG 1 RIP 4

Woodrose, Jade
GC 7 L 1

Woodrose, Jade
E 4 GC 7 HCP 1

Woodruf, Heidi
HCP 6

Woolley, Guy
HCP 1 OG 1 RIP 4

Woolley, John & Ann
HCP 1 MON 1 RIP 2 RIP 3 WAT 6

Woolley, Pat
HCP 2 I 1 L 2 OG 2 RIP 4 TIM 1 WAT 3 WNSO 1

Woolley, Pat
HCP 1 HCP 2 L 1 L 2 RIP 4 TIM 1 WAT 3

Woolley, Rodney W.
HCP 6

Woollin, Louise
HCP 1 OG 1 RIP 4

Worth, Richard
GC 8 HCP 1 L 1

Wreden, Janet
HCP 1 OG 1

Wreden, Jennifer
HCP 1 OG 1

Wreden, Mark
HCP 1 OG 1

Wrench, Joue W.
GC 8 L 1 OG 1 OG 2

Wright, Gordon T. P.
HCP 1 L 1 OG 2

Wright, Hope
HCP 2 OG 1

Wright, Julie A.
E 5 HCP 6

Wright, Kevin
GC 7 GC 8 H 2 H 4 HCP 1 RIP 4 TIM 1 TIM 3
TIM 5 TIM 7

Wright, Monica
HCP 1 OG 1

Wrigley, Kristi
HCP 1 L 1 RIP 1 RIP 4 SG 1

Wu, Fred
HCP 1 L 1

Wu, Jennifer
OG 1 RIP 4

Wulff, Timm
HCP 1 OG 1

Wylie, Walter 0.
HCP 1 OG 1 RIP 4

Wynn, T. Carter
E 4 F 1 GC 5 OG 1 OG 2 SG 1 TIM 1 VEG 2
WMM 1 WNSO 1

Wynne, Nora
F 1 HCP 1 RIP 5 WMM 1 WNSO 1

Wyoni, Lynn
OG 1 RIP 4

Wyrostok, Stephen A.
HCP 1 OG 1 RIP 4

Wysocki, Cheryl
GC 8 HCP 1 L 1

Yandle,
HCP 1 WAT 3

Yandle, Jodi
HCP 1 OG 1 RIP 4

Yanez, Alex
GC 1

Yang, Alice
OG 1 TIM 6

Yang, Justine
HCP 1 L 1 L 2 OG 2 TIM 1 WAT 3

Yarnall, Jack
E 4 HCP 1

Yates-Costello, Elaine
HCP 1 OG 1 OG 2 RIP 4

Yde, Henrik
GC 5 GC 8 HCP 1 HCP 2 HCP 3 L 1 MC 1 OG 1
OG 2 RIP 4 SG 3 TIM 1 WAT 3 WMM 1 WNSO 1

Yeager, Mark N.
HCP 1 OG 1 RIP 4

Yeley, Vicki
HCP 1 OG 1 RIP 4

Yellin, Marci
GC 5 GC 8 L 1 WAT 3 WMM 1

Yellin, Marci
GC 8 HCP 1 | 1 L 1 OG 1 WAT 3

Yellin, Marci
HCP 1

Yip, Jeannie
HCP 1 OG 1 RIP 4

Yonts, Linda & Joe
HCP 3

Youkilis, Dana
HCP 1 OG 2 RIP 4 TIM 1

Young, Alison
HCP 1 L 1 RIP 4 SG 1 TIM 3 VEG 1 w 1 WAT 5

Young, Allison
HCP 1 L 1 MON 1 RIP 4 SG 1 TIM 3 w 1

Young, Bing

HCP 1 OG 1 RIP 4

Young, Calista
E 4 GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 1
TIM 1 WA 1 WAT 3 WNSO 1

Young, Cathleen
GC 3

Young, Ellie
HCP 1 OG 1 RIP 4

Young, Jerry
HCP 1 OG 1 RIP 4

Young, Karen
GC 8 HCP 1 RIP 4 WAT 2

Young, Rick
HCP 1 L 1 OG 1 RIP 5 SG 1

Young, Susie
HCP 1 OG 1 P 1

Young, William
HCP 1 OG 1 RIP 4

Youngs, Tim
HCP 1 OG 1 RIP 4

Youngs, Tim
HCP 1 HCP 4 OG 1 OG 2 RIP 4

Yow, Stephen
HCP 1 OG 1 SG 1 TIM 1 VEG 2 WAT 5

Yu, Kelvin
HCP 1 OG 1 RIP 4

Yukic, FA
HCP 1 RIP 4

Yukor, Allen
GC 7

Yuri, Tatum
HCP 1 L 1 P 1

Yurman, Rich
HCP 1 OG 1

Yurman, Richard
HCP 1 L 1 MON 1

Yurolt, Scott
HCP 1 OG 1

Zaccagline, K.
HCP 1 OG 1 RIP 4

Zachary et al., Gary
RIP 2 RIP 4 SG 6 WAT 6

Zachary, et al., Gary
HCP 1 RIP 7 SG 6 WAT 6

Zaffarano, Sandee
HCP 1 P 1 TIM 3

Zamenes, Andrew
HCP 1 OG 1 RIP 4

Zamora, Carlos
HCP 3 OG 1 P 1

Zamora, Carlos
HCP 1 I 1 P 1 TIM 1

Zampa, Ronald
HCP 1 HCP 3

Zampieri, Janet
GC 8 SG 6 WAT 2 WAT 6

Zandecki, Jolanta
HCP 1 OG 1 RIP 4

Zechlin, Bernard
HCP 1 OG 1 RIP 4

Zell, James & Belinda
GC 7 HCP 1 HCP 2 I 1 L 1 RIP 4

Zell, James & Belinda
GC 10 HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4

Zell, James & Belinda
HCP 1 HCP 2 L 1 RIP 4 TIM 5

Zell / Ellenberg, Judith / Daniel
GC 8 HCP 1 TIM 1

Zelmer, Karen
HCP 1 L 1 L 2

Zhang, Alex
HCP 1 RIP 1

Zhang, John
HCP 1 OG 1

Ziberstein / Miller, Gene / Carolyn
GC 5 H 4 HCP 1 HCP 2 L 1 OG 2 RIP 1 RIP 4
SG 1 SG 3 TIM 1 WAT 3

Ziegler, Gretchen
E 4 GC 7 GC 8 HCP 1 L 1

Ziegler, Gretchen
GC 8 HCP 1 L 1

Zimmerman / Waxman, Pam /Jerry
I 1 OG 1

Zimoski, Tom
GC 8 HCP 1 L 1 MON 1 RIP 4

Zimoski, Tom
HCP 1 L 1 MON 1 RIP 4

Zipp, Brandon
GC 7 MON 1 RIP 4 RIP 5

Zucker, Melissa
GC 7 HCP 1 MON 2

Zucker, Melissa
E 4 HCP 1 TIM 1

Zucker, Melissa
HCP 1

Zuckerman, Seth
HCP 1 L 1 RIP 4 SG 1 SG 6

Zuckerman, et al., Seth
HCP 1

Zuech, Joe R.
GC 8 HCP 1 OG 1 RIP 4 SG 1 TIM 5

Zuniga, Elena
GC 5 GC 8 HCP 1 OG 2 RIP 4 TIM 1 WMM 1 WNSO 1

Zyskowski, Jude
HCP 1

deCastro, Ella
HCP 1 OG 1 RIP 4

deforest, John

GC 7 HCP 1 I 1 L 1 OG 1 TIM 3

deGier, Karin
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
GC 8 HCP 1 RIP 7 SG 6 WAT 6

name unknown,
HCP 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
E 3 HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
OG 1 RIP

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
OG 1

name unknown,
E 1 GC 9 HCP 1 TIM 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC a GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 10 HCP 1 OG 1

name unknown,
HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
HCP 1

name unknown,
L 1 OG 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
GC 8 GC 10 HCP 1

name unknown,
HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 WAT 6 WNSO 1

name unknown,
HCP 1 HCP 2 L 1 RIP 4

name unknown,
GC 8 HCP 1 L 1 RIP 4 SG 6 TIM 1 WAT 3 WAT 6

name unknown,
GC 8 HCP 1 L 1 RIP 4 SG 6 TIM 1 WAT 3 WAT 6

name unknown,
GC 8 HCP 1 HCP 2 L 1 OG 2 RIP 4 SG 3 TIM 1
WAT 6 WNSO 1

name unknown,
H 4 HCP 1 P 1 RIP 4

name unknown,
HCP 1 HCP 2 RIP 7 TIM 1 WAT 6 WMM 1

name unknown,
OG 1

name unknown,
OG 1

name unknown,
HCP 1 HCP 2 OG 1 RIP 7 TIM 1 WAT 6 WMM 1

name unknown,
GC 7 GC 10 I 1 L 1

name unknown,
GC 7 GC 10 I 1 L

name unknown,
I 1 OG 1

name unknown,
GC 8 L 1 TIM 1 WAT 3

name unknown,
I 1 OG 1

name unknown,
HCP 1

name unknown,
HCP 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,

HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4 SG 1 TIM 6

name unknown,
OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
OG 1 RIP 4

name unknown,
HCP 1 L 1 L 2 WAT 2

name unknown,
GC 9 HCP 1 L 2 OG 1

name unknown,
GC a HCP 1 L 1 RIP 4 SG 6 TIM 1 WAT 6

name unknown,
HCP 1

name unknown,
GC 7 HCP 1

name unknown,
I 1 L 2 OG 1 TIM 1 TIM 3 WAT 2

name unknown,
GC a HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4 SG 3
TIM 1 WAT 5 WAT 6 WMM 1 WNSO 1

name unknown,
GC 10 HCP 1 HCP 2 HCP 3 L 1 RIP 4

name unknown,
GC 10 HCP 1

name unknown,
E 2 HCP 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
GC 8 HCP 1 L 1 OG 2 WAT 3

name unknown,
GC 7 H 4 HCP 1 L 1 OG 1

name unknown,
HCP 1 L 1 OG 1 OG 2 RIP 7 SG 3 WMM 1

name unknown,
HCP 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG

name unknown,
HCP 1 OG

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
OG 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
GC 7 L 1

name unknown,
F 1 HCP 1 RIP 4 SG 1

name unknown,
GC 5 HCP 1 OG 2 WMM 1

name unknown,
OG 1 VEG 2 WAT 2 WMM 1 WNSO 1

name unknown,
GC 8 I 1 L 1 P 1

name unknown,
GC 7 GC 8 HCP 1 L 1 P

name unknown,
HCP 1 L 1 TIM 1 TIM 2

name unknown,
HCP 1 OG 2 RIP 4

name unknown,
HCP 1 L 1

name unknown,

name unknown,
HCP 1 I 1 L 2 OG 1 TIM 2

name unknown,
GC 8 L 1 MON 2

name unknown,
HCP 1 OG 2 RIP 4

name unknown,
HCP 1 OG 2

name unknown,
HCP 1 OG 2

name unknown,
HCP 1

name unknown,
L 1

name unknown,
HCP 1

name unknown,
TIM 3

name unknown,
OG 1

name unknown,
HCP 1 P 1

name unknown,
HCP 1 P 1

name unknown,
HCP 1 P 1

name unknown,
HCP 1

name unknown,
HCP 1 P 1

name unknown,
GC 8 P 1

name unknown,
OG 1 P 1

name unknown.

OG 1 P 1

name unknown,
OG 1 P 1

name unknown,
OG 1 P 1

name unknown,
HCP 1 P 1

name unknown,
HCP 1 L 1

name unknown,
F 1 HCP 1 TIM 5 TIM 8

name unknown,
HCP 1 RIP 2 SG 1

name unknown,
HCP 1 OG 1 RIP 7 TIM 6 TIM 8

name unknown,
HCP 1

name unknown,
HCP 1 OG 2 RIP 4

name unknown,
L 1 OG 1 OG 2 RIP 4 SG 3 WAT 6

name unknown,
E 1 E 2 HCP 1 I 1 OG 1 SG 6 VEG 2

name unknown,
GC 5 HCP 1

name unknown,
HCP 1

name unknown,
HCP 1 OG 1 P 1

name unknown,
GC 8 HCP 1 L 1 OG 2

name unknown,
GC 8 OG 1 RIP 4

name unknown,
HCP 1

name unknown,
HCP 1

name unknown,
HCP 1

name unknown,
HCP 1 RIP 4

name unknown,
HCP 1

name unknown,
P 1

name unknown,
HCP 1

name unknown,
HCP 1 OG 2

name unknown,
HCP 1 OG 2 RIP 4

name unknown,
HCP 1 OG 2 RIP 4

name unknown,
HCP 1

name unknown,
HCP 1 OG 2 RIP 4

name unknown,
HCP 1 OG 2

name unknown,
HCP 1

name unknown,
GC 8 HCP 1 HCP 2 L 1 OG 1 OG 2

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
OG 1 RIP 4

name unknown,
RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 L 1 RIP 4 WAT 1

name unknown,
HCP 1 I 1

name unknown,
HCP 1

name unknown,
HCP 1 RIP 4

name unknown,
HCP 1

name unknown,
HCP 1

name unknown,
HCP 1

name unknown,
HCP 1 RIP 4

name unknown,
HCP 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1 OG 1

name unknown,
HCP 1

name unknown,
HCP 1 L 1 RIP 1 RIP 4 WMM 1

name unknown,
HCP 1 HCP 2 L 1 RIP 4 TIM 5

name unknown,
HCP 1 HCP 2 L 1 RIP 4 TIM 5

name unknown,
HCP 1 HCP 2 L 1 OG 2 RIP 4 WAT 6 WMM 1

name unknown,
HCP 1 L 1

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 OG 1 RIP 4

name unknown,
HCP 1 L 1

name unknown,
HCP 1 L 1 TIM 1 WAT 3

name unknown,
GC 8 HCP 1 L 1 OG 2

name unknown,
HCP 1 HCP 3 L 1 OG 1 RIP 4 WAT 3 WMM 1

name unknown,
HCP 1 L 1

name unknown,
HCP 1

name unknown,
L 1 MON 1 OG 1

name unknown,
HCP 1

name unknown,
OG 1

name unknown, Aeros
HCP 1

name unknown, Alecia
HCP 1 OG 1 TIM 3

name unknown, Aleria
TIM 3 TIM 6

name unknown, Ari
GC 14

name unknown, Ashley
HCP 1 HCP 3 L 1 OG 1 RIP 4 WAT 3WMM 1

name unknown, Bianca
HCP 1

name unknown, Bianca
OG 1

name unknown, Brennan
OG 1 TIM 1

name unknown, Brennan
OG 2 TIM 6

name unknown, Brent W.
GC 7 HCP 1

name unknown, Brett
HCP 1

name unknown, Brian
HCP 1 OG 1 RIP 4

name unknown, Brian
HCP 1

name unknown, Camilla
E 1 GC 10 HCP 1 RIP 4

name unknown, Carol L.
HCP 1 HCP 2 L 1 RIP 4 TIM 5

name unknown, Cassandra
HCP 1

name unknown, Dave
E 1 MON 1 RIP 4 RIP 7

name unknown, David
HCP 1 OG 1 RIP 4

name unknown, Debbie
GC 5 HCP 1 L 1 OG 1 RIP 4

name unknown, Debra
I 1 OG 1

name unknown, Demone
P 1 RIP 4 WAT 2

name unknown, Dennis
HCP 1 OG 1

name unknown, Elizabeth
HCP 1

name unknown, Elizabeth
HCP 1

name unknown, Elizabeth
HCP 1

name unknown, Elizabeth
HCP 1 OG 1 RIP 4

name unknown, Ellen
HCP 1 OG 1

name unknown, Eloan
OG 1

name unknown, Emily
HCP 1

name unknown, Emily
HCP 1 TIM 6

name unknown, Emily
HCP 1

name unknown, Emily
OG 2 TIM 6

name unknown, Eve
E 4 HCP 1 TIM 1

name unknown, Gary
GC 7 GC 10 I 1 L 1

name unknown, Glenda
GC 7 GC 8 GC 10 HCP 1 HCP 2 I 1 L 1 OG 1
OG 2 RIP 4 VEG 2 WAT 3 WMM 1 WNSO 1

name unknown, Gregory D.
HCP 1

name unknown, Harry
GC 7 GC 10 I 1 L

name unknown, Harry M.
HCP 1 OG 1 RIP 4

name unknown, Howard
HCP 1 OG 1

name unknown, JOHN
GC 8 HCP 1 L 1 OG 1 RIP 4 TIM 1

name unknown, JULIA
GC 8 HCP 1 L 1 L 2 SG 1

name unknown, JULIE
HCP 1 OG 2

name unknown, Jabali
HCP 1

name unknown, Jackie
OG 1 P 1 RIP 1

name unknown, James
OG 1 TIM 6

name unknown, James C.
HCP 1 OG 1 OG 2 RIP 1

name unknown, James L.
GC 7 GC 10 I 1 L 1

name unknown, Jamie A.
HCP 1 OG 1 RIP 4

name unknown, Jane

GC 8 HCP 3 L 1 TIM 1 WAT 3

name unknown, Jennifer
HCP 1 OG 1 RIP 4

name unknown, Jestin
SG 1 WAT 2

name unknown, Jestin
HCP 1 SG 1

name unknown, Jestin
SG 1 TIM 3

name unknown, John
GC 10 HCP 1

name unknown, John
HCP 1

name unknown, Joseph
GC 9 HCP 1 OG 1

name unknown, Josh
HCP 1

name unknown, Judy
HCP 1 OG 1 RIP 4

name unknown, Justin
OG 1

name unknown, KATHERINE
HCP 1 OG 1 RIP 4

name unknown, Kamelia
HCP 1

name unknown, Kay
E 1 HCP 1 L 1

name unknown, Keenan
GC 7

name unknown, Ken
HCP 1 OG 1 RIP 4

name unknown, Ken
HCP 1

name unknown, Kris
HCP 1 L 1 OG 2 RIP 4 SG 1 WAT 6

name unknown, Lars
RIP 1 RIP 5 RIP 7 SG 6

name unknown, Lillian
OG 1 TIM 3

name unknown, Lillian
HCP 1 OG 2

name unknown, Linda K.
HCP 1 OG 1

name unknown, Linda Kay
HCP 1 HCP 2 L 1 RIP 4 TIM 5

name unknown, Lisa
HCP 1

name unknown, Loretta
HCP 1 OG 1

name unknown, Mark
E 1 HCP 2 I 1 L 1 L 2 MON 1 RIP 1 RIP 4
SG 1 TIM 1 WAT 1 WAT 2 WAT 4 WMM 1 WNSO 1

name unknown, Mark
HCP 1 OG 1

name unknown, Mia
OG 1 TIM 6

name unknown, Micalo
GC 8 HCP 1 L 1 OG 1 WAT 2

name unknown, Michael
OG 1 RIP 4

name unknown, Milo
E 4 HCP 1 SG 1

name unknown, Monique
E 4 GC 8 GC 10 HCP 1 HCP 2 L 1 OG 1 RIP 4
SG 1 TIM 1 WMM 1 WNSO 1

name unknown, Naomi
GC 8 HCP 1 L 1

name unknown, Paul
HCP 1 OG 1

name unknown, Paul
OG 1

name unknown, Peter
HCP 1 HCP 3 L 1 OG 1 OG 2 RIP 4 SG 1 WAT 2
WAT 6 WMM 1

name unknown, Philip
HCP 1 OG 1 RIP 4 TIM 6

name unknown, Philip
HCP 1 OG 1 RIP 4 TIM 6 TIM a

name unknown, Phyllis
HCP 1

name unknown, Rachel
HCP 1 OG 1 RIP 4

name unknown, Rachel
OG 1 RIP 4

name unknown, Robert J.
HCP 1 OG 1

name unknown, Ron
GC 7 GC 10 I 1 L

name unknown, Russell
HCP 6

name unknown, SIENNA
OG 1

name unknown, Sam
HCP 1 OG 1

name unknown, Sam
GC 5 GC a GC 10 HCP 1

name unknown, Scott
E 1 HCP 1 TIM 1

name unknown, Shawn
HCP 1 P 1

name unknown, Susan
GC a H C P 1 L 1 OG 2 WAT 3

name unknown, Susie
HCP 1 OG 1 RIP 4

name unknown, Theodore
HCP 1 L 1 OG 1 TIM 8 WMM 1

name unknown, Tim

H 4 HCP 1 L 1 OG 1

name unknown, Vinnie
OG 1

name unknown, Wendi
E 1 GC 8 HCP 1 HCP 3 L 1 OG 2 RIP 7 SG 6
TIM 1 WAT 3 WAT 6 WNSO 1

name unknown, William
HCP 1 OG 2 RIP 4 TIM 1

name unknown, et al.,
GC 8 HCP 1 HCP 2 HCP 3 L 1 OG 2 RIP 4 TIM 1
WAT 3 WAT 6 WMM 1 WNSO 1

phone comments,
GC 7 HCP 1 OG 1 TIM 3

vanBroehoven, Michael
HCP 1 RIP 7 SG 1 SG 6

von Merz, Carla
TIM 1 TIM 3 VEG 1 WAT 4

vonDrasek, Sunday
L 1 SG 1

PART 3—INDIVIDUALS PROVIDING WRITTEN COMMENTS