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November 1, 1998

Bruce Halstead, US Fish & Wildlife Service
1125 16th Street, Room 209
Arcata, CA 95521

Please reference Permit numbers PRT-828950 and 1157.

John Munn, California Department of Forestry
1416 Ninth Street
Sacramento, CA 95814

Please reference SYP 96-002

Pacific Lumber
Habitat Conservation Plan
Sustained Yield Plan

and
Associated EIS/EIR

COMMENTS

GENERAL QUESTIONS AND COMMENTS

Both the SYP and the HCP indicate reliance on California Forest Practice Rules Implementation. The National Marine Fisheries Service has raised significant question on the efficacy of the Forest Practice Rules (and their implementations) to protect the beneficial uses of water (I will include by reference the Resource Agency Response to NMFS , July 10 , 1998 - also see appendix). Not only do the Forest Practice Rules have substantive shortcomings and failures (see appendix) in their efficacy; CDF staff is not subjected to periodic training in appropriate assessment and enforcement technique. CDF refuses to engage in comprehensive training of field personnel to bring their staff up to date with trends in forest sciences and application of modern techniques in forest practices. CAG-1

These questions regarding the efficacy of the Forest Practice rules and their application have not and have not been resolved. Since there are many areas of concern noted by NMFS that directly related to the efficacy of the Forest Practice Rules to protect sensitive fishery, forest, wildlife and

CAG-1 CON. water quality values; reliance on Forest Practice Rule implementation is inappropriate. New enforceable standards for all timber operations must be made to accommodate the goals and policy of any adopted SYP/HCP.

CAG-2 Other general questions on this subject are: How does the HCP/SYP relate to any future changes in the Forest Practice Rules? If there are FPR changes during the tenure of an approved HCP/SYP, how will these new operating conditions be reflected in the HCP/SYP and HCP/SYP analysis and modeling systems?

CAG-3 The HCP/SYP may need modification if monitoring shows a failure to obtain objectives. Is this HCP/SYP a working document? New materials may added to the HCP/SYP, altering the document itself as well as agency and the public's opportunity for review and comment on a finished document. How is the public to be kept up to date on these changes?

CAG-4 Are these documents attached to the land? What happens to goals, and objectives in the case of a change in ownership?

PLANNING WATERSHEDS AND WATERSHED ANALYSIS
(see also Cumulative Watershed Effects)

CAG-5 The scale of analysis is important for accurate review. In no case should the planning watershed and/or analysis area be larger than approximately 8,000 acres (approximate size of existing planning watersheds).

Mapping at the planning watershed level is not in sufficient detail to accurately discern geomorphic features, wetlands, wet areas, Critical Sites, WHRs, etc..

Relative risk and level of disturbance assessment/analysis as described in the HCP/SYP is not functional at planning watershed level. At the THP level absolute risk and finite or site specific analysis goes beyond what is available in this HCP/SYP generalized predictive assumptions and modeling.

CAG-6 Criteria for resource protection related to this analysis has not been sufficiently established to protect resources in question. There is no plan to take any action related to given degrees of risk.

CAG-7 Watershed analysis is not based on field verification (depending on the Tier and likely in all Tiers). Problems statement, monitoring protocol, and stream assessment data for managing protection and enhancement of the beneficial uses of water are insufficient . There is a lack of problem identification and specific problems site (or sensitive area) identification as well a linkage to probable causation factors and remedies (mitigations and enhancement). Measurement of factors, by indicators or habitat condition(s), to determine trends over time is thoroughly overlooked in the HCP/SYP document. Numeric targets, as part of both the TMDL process and Forest Practice Act mitigation and enhancement process, are absent. The document should provide a more detailed graphical representation than is provided which tracks the logic of each step and

synthesizes this information such that the analytical basis for PL's management decisions are not clear. CAG-7

The HCP/SYP identifies, in a general sense, several stressors/indicators . The HCP/SYP does not contain a statement or expression of desired future watershed condition. Overall goals of PL's sustained yield management are not descriptive enough via management technique, monitoring objectives and protocols, enhancement goals, and overall descriptive watershed management goals. What are the overall goals, what management polices and practices will be put in place to achieve these goals, and how are the effectiveness of these practices to be measured?

In CWE analysis, work on baseline sampling should be accomplished before continued reentry disturbs and alters the extant baseline. It is not appropriate to establish baselines after the incidence of significant timber harvest events and a large percentage of a planning watershed has been impacted. Baseline data should be acquired before new entry regimes commence.

WLPZ

Proposed WLPZ management standards are not sufficient to provide necessary stream protection, later seral, and water quality and wildlife values (see appendix - targets matrix). How does PL's near stream retention policy relate to the maintenance of near stream and upslope wildlife values? CAG-8

Retention trees are not to be dedicated to LWD recruitment. It is unclear what management policy it to take place in stream reaches shown by assessment to be sensitive and suffering under stressor loads. The HCP/SYP document does not include disclosure and discussion of the maintenance of upslope habitat areas - and WHRs. CAG-9

Discussion of habitat maintenance and the necessity to meet ESA species protection guidelines are not sufficient. CAG-8 CON.

Relationship With Other Land Use Projects

HCP/SYP and/or THP must demonstrate and analyze effects of relationships with other projects in analysis area: CAG-10

SYPs

Current Watershed Projects and Land Use Impacts

Other Land Use Analysis Projects - State and Federal - i.e. WITS and CERES

Compliance with ESA species protection guidelines.

EPA 303 (d) TMDL watershed projects

HAZMAT - toxic materials handling is not regulated by CDF. Who will address this issue?

Peer and Agency Review

CAG-11 Without peer review, or multidisciplinary review team review and ground truthing, how can this document be a valid predictive tool? Modeling based on assumptions that may not be valid further discredit the predictive capability of the document. If modeling is not backed up with hard data from instream and upslope monitoring, soil types, geomorphic features, accurate WHRs, biologic data gathering, then the information presented does not portray a competent predictor or land management tool. Thus, the HCP/SYP falls short in its science, public trust, and ESA compliance mandates. This relates to the basic insufficiency of data to do appropriate site specific CWE analysis.

Monitoring and Reporting - Enforcement

CAG-12 Monitoring objectives and targets must be stated in the HCP/SYP. Monitoring must be designed to measure appropriate targets/parameters. The monitoring feedback loop system must account for associated lags. Information, or trends, must be able to be acknowledged before potential damage becomes a threat to listed species and water quality.

Historic review if THPs shows that there is a problem getting LTOs to conform to FPRs and additional mitigations associated with THPs. Monitoring the implementation of rules and mitigations is a subject the requires serious attention. This is not addressed sufficiently in the HCP/SYP document.

It has been noted, above and in the appendix, that there are shortcomings in the Forest Practice Rules. The California Department of Forestry has serious failures in it's ability to review and implement THPs. Part of the failure at CDF can be linked to the absence of any staff development and training programs in THP implementation or change in science and other state of the art approaches to forest management and erosion control. Yet, it appears the the responsibility for implementation and management of HCPs/SYPs will reside entirely within this agency. This fact of policy raises many questions the least of which are: How will CDF staff be trained to cope with this task? How will a staff that is incapable of enforcing the FPRs suddenly find itself capable of enforcing a much more complicated scenario related to the HCP/SYP format?

How is monitoring and enforcement procedure to be implemented?

How will wildlife values continue to be monitored?

What will happen if objectives and goals are not met?

Instream monitoring, as proposed, has not been sufficiently defined. How can instream monitoring and habitat assessment be accomplished without using quantitative methods. It is stated that predictive models will be corroborated and corrected from data derived from monitoring subsequent to HCP/SYP approval, yet there is no time line, compliance standards, or protocol established.

Derived data is not sufficient for site specific determinations and CWE analysis needed in THPs. This also holds true for the general level of detail in the HCP/SYP. PL indicates there will be updating by field review over time. Lags from the adaptive management loop must be fitted into modeling projections. This is true with projected feedback systems in other areas of water quality, soils, roads, and wildlife monitoring. CAG-13

The roads management plan also has no fixed plan, time line, or prioritization for numbering, assessing, or upgrading of roads, road surfaces, watercourse crossings, and erosion control devices. CAG-14

It must be remembered that the THP is the document that is supposed to present all relative information to the public. This includes complete and accurate representation, on a site specific basis, of conditions on the ground, potential effects and impacts, monitoring or related information, and mitigations to reduce potential impacts. The public does not have access to updated versions of the HCP or the SYP. Thus, all relevant information related to a specific THP should be included in the THP. Inclusion by reference in not appropriate or acceptable within the framework of the law. CAG-15

Watershed Assessment

Hydrology

Many of the basic assumptions regarding watershed process and surface erosion appear unsupported or are unnecessarily broad in application. There is no sampling plan developed or implemented to confirm the accuracy of the reported characteristics. The variability of rain fall cells, typography, and soil types should be part of modeling. In modeling, if you make broad based generalized assumptions - the resulting answers will be broad based and general, which sometimes precludes the possibility of obtaining accurate and finite results. Data and conditions from the various areas to be managed should play a more important role in analysis. PL does not account for differences in average slope, soils types, and geologic functions. CAG-16

Empirical testing and follow up are needed for determinations on individual watersheds. How do average slope differences and loss of cover relate to potential water yield? How do various factors such as ERA, areas of soil compaction, and percent of watershed harvested in a 7 to 10 year period relate to water yield? Are there not differences in flow and runoff regimes in individual watersheds? In watersheds where other ownerships and management plans are significant, how will these practices be accounted for in hydrologic potential impacts, analysis and management technique. It is not clearly defined by PL how forest cover management will be effected to protect large and small areas of instability and potential erosion. How will the late seral and additional WLPZ protections be allocated to such areas? What size and other determining factors are being afforded for such protections?

Surface Erosion

CAG-17 How do they evaluate runoff potential for culvert sizing? Their discharge predictive model is not being accurately used. Is there prioritization and timelines for upgrades, erosion problems correction - enhancement?

CAG-18 Road closure/abandonment , road surfacing, and winter road operations are not sufficiently addressed. I would like to see some reporting on the effects of the December 96 - January 97 rains on their roads systems.

What part does enhancement play in management of these issues? There is no definitive statement on this by PL.

I do not see how Class IIIs are figured into a relative risk /disturbance index and their sediment delivery modeling. How are they estimating potential delivery of stored colluvium? PL's spatially distributed sediment delivery ratio is a generalized model, based on broad assumptions, and not relying on actual ground conditions.

Sediment delivery ratios and the assumption that "stream flow effects related to forestry management will not significantly alter sediment yield" need to be validated in respect to operations in specific WWAAs. Would not these ratios change and be subject to slope, soil and geomorphic conditions, percentage of roaded area, and type of silvicultural operations?

Are PL's predicted ranges of yield reasonable and acceptable? Is it acceptable to apply this value to all planning areas? Could better projections of average yield be obtained, reasonably? Do these sediment criteria fall within the Basin Plan and EPA attainment strategies?

What are the additive or compounding effects of multiple entries as a causal factor in erosion and stream channel impacts? PL seems to deny the possibility, but suggests only monitoring will tell. How will this be accomplished? Is there in place, in the HCP/SYP, stream monitoring protocol to address this issue, with scheduling and completion dates for timely review?

Class IIIs deserve additional protections. Class III watercourses represent a large portion of any drainage (in the 45% to 50% range). They are known to be capable of considerable sediment production, have habitat value, and are a LWD recruitment source. Yet they have not been afforded their share of analysis or protection policy.

The multiple prescriptions listed to limit impacts in the HCP/SYP are not qualified by a time frame or scheduling for implementation, nor are they qualified by intensity or duration of application. When they say they will increase time between harvest in sensitive watersheds, how much time are they talking about? When are the new road standards to be put in place? Class III WLPZ protections in the most sensitive watersheds do not meet necessary protective standards. Modeling assuming that these prescriptions are in place is presumptive and inaccurate.

Mass Wasting

Ground (geomorphic and soil) conditions - use of average slope as a predictor of unstable conditions and/or of potential for soil loss is not an accurate predictor. Soil types, gorges, geomorphic features, wet areas, and sensitive areas are not accounted for on a site specific basis. Geologic information is, in general, either inaccurate and/or incomplete. CAG-19

The PL HCP/SYP does not include existing available information from CDMG landslide and geomorphic mapping. Critical site mapping is incomplete. Reference to historic PL THPs would probably provide appropriate information of EHRs, landslides and unstable areas, problematic erosion sites and water course crossings. These sites could be reference to HCP/SYP GIS mapping of Critical Sites and be used to better predict erosion potential. There is a general lack of available existing information including: existing mapping by public agencies, information on known landslides from past and present THPs, and data from aerial photo interpretations and field investigations. Overlaying mapped landslides on EHR maps can facilitate this review. CAG-20

Have implications and findings of new studies, including *Aerial Reconnaissance Evaluation of 1996 Storm Effects on Upland Mountainous Watersheds of Oregon and Southern Washington* (Pacific Watershed Associates, May 1996), been considered in mass wasting analysis? Recent studies indicate that road construction and silvicultural applications (clearcutting) are associated with a large percentage of failures and mass wasting events, above the natural background level. CAG-21

Source Analysis

The methodology includes modeling (modules) to assess surface erosion and mass wasting. Average slope and other factors considered for prediction of erosion and soil loss are general in their predictive capabilities. These models do not provide a synthesized, or accurate, estimation of erosion or sediment from different sources . This connection should be required for source analysis, and the mitigatory and monitoring process. The source analysis should then be linked to instream indicators and management . Other management criteria needs to be linked to sediment modeling such as silvicultural relationships, number of entries and acreages to be harvested, enhancement procedures, etc. to establish acceptable policy associated with disturbance levels. CAG-22

How is the evaluation of potential sediment delivery linked with historic sediment transport and stream sediment loading? What is the history of mass wasting events in specific areas? Stream channel assessments, estimates of potential for sediment delivery to streams, and monitoring are needed to make these determinations. CAG-23

How is erosion and sediment from stream bank erosion addressed?

How are deep seated failures addressed?

Is geomorphic mapping and soil type mapping used in the predictive models? If so, please explain.

Channel Assessment

CAG-24 The use of remotely collected data for modeling channel characteristics is questionable. Channel conditions in previous THPs are boilerplate and insufficient What is the protocol for channel assessment and how will this be used in THP review? If the goal is to protect as much habitat as possible, why is there no timeline for effecting protections and adjusting THPs and data collection to do same?

Water Temperature and Shade

CAG-25 Management for temperature at close to lethal threshold zones may be inappropriate. Should not management be for optimum ranges to facilitate recovery? If PL intends, as they indicate, to develop criteria to identify streams with temperature problems, then they should get on it. Fishery advocates have been asking for temperature monitoring for years. This process could have been well advanced by now if it was not for PL's foot dragging. Do they have any time lines for temperature assessment completion?

In streams with extremely warm water will greater percentages of canopy closure be effected? If so, how will these prescriptions be implemented? How and when will cross-referencing or integration of temperature requirements be accomplished in the Mitigations and Monitoring Plan for Coho Salmon?

CAG-26 Timber harvest operations and associated activities such as road building operations and canopy reduction in Class III watercourses with effects (thermal loading) related to water isolation should have more in depth analysis in the HCP/SYP document. Temperature effects from instream aggredation should also be discussed.

CAG-27 Enhancement activities that may help reduce the impacts of temperature effects are not discussed. Is this not to be considered in the HCP/SYP?

Fish Habitat

CAG-28 Fish habitat assessment should include a discussion of existing conditions and known historic conditions, stream assessments including available habitat typing, habitat parameters, and instream monitoring, limiting factors discussion, assessment of potential for impact, and related mitigations and prescriptions for protection and enhancement.

CAG-29 Have the LWD standards been reevaluated by PL - NMFS?

CAG-30 How is habitat or channel sensitivity to be determined? This factor should also be part of THP review. The HCP/SYP proposes to use generalized resources sensitivity ratings in lieu of site specific analysis. Since much of this approximation modeling depends on field review, the THP review process can be part of PL's modeling update and field verification process.

Revised HCP/SYP, in the discussion of the three D's (deep, dark, and dense) deciduous riparian and conifer riparian values need to be discussed in the ecology of coho salmon. CAG-31

Silviculture and Soils

Silvicultural impacts on soils and soil productivity are not analyzed and discussed. Verification of soil productivity, site class, and ongoing impacts to soils must continue to validate growth modeling and monitor impacts to soils and related issues. Analysis of changes in root mass and the potential for soil loss as a potential silvicultural impact on soil loss and stream sedimentation must be part of the HCP/SYP or THP soils analysis. Also not present in soils productivity analysis are components such as forest litter, lichen, fungi, invertebrates, and bacteria in the maintenance and development soil values. CAG-32

Analysis, potential level of risk/disturbance, must be related to different silvicultural technique. Obviously different silvicultural approaches have varying impacts on soil and habitat resources. Risk/disturbance indexes, with projected thresholds, need to take this into account. Specific threshold levels of risk/disturbance, using quantitative methods, need to be part of predictive modeling and establishment of a control regime.

Wet weather controls are not specific enough for resource protection. Definition of qualitative conditions needed on roads slated for wet weather hauling are not sufficient. CAG-33

When will GPS and other GIS based control and monitoring of drainage features be put in place? Why is this not happening now?

Are roads and drainage features on PL's outlying holdings getting the same review and support attention as the major consolidated holdings? CAG-34

Prioritization of road and erosion sites for corrective action and mapping locations of problem road sections and landings that need corrective action or to be put to bed should be part of this section. CAG-35

Cumulative Watershed Effects

As stated above modeling assumptions relating geomorphic and hydrologic functions, impacts to water quality and fish, plant and wildlife species over time are not definitive, nor accurate enough for cumulative impact determinations on smaller limited subsections of individual operational area. CAG-36

PL claims to put in place additional resource protective operational standards, beyond what is called for in the Forest Practice Rules. The is no timeline or direct action plan for the implementation or the monitoring of implementation and effectiveness of such plans. Speculation on results is just that - speculation. Until changes over time are documented to be reducing impacts to impaired resources, only the claim of such benefits is extant. Until an implementation plan and time schedule are set for management changes - no claim of benefit can be made. Only monitoring over time will disclose net loss or gain of benefits.

Potential additional CWEs for timber harvest operations are likely as well and the need for site specific review and mitigation of potential impacts and enhancement processes to deal with continuing impacts.

CAG-37

Claims and argument in the HCP/SYP that current logging practices have no effect on hydrology, peak flow and soil loss potential are not necessarily supported by the studies noted and all other relevant peer reviewed studies on the subject. There can be linkage between specific silvicultural application to hydrologic changes and soil loss. PL's justification of their modeling is inappropriate, as they have done a lousy job of Critical Sites identification. Here PL is using a generalized model to justify erosion assumptions that need definitive factual support. PL's analysis misconstrues "natural" as existing conditions, rather than "unmanaged" conditions. PL's response that assumptions must be made using surrogates for analysis and that "sediment discharge typically declines rapidly after disturbance" justifies assumption based modeling. These assumptions may or may not hold true for specific watersheds and applications - this remains to be seen. These techniques will only provide very general non-site-specific answers that make prediction and management very difficult. The responsible managing agency must question the purpose and efficacy of this generalized large landscape level analysis and the use of same for assessment of CWEs. PL does not demonstrate how accountability is built into the process, how management systems will be applied and in what time period to be effective, nor are there appropriate targets for watershed resource management.

CAG-38

There is no composite or site specific risk/disturbance level analysis/rating linked with adaptive prescriptions. Generic ratings and analysis, without problem identification, seem to promote nonspecific management program constraints. Analysis for THP review must identify risk and disturbance criteria on a site specific basis. Generic risk/disturbance analysis/rating diminishes specific problem identification needed for the review and mitigatory process.

What levels of risk or disturbance are acceptable given the need to conserve and recover listed species and protect the beneficial uses of water. The HCP/SYP lacks in distinguishable policy and analysis in this area. Also, there is no factor or control that allows for lags in predictive modeling and monitoring data and the implementation of protective policy. When certain levels of risk/disturbance are achieved the HCP/SYP my recognize and identify these levels, but no protective action is indicated. This also points to the problem of no extant policy regarding risk/disturbance and tiered prioritization of factors to be protected by specific mitigatory policy.

Equivalent Roaded Area factor is a risk/disturbance index. There should be policy there for limiting and reducing roaded area. This is not in the HCP.

PL has not yet disclosed how the results of assessments would be integrated to influence site-specific changes in management. They claim a spatial scale approach with fine tuning on the WWAA level. How will this work? What kind of time frames are we talking about in assessment and implementation? How does this work down to the site specific level of THP review? They need a cohesive outline of management actions, per planning watershed, with time frames.

How does the continuous HCP/SYP monitoring and modeling update loop, adaptive management monitoring, interface with the THP interdisciplinary process? Will each team member, and the public be provided volumes of HCP/SYPs and continuous updates for review? Obviously, the answer is no. The only way to keep all parties on the same page is to include the information, analysis, and justification in the THP with all necessary and pertinent site specific data is included. CAG-39

If baseline conditions are defined by WHR types, why is this analysis not showing up in THP review? Degraded baseline conditions must be part of appropriate CWE analysis. CAG-40

Mitigations

Standard mitigation for roads, winter operations, and erosion control and how this relates to the site specific need of THP review is not sufficiently discussed in the HCP/SYP. Areas in need of mitigation and/or corrective activity are not adequately identified in the HCP/SYP. The THP is supposed to address this need for problem identification and mitigation. Criteria for determination of application of protection measures must be specific and included in THP resource discussion. CAG-41

Models for determining relative risk/disturbance level do not provide site, or area specific, management information. Composite ratings are not sufficient for finite THP management. The HCP/SYP does not provide an implementation plan which describes the necessary control/restoration actions needed to meet water quality management guidelines (EPA TMDL, Basin plan., FPRs objectives). Identification of problems, sensitive areas, specific remedies, and monitoring procedures should be part of an implementation plan. CAG-42

What value does a composite WRR rating for an entire WWAA provide? Such generic ratings and analysis, without problem identification, seem to promote nonspecific management program constraints. CAG-43

Class III protections needs to be followed up with additional Class III protective policy and guidelines - especially in sensitive areas (see attached matrix). Current HCP/SYP protections are insufficient. CAG-44

What will be the road rocking, WLPZ protection standards, stream buffers (as related to slope and unstable inner gorge situations), culvert sizing, organic debris (duff) used for erosion control standards? More operational site specific detail is needed. CAG-45

Roaded area reduction policy, based and ERAs, must be part and parcel of risk/disturbance index related mitigatory policy. CAG-46

The HCP/SYP rules indicate that CWE analysis is to occur in the HCP/SYP document and mitigations of potential impacts are to be considered. This brings up potential conflict as to the authority of the THP as opposed to the HCP/SYP. CAG-47

Mitigation monitoring feed back loop needs to be attached to the site specific THP process. Validation of effectiveness of mitigations is called for. CAG-48

APPENDICES

I have reviewed approximately 700 Timber Harvest Plans on EPA 303 (d) listed rivers that have been approved since 1987. The findings of this review in the area of operations for Pacific Lumber, the Van Duzen, Mad, and Klamath Rivers showed:

That over 50% of the THPs indicated operations with a very high potential to deliver sediment to fish bearing streams.

That approximately 50% of the THPs had substantial WLPZ harvesting, road and landing construction in the WLPZ, and use of heavy equipment in the WLPZ.

There was not included in these THPs sufficient analysis of Cumulative Watershed Effects and/or monitoring to show to show trends over time of fish populations and or pollutant and habitat stressors.

Of these sensitive THPs that indicated these practices the California Department of Fish and Game and the North Coast Regional Water Quality Control Board attended field review of water quality and fishery issues on a very small fraction - less that 10%

The National Marine Fisheries Service has a more complete analysis of this information in a document: MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT FOR MOTION FOR SUMMARY JUDGMENT, Joseph J. Brecher, Esq., January 23,1997. A copy of this document is available from NMFS, or, upon request from Coast Action Group.

CAG-50

Initial review of the HCP and SYP documents submitted to NMFS and the California Department of Forestry fail to address appropriate comprehensive management actions needed for maintaining Long Term Sustained Yield and the maintenance and enhancement of overall water quality and wildlife values. In short analysis of Cumulative Watershed Effects, WLPZ protections, Geomorphic functions of mass wasting and soil loss, Stream Channel Assessment, and Wildlife Habitat Relationship values are all inadequate. There is no adequate plan put forward to administer a monitoring and reporting system to assure implementation of management policy. These loosely written documents can not be relied on to assure compliance with any of the objective set forth in these programs.

Other Documents to be attached to appendix:

Targets Proposal in Matrix Format

Forest Practice Rules Review - Comments on Resource Agency Response

Monitoring

CAG-49

There are short and long term monitoring strategies in the HCP/SYP; but, there is no coherent specific monitoring program outlined in the HCP/SYP . There is much blather about what would be desirable to do, but no specific plan outlined for implementation in a specific time frame..

How are specific indicators and threshold of concerns for these indicators to relevant to monitoring protocol, over time? How do specific management techniques relate to predictive models and monitoring results?

Is there , in place, specific implementation of plans to monitor the compliance and effectiveness of mitigations called for in THPs and HCP/SYPs?

How will monitoring help meet resource protection mandates of FPRs, Clean Water Act, State and Federal Endangered Species Act, and the Basin plan?

For COAST ACTION GROUP,

Please see attached appendicies.

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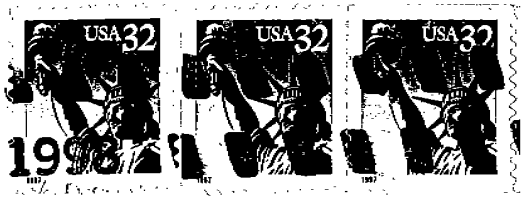

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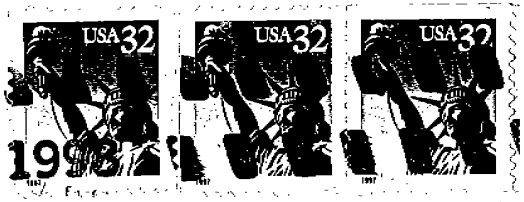

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IMPLEMENTATION PROPOSAL

for

PALCO HCP/SYP

Submitted by

Alan Levine November 1998

Please reference all previously submitted citations and suggestions. It is noted that many of these topics are addressed in previous submitted Targets and Implementation Committee(s) documents and reports.

Roads and Landings and Stream Crossings - Sediment Source Reduction - Implementation Policy

CAG-51

Identify and eliminate, over fixed time period, contributors and potential contributors of sediment related to roads, landings and water crossings. This calls for inventorying sources, system upgrades, site rehabilitation, and deletion or the putting to bed of facilities over stated time periods with quantification of results. Records of completion reports will be part of inventory system. This also calls for policy relating to use (guidelines) that limits potential sediment input from land use; i.e. winterization of use, road and culvert maintenance policy, culvert sizing policy, wet weather operations policy. All policy must set enforceable standards for all types of land use (not just timber harvest). Inventories and completion reports of all stabilization and enhancement activities showing net reduction of sediment inputs and reduction of potential sources of sediment.

Reduction of delivery of instream delivery of fine and course sediments from controllable sources linked to the following: Use of planning unit format - WAA - to show sediment source reduction methodology.. % reduction of sediment input (potential inputs) linked to key sites. Finite number of sites inventoried ("Star Worksheet" or other inventory method) = key sites. Percent (%) of key sits assessed and effectively mitigated, repaired, or upgraded linked to absolute number (which is a revisable and updateable figure). All sites shall be inventoried in 2 years. All repair and upgrades completed in 10 years = 10% per year. Upgrades includes the process of making permanent stream crossings temporary. Identification and remediation of sites in THPs is to be counted as part of this process. % control and reduction from source is linked to % reduction of instream inputs. These calculated amounts of potential inputs less verified sediment reductions are to be part of "0" Net Discharge Policy where % sediment reductions are demonstrably greater than potential inputs.

Target time schedule and completion reports - less than "O" Net Discharge (as part of permit process) - in addition to crossing and facility management policy credit to sediment source delivery control can be related to % of existing facilities deleted, stabilized and put to bed.

Operations related to land use will refrain from illegal, inappropriate, and unpermitted activities (facility construction in the near stream zone).

CAG-51 CON Culverts shall be oversized to accommodate a 150 year event = approximately 30% larger by volume than culverts designed to accommodate a 50 year event. Or, all culverts that are not oversized shall have rock armored spillway channel installed to take overflow in case of culvert failure or blockage.

Sediment Sources - Upslope and Stream Bank - Implementation Policy

CAG-52 CON. The Upslope Sediment Source Implementation Policy can be part of the methodology outlined in Roads and landings above. This method will lead to overall reduction in sediment inputs.

Upslope activities that would potentially deliver sediment to stream and potential sources of mass wasting, gull or rill erosion, and surface erosion from exposed soils or activity shall be assessed and mapped - determination of risk, mitigation or deletion of operational areas will be part of land management policy. Target time schedule and completion reports, mass wasting and surface erosion risk analysis and critical site mapping. Less than "O" Net discharge - in addition to crossing and facility management policy credit to sediment source delivery control can be related to % of existing facilities deleted, stabilized and put to bed.

Mapping and assessment of potential sediment and erosion risks by site (see previous Implementation - Monitoring document). These sites are to be part of overall inventory addressed by land use policy. Controllable sites of potential risk will be treated, over time, by land use policy and/or stabilization technique for risk elimination with the ultimate goal of reducing mass wasting and surface erosion. Land use policy will indicate avoidance of potential sediment source risk. Recognition that this long term goal will be only partially effective indicates dependence on near stream filtration, bank stability, and provision of other habitat requirements by developing later seral type conditions in the near stream management area (WLPZ - objectives and strategy stated). Inventories and completion reports of all stabilization and enhancement activities showing net reduction of sediment inputs and reduction of potential sources of sediment.

LWD Recruitment Policy

CAG-53 Later Seral management and adequate stream buffers will allow for recruitment of LWD. This recruitment may never reach stream if specific trees likely to fall in the stream are not marked for retention. The need for habitat complexity is critical for overwintering survival. Instream complexity of deep pools, Rocks, LWD, and cover provide refugia during high flows. Note: LWD recruitment is also critical to estuarine habitat complexity for coho. It is the most critical element lacking in the estuaries of most coho producing streams (personal comm.. Bill Trush).

Definition of LWD is 12 " x 20 and larger.

Five trees per 100 feet of stream (both sides), that are likely to fall into the stream should be marked for permanent protection/retnetion. These trees should be of the largest 20% of size class existing in the area. If inspection notes lack of LWD 4 trees from the largest 20% of size class that are likely to fall into the stream shall be girdled.

LWD specimens should never removed from streams for commercial purposes.

RIPARIAN MANAGEMENT ZONE

Class I Steams

CAG-54

A distance of 100' (minimum) is needed to accomplish filtration from sediment sources and provide area for LWD recruitment. Thus, this 100' NO-CUTbuffer should be the minimum filtration/non-disturbance buffer for any watercourse that can deliver sediment to streams. Class I WLPZ/RMZ should be slope dependent: 100' on slopes <30%, 150' on slopes 30-50%, and 200' on slopes > 50%. In the case of existing unstable inner gorge areas, measurement of WLPZ/RMZ width to commence at the outside edge of the inner gorge area. It should be remembered that coho are a late seral dependent species and management objectives should approach late seral conditions in controlled areas = WLPZ/RMZ

Land management activity related to roads, landings, and stream crossings in the riparian (WLPZ/RMZ) are shall conform to criteria set forth under Roads and Landings (above).

The following policy objective and criteria applies to all Riparian Implementation matrices and should be a Desired Future Condition:

> Sediment source filtration characteristic, stream bank stability characteristics, LWD recruitment potential, as well as other near stream habitat (target) parameters, are dependent on integrity of the near stream riparian zone. The near stream (WLPZ/RMZ) is to be managed for "Late Seral" characteristics. In Class I near stream zones the overstory and understory cover should approach 100% (by spherical densiometer). There should be a good mix of conifers and understory hardwoods to provide shade, leaf litter, filtration, LWD recruitment potential, bank stability and other elements provided by good near stream habitat conditions.

Other Policy Considerations for Class I WLPZ/RMZ/RMZ/RMZ:

> No timber harvest or activity should be allowed in the WLPZ/RMZ unless late seral characteristics are extant: i.e. For Class I - 85% to 100% overstory cover, on each side of stream bank, provided by a minimum of 6 trees per or 100' of stream bank (5 to be conifers) over 30" DBH, 50% greater than 24" DBH (at least 50% conifers, and 30% trees in the 16" to 14" DBH class (at least 50% conifers), largest trees to be within 50' of stream, and a minimum basal area to be maintained of 250 sq. ft DBH per acre.
>
> WLPZ/RMZ reduction for cable yarding (under Forest Practice Rules) should not be permitted.
>
> All WLPZ/RMZ areas and crossings are to be flagged and trees intended for harvest to be marked prior to PHI.
>
> Instream and near stream extraction of down LWD should not be permitted.

CAG-54 CON

WLPZ/RMZ operations and hauling in wet weather should not be permitted.

Areas of disturbed soil larger than 100' sq. shall be seeded or mulched.

Reduction of WLPZ/RMZ facilities - roads, skid trails, and landings - should be part of the ongoing assessment/prioritization process (see Roads and Landings above). Prioritize potential sources by degree of potential contribution (see above). Set schedule for putting such facilities to bed or for stabilization. Link with rehabilitation activities and THP assessment and mitigation process. Maximum time period for dealing with critical sites = 10 years.

Weatherization and competent rocking of all haul roads in WLPZ/RMZs to be used. No use without completion of this task.

Class II Steams

CAG-55

A distance of 100' (minimum) is needed to accomplish filtration from sediment sources. Thus, this 100' buffer should be the minimum filtration buffer for any watercourse that can deliver sediment to streams. Class II WLPZ/RMZ should be slope dependent: 100' on slopes <30%, 125' on slopes 30-50%, and 150' on slopes > 50%. It should be remembered that coho are a late seral dependent species and management objectives should approach late seral conditions in controlled areas = WLPZ/RMZ

Land management activity related to roads, landings, and stream crossings in the riparian (WLPZ/RMZ) are shall conform to criteria set forth under Roads and Landings (above).

The following policy objective and criteria applies to all Riparian Implementation matrices and should be a Desired Future Condition:

> Sediment source filtration characteristic, stream bank stability characteristics, LWD recruitment potential, as well as other near stream habitat (target) parameters, are dependent on integrity of the near stream riparian zone. The near stream (WLPZ/RMZ) is to be managed for "Late Seral" characteristics. In Class II near stream zones (WLPZ/RMZ) the overstory and understory cover should be 80% (by spherical densiometer). There should be a good mix of conifers and understory hardwoods to provide shade, leaf litter, filtration, LWD recruitment potential, bank stability and other elements provided by good near stream habitat conditions.

Other Policy Considerations for Class II WLPZ/RMZ:

> No timber harvest or activity should be allowed in the WLPZ/RMZ unless late seral characteristics are extant: i.e. For Class II - 75% overstory cover, 50% of which is to be conifer, on each side of stream bank.
>
> All WLPZ/RMZ areas and crossings are to be flagged and trees intended for harvest to be marked prior to PHI.

CAG-55 CON.

WLPZ/RMZ reduction for cable yarding should not be permitted.

All WLPZ/RMZ areas and crossings are to be flagged and trees intended for harvest to be marked prior to PHI.

These management values apply to other land use activity such as farming, grazing and gravel mining.

Instream and near stream extraction of down LWD should not be permitted.

WLPZ/RMZ operations and hauling in wet weather should not be permitted.

Areas of disturbed soil larger than 100' sq. shall be seeded or mulched.

Reduction of WLPZ/RMZ facilities - roads, skid trails, and landings - should be part of the ongoing assessment/prioritization process (see Roads and Landings above). Prioritize potential sources by degree of potential contribution (see above). Set schedule for putting such facilities to bed or for stabilization. Link with rehabilitation activities and THP assessment and mitigation process. Maximum time period for dealing with critical sites = 10 years.

Weatherization and competent rocking of all haul roads in WLPZ/RMZs to be used. No use without completion of this task.

Class III Streams

CAG-56 CON.

Class III watercourses should have a 50' EEZ on slopes > 30% and a 100' EEZ on slopes > 30% with retention of at least 60% of the overstory and understory.

EEZ boundaries and crossings are to be flagged and trees intended for harvest to be marked prior to PHI.

Class III streams shall be assessed for steep, unstable headwater areas that have high hazard for mass wasting . In such cases an exclusion buffer of one sight potential tree height or the edge of the inner gorge shall be created.

Channel Conditions - Riparian Implementation

CAG-57

For near steam sediment source filtration, bank stability, LWD recruitment, food source recruitment, temperature control development and maintenance of near stream (WLPZ/RMZ) management for Late Seral conditions is desired and critical (see above).

Documentation and monitoring of instream habitat and morphology related trends: stream bank stability, residual pool volume, particle size distribution, % embeddedness, improvement in spawning area reaches, pool riffle ratio, crossection trends by fixed point elevation measurements, instream LWD, near stream buffer recruitment and late seral management, substrate particle size

CAG-57 CON.

distribution analysis by McNeil, pool frequency - depth - volume - and limitation by sediment filling, as well as ocular estimation of other stream parameters will provide tools for assessment over time. Instream stored material and channel conditions cannot really be considered independently as the changes of relationships are interdependent. In fact this whole matrix is full of interdependent relationships (and keeping tabs on all of this is driving me crazy).

The entire strategy for reaching desired conditions is based on realizing desired near stream late seral habitat in the stream zone (see Interim Riparian implementation - late seral) and instituting appropriate erosion control inventory and implementation on roads, stream crossings, and upslope sediment sources(see Coho Considerations, CDF pp. 26 -38). Late seral component standards are already defined, readily attainable, and quite easily measurable.

Habitat Complexity - Riparian Implementation

CAG-58

Late seral management dependent (see above). Late seral dependent - see #33, 34 above. Quantitative measurement of frequency and size of LWD (formerly LOD - large organic debris - named after some of my best friends), rocks, undercut banks and cover is difficult. Ocular assessment and grading is possible (see USFS, Platts) . Management for Late Seral habitat type (see above - with size class population standard format with width of WLPZ/RMZ provided by CDF and FEMAT and arguments for buffer provided for by just about every source) will augment and satisfy instream habitat complexity.

Instream Stored materials - Riparian Implementation

CAG-59

Reduction of instream stored material is a goal that shall be measured over time by fixed point elevation transects, in specific reaches sediment sampling by McNeill method, measurement of pool residual volume, pool depth, pool riffle ratio, and spawning substrate conditions and availability. Down cutting and trends will become apparent over time.

Less than "O" Net discharge analysis - critical sites analysis.

Spawning Habitat - Riparian, Roads and Upslope Implementation

Late seral, roads and upslope management dependent (see above).

Rearing Habitat - Riparian, Roads and Upslope Implementation

Late seral, roads and upslope management dependent (see above).

Overwintering Habitat - Riparian, Roads and Upslope Implementation

Late seral, roads and upslope management dependent (see above).

Increasing Fish Population - Riparian, Roads and Upslope Implementation

Increasing population trends - this is instream and riparian condition, late seral management dependent, and upslope condition linked.

Instream Temperature - Riparian, Roads and Upslope Implementation

Late seral management dependent problem - see riparian implementation above. Note: Temperature loading is sediment dependent.

Silvicultural Systems and Sediment Reduction and Habitat Reduction

Silvicultural prescriptions that result in clear-cut or like clear-cut conditions (leave tree stocking less than 60 sq. ft./acre basal area) shall be prohibited. Entry cycle shall be no less than 30 years. CAG-60

Thresholds shall be established relative to silviculture impacts and percent of planning watershed subject to timber harvest operation shall be established for habitat displacement and sediment production for listed species.

Winter Operations

Winter Operations, except for falling shall not be permitted. The winter period shall be from October 1 to May 1. Falling may occur only when site access is made available by suitable and weatherized all season road. CAG-61

Operations on Unstable Ground

No operations on slopes over 65%, or slopes over 50% with High EHR unless ground based equipment is confined to stable, flagged, skid trails. These skid trails shall be mapped as tractor exception areas. Ground based equipment operation on above described areas that lead without flattening to a Class I or Class II watercourse shall be prohibited. CAG-62

No operations on slides are to be allowed.

Road Construction

Roads and landings longer than 100 feet in length located on slopes over 65%, or on slopes over 50% which are within 100' of the boundary of a WLPZ/RMZ will not be constructed. Road construction with pitches greater than 15%, or in any area of geologic and soils instability, shall be reviewed and designed by a certified geologist with mitigations in place so as to insure "0" Net Discharge. Side casting of spoils on steep (> 40%) slopes or on previously deposited fill shall be avoided. These spoils shall be end hauled to a stable location. Road widths shall be minimized. Roads shall be outsloped for drainage as much as practicable. All WLPZ/RMZ roads shall be weatherized or rocked with competent rock to a depth of 14". CAG-63

Total roaded area shall be reduced by 30% in a 10 year period.

Sources:

Coho Salmon Considerations for Timber harvesting under the California Forest practice Rules, California Department of Forestry, 1997

Coastal Salmon Conservation: Working Guidance for Comprehensive Salmon Restoration Initiatives on the Pacific Coast, NMFS, 1996

Transactions of the American Fisheries Society, Volume 117, January 1988

Influence of Forest and Rangeland management on Anadromous Fish Habitat in the Western United States and Canada, William R. Meehan, Technical Editor, 1. habitat Conditions of Anadromous Salmonids , D.W. Reiser andT. C. Bjornn, 1979

Methods for Evaluating Stream, Riparian, and Biotic Conditions, William S. Platts, Walter F. Megahan, G Wayne Minshall, 1983

Assessing the Effectiveness of California's Forest practice Rules in Protecting Water Quality, prepared by the Monitoring Study Group (MSG) of the State Board of Forestry with assistance form William Kier and Associates, 1993

Aquatic Field Protocols Adopted by the Fish, Forests, And Farms Community (FFFC) Technical Community, compiled by Ross N. Taylor, Fisheries Consultant, 1996

An Ecosystem Approach to Salmonid Conservation, B. Spence, G. Lomnickey, R. Hughes, R. Novitzki, for Management Technology (MANTECH), 1996

Evaluating the Long - Term Consequences of Forest Management and Stream Cleaning on Coarse Woody Debris in Small Riparian Systems of the Central Rocky Mountains, D. Bragg and J. Kershner, 1997

Influence of Forest and Rangeland management on Anadromous Fish Habitat in the Western United States and Canada, William R. Meehan, Technical Editor, 1. habitat Conditions of Anadromous Salmonids , D.W. Reiser andT. C. Bjornn, 1979

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July 28, 1998

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Subject:

Review and comment of National Marine Fisheries Service concerns stated in "Effectiveness of the California Forest Practice Rules to Conserve Anadromous Salmonids" and Response by The Resources Agency dated July 10, 1998

Overview

The National Marine Fisheries Service raised questions on the efficacy of the Forest Practice Rules. This evaluation, and review for modification assessment, of the Forest Practice Rules was agreed by the State of California, Resources Agency, and the National Marine Fisheries Service (NMFS) Memorandum of Agreement on action to be taken on the potential listing, under the Federal ESA, of North Coast Steelhead Trout. Areas of deficiency (and potential deficiency) in the Forest Practice Rules were justifiably pointed out. The Resources Agency response was to deny any and all shortcomings in the Forest Practice Rules.

It is truly amazing that after all the discussion of impacts by current, and past, forest practices on salmonid populations, that the Resources Agency can not find any areas where the Forest Practice Rules are deficient, or where some improvement can be made. This position by the Resources Agency not only contradicts current science, statements made by subordinate agencies and their personnel (Department of Mines and Geology, Department of Fish and Game, and the North Coast Regional Water Quality Control Board); the Resources Agency contradicts its own position and statements in its failing effort to defend the efficacy of the Forest Practice Rules. It is not just amazing, it is dumbfounding that the Resources Agency did not include the participating agencies in this review process (also not included in review were the results of WLPZ Rules Effectivness surveys - by CDF, NCRWQCB included, and CDFG).

The following is a criticism and comment of the rules, as they are applied, with argument presented by NMFS, Resources Agency, and others (myself included).

APPLICATION OF THE FOREST PRATICE RULES

It is not claimed the the whole of the Forest Practice Rules are deficient. It is claimed (see arguments below) that aspects of the rules are deficient. Inspection of the arguments will bear this out to be true, regardless how loudly the Resources Agency attempts denial of this fact.

To correct deficiency in the application of Forest Practices, in the areas we are considering, it must also be acknowledged that part of the respnsibility of the failure of the rules rests with the administration of how the Forest Practice Rules are applied. Missapplication (poor management), mistake (error), and omission in rules application and management are all part of what is making the system not work right with consequences of jeoprodized and lost resources - including fisheries.

For the Resources Agency to deny responsibility in FPRs evaluation and modification, further disposes this system of management to future failure.

ADAPTIVE MANAGEMENT

The Resources Agency asserts "California relies on an adaptive management approach in regulating timber harvesting." Adaptive management presupposes that monitoring with actual measurement of specific criteria as feed back into a analysis loop, thus allowing for assessment updates and management modification if necessary. It should be pointed out that the Forest Practice Rules very simply state that "**No Actual Measurement is Intended**" regarding the assessment of all parameters mentioned in the FPRs relative to instream health and desired conditions for instream or nearstream health. Thus, one could make the fair and reasonable argument that when it comes to making Cumulative Impacts Assessment (Technical Rule Addendum #2) that assessment must be done without measurable parameters - under the rules.

The next claim made by the Resources agency; "This approach (adaptive management) weighs heavily on mitigating any significant adverse impact on environmental resources." The problems is that we will never know if mitigations are sufficient without monitoring or data - an indication that measuring things is necessary. This claim also suggests successful mitigation. When cumulative effects review is limited to the perpective of what is proposed for the relatively small area of a THP. And when indivuadiual THP effects are compared related to effects to the area of planning watershed, and up and downstream effects - over time are not included in analysis; it is CDF and the reviewing agencies that are limited to a partial and incomplete view rather than the outsider (NMFS). The truth of it is that the reviewing agencies do not attend the great preponderance of THPs and when they do they only get a limited view (this is due to time and funding constraints - see review team participation - below).

If "the FPA is intended to regulate timberlands to achieve two goals: (1) to enhance, restore and maintain the productivity of timberland wherever feasible; and (2) to achieve maximum sustained production of high quality timber while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, regional economic vitality, employment and

aesthetic enjoyment"; some demonstration, including the use of use of data, by the Resources Agency should be made on the success of these stated mandates. Because the approval of individual timber harvest plans (THP) by CDF involves the exercise of discretion and judgment and because the timber harvesting has the potential to affect the environment, the California Environmental Quality Act (CEQA) applies to the process also. This act is similar to the National Environmental Policy Act (NEPA) and requires analysis of the environmental effects of individual projects and of alternatives and mitigation measures to avoid or lessen any significant environmental effects of the project.

The statement "CEQA requires that public agencies not approve a project as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of the project. The applicant must disclose and identify the significant effects of a project for state agency and public review" may be true as to the intent of CEQA. As far as application of the Forest Practice Act (FPA - under CEQA) nothing could be much further from the truth. The fact is in the game of writing and approving THPs it is often the case that the plan preparer proposes a THP that does not substantially represent conditions on the ground of the THP accurately, CWEs and stream and near stream assessments are usually incomplete or inaccurate, and mitigations are not sufficient to reduce impacts to a desired level or protect the beneficial uses of water. Then, CDF and the other review team agencies are hard pressed to bring the proposed plan closer to what might be considered compliance with the FPA. This does not mean that the plan is fully mitigated or designed to protect salmonids or other species.

The Resources Agency statement "Through this process the Registered Professional Forester (RPF), with the help of appropriate professionals develops the THP that they believe will not have a significant effect on environmental resources. Normally, it has more than the rule minimums as protection for environmental resources"; assumes that both Registered Professional Foresters (RPFs = THP preparer) and CDF personnel are well trained and knowledgeable in the area of fisheries resources protection. This simply is not the case as neither has sufficient training, infield experience. Nor isthere an ongoing training and updating program for RPFs and CDF field personnel.

The Monitoring Study Group (MSG) and Long Term Monitoring Program (LTMP) for assessing the effectiveness of the FPRs in protecting water quality has made little progress in assessing FPR effectiveness. Ongoing effectiveness monitoring programs are flawed in that the only measure failures on pre-selected transects (of no logical divinity) without acknowledgment or grading propensity of a failure to eventually impact a water course. Also a very small number of THPs are being assessed.

The Resources Agency states that CDF is developing a compliance monitoring form. They also state that compliance monitoring is done south of San Francisco. They do not state when or how compliance monitoring will be implemented on the north coast rivers. Positive results will be gained if compliance monitoring is used to enhance and enforces the mitigatory process on THPs. It is suggested that the RPF responsible for the THP should do the compliance monitoring and

sign (be responsible for) the effectiveness completion form. There is no reason why compliance inspection by the responsible RPF can not be implemented immediately.

The Resources Agency states that CDFG is to be responsible for trends monitoring. It is not stated what trends are to be monitored - fish population trends? habitat values trends?

REVIEW TEAM ATTENDANCE

The Resources Agency puts great emphasis on the Review Team approach, with participating, agencies. The problem is that the funding is not there to provide for attendance in the THP review process by DMG, NCRWQCB, and CDFG.

Statistically, review of actual attendance shows (see Declaration by Alan Levine, Review of 683 THPs on 303 (d) streams - attached) that about 250 of the 520 THPs would be sediment sensitive. Thus, 120 sediment sensitive THPs did not get reviewed by DMG. This substantiates the statistic in the above mentioned document that DMG attends about 28% of the THPs for each year. The failure in this area of review team attendance indicates a lack of sufficiency to achieve fully mitigated THPs in areas with unstable soils, road construction, and steep slopes.

CDFG and the NCRWQCB attend less than 15% of the THPs (Pre-harvest Inspectons, field review, or 2nd review) on 303 (d) listed rivers (1988 to 1995). Attendance has gotten worse not better since then.

EXCEPTIONS TO THE RULES

Exceptions to the FPRs are common and appropriate justifications for such exceptions lack full explanation or review by a multi-disciplinary review team. Often exception justification is based on the argument that approval of such proposed plans (exceptions) are justified by the use of the "least damaging approach". This approval scenario does not require consideration of all possible project alternatives and the greatest potential mitigation - that is feasible and within reason. Justifications using the "least damaging approach" argument are almost never rejected by CDF. Rationales, and thorough analysis for such justification (for potential impact - on water quality values) is almost never required by CDF for approval of such exceptions. Rarely are such exceptions denied.

SENSITIVE WATERSHED RULES

The Sensitive Watershed Rules are written to be impossible to employ. Not one watershed has be listed as sensitive or afforded protections on a sensitive watershed listing. Even State agencies would find it next to impossible to achieve such a listing under current rules. Only public uproar about massive failures in Bear, Jordan, and Freshwater Creeks got a minimum of attention by the administrating agencies.

EXEMPTIONS

Exemptions are almost entirely missed by FPRs application. No notice of operations is required. One ownership (PALCO/Scotia Pacific) has 200,000 acres under exemption. Exemptions are not frequently inspected, and when spot checked high levels of violations are found (CDF).

GENERAL CONCERNS

Two areas of concern that the National Marine Fisheries service has with the implementation of the California Forest Practice Rules relate to the large number of rules under which adequate conservation for anadromous salmonids depends heavily on the Registered Professional Forester (RPF) having a high level of biological, ecological, and/or geological expertise. It is unrealistic to expect all RPFs have such knowledge. Often, the conservation of ecological resources, including anadromous salmonids, depends upon protective measures that are inserted into Timber Harvesting Plans (THPs) during the review process. Two state agencies, the California Department of Fish and Game (CDFG) and the Regional Water Quality Control Board (RWQCB) have been given statutory responsibility to review THPs for compliance with the California Fish and Game Code and Clean Water Act, respectively. The Division of Mines and Geology also reviews THPs. No integrated guidelines or policies are available to provide a framework for treatment of THPs through the review process (Little Hoover Commission 1994). In addition, the agencies can review only a small fraction of the THPs, and thus are forced to rely on RPFs, not agency personnel, to determine problems and design mitigation measures. Furthermore, even when these agencies participate in a review, there is no requirement that the agencies recommendations must be incorporated into THPs.

The above statement (by NMFS) was not answered adequately by the Resources Agency.

See Review Team Attendance - above

Training in areas of expertise needed by RPFs and CDF personnel is not sufficient, and access to supplemental support is not used frequently enough. Frequently watercourse classification by RPFs is inaccurate (either by design or accident). A one time, four day, watershed academy will not keep new changes in science and watercourse protective applications fresh in the minds of the RPFs.

Resources Agency Response (in quotes):

"When a plan is submitted, CDF immediately initiates review" - this initial review only determines minimum compliance for filing purposes and has no environmental, fisheries, or mitigatory finding - though it is opportunity for review team agencies to ask questions concerning mitigatory issues.

"The DMG also reviews each THP for indications of potential slope instability, and other potential geologic concerns." Of the 520 plans submitted in the Coast Forest District in 1997, there were 131 Engineering Geological Reviews. " Statistically, review of THP attendance shows (see Declaration by Alan Levine - attached) that about 250 of the 520 THPs would be sediment

sensitive. Thus, at least 120 sediment sensitive THPs did not get reviewed by DMG in 1997. This substantiates the statistic in the above mentioned document that DMG attends about 28% of the THPs (this does not necessairly mean the the entire THP was reveiwed by DMG) for each year. This is not sufficient attendance to achieve fully mitigated THPs in areas with unstable soils, road construction, and steep slopes.

In the event of "Non-concurrence" or disagreement between the agencies, it is not always the case the dissenting agency receives appropriate response, with disclosed reasoning, to a not accepted recommendations. This is often a cause of friction and poorly mitigated THPs when review team agencies concerns are overlooked, dismissed, or ignored.

Compliance inspections are usually completed only by CDF. It is very rare that the review team agencies, other than CDF, have opportunity for field review of their mitigations. And, for that matter it is not often the case that the review team agencies, other than CDF, have opportunity to see if their recommendations are part of the THP as written and intended. There is not sufficient staffing for complete compliance inspection. This is why compliance inspection by the responsible RPF is a good idea and necessary.

895.1 Definitions (with general discussion and arguments added)

Road Abandonment - Erosion Control - Maintenance

Under definitions and in the FPRs (923.8, 943.8, 963.8 Planned Abandonment of Roads, Watercourse Crossings, and Landings) the subject of road abandonment, erosion control related to such abandonment (including culvert sizing and appropriate installation), and erosion potential from road construction and use during wet weather conditions - definitions and rules (including implementation, and implementation evaluation review, procedures related to rules) to not provide for adequate assessment of conditions and implementation of practices to protect the beneficial uses of water. Also absent from the rule is provision for maintenance over time. The failure to provide for monitoring and maintenance of erosion control facilities for longer than a period of one year creates a situation where evaluation of sediment sources and correction of sources fall to the responsibility of no one. Thus, failures go uncorrected. On rivers that have TMDLs scheduled, the TMDL may take care of part of the problem. Of course the Resources Agency (and CDF's) on again - off again (mostly off again) support of TMDLs makes the success of such process questionable. Thus, this should be taken care of with rules changes.

Canopy

The FPRs (14 CCR 916.5 [936.5, 956.3](e), items "G", "H", and "I"), and implementation procedures (the THP format, and review process) do not provide adequate discussion, analysis, and scientific documentation to insure the appropriate level of near stream canopy protection to provide for bank stability, LWD recruitment, impacts from solar radiation and changes to microclimate for Class I, II and III watercourses.

The report alluded to ("monitored by CDF on completed harvest operations" - 1987, state that 82.6% average canopy was reported to remain on THPs audited. This report was not peer reviewed. Subsequent review of this report shows that a very few, selected, THPs were audited using ocular estimation. The retention standards written into the THPs audited were the standard rules - thus the higher levels of retention sought were (are) not enforceable. Also, retention conditions were not mentioned in Class II and III watercourses - all relevant to potential down stream impacts. In the Garcia River (and many other rivers listed as temperature and sediment impaired) an audit of riparian conditions would show very poor existing riparian conditions (in areas of active, just completed, and not operated on in several years). The standard retention criteria in the FPRs just does take into consideration retention standards needed for the protection of the beneficial uses of water or the protection of habitat values needed by fish and wildlife. Until more appropriate retention standards are written into the rules it will be next to impossible to make progress in reestablishing needed habitat values (see Late Succession Stands and WLPZ Widths and Protections - below).

Late Successional Stands - Protection

The FPRs (14 CCR 916.5 [936.5, 956.3] , 14 CCR 916.5 [936.5, 956.3]), and implementation procedures (the THP format, and review process) do not provide adequate discussion, analysis, and scientific documentation to insure the appropriate level of protection for Late Successional Stands (or stands exhibiting such functional characteristics). RPFs preparing THPs and infield THP review do a lousy job of identifying and protecting late successional stands. Stands exhibiting these characteristics are where the trees are that the resources owner wants to extract. Thus, protection of these characteristics is overlooked. There is no provision in the FPRs for developing areas (stands) for these functional characteristics. Only, when late successional characteristics are protected and developed, supported by FPRs modification, will there be opportunity to make progress in protecting the beneficial uses of water for characteristics that will support salmonids.

Items 1 through 6 on p. 13 of the Resources Agency Draft Response are only wishful thinking , or pure fiction, as far as the protection of late successional stands is concerned.

Cumulative Watershed Effects - Analysis

See statement above on CEQA and Adaptive Management. The FPRs state "No Actual Measurement is Intended". The FPRs do not require analysis of up or down stream effects, of repeated entry, over time. Monitoring (rarely is actual data presented in a THP) or accuracy of information presented in a THP is not questioned. Cumulative Effects analysis in THPs is a very bad joke.

Watercourse Crossings

Culvert sizing standards and methodology are not sufficient. Alternative to culverts, bridges and rocked rolling dips are not considered sufficiently. Culvert sizing using the rational method is not rational. Averaging rainfall for the prior 3 year period may yield runoff values that do not deal

with the 100, or 50 year event. Also, the use of rainfall statistics from areas that do not adequately reflect the appropriate hydrologic values is allowed (i.e. rain fall values for the Ukiah area are allowed to set standards for culvert sizing in areas near the coast - in this case the runoff values my be different by a factor of 2x). All culverts eventually blow out (Tom Spittler - DMG). The FPRs should reflect and acknowledge these factors by ensuring crossing design to accommodate the 100 year hydrologic event or better.

Watercourse crossing placement and design factors are not adequately dealt with by the FPRs.

Winter and Saturated Soil Conditions Operations

The FPRs fail to define or provide for adequate operating controls during wet periods. Added to this problem is that operations consistently occur during wet conditions where sediment and turbid water is delivered to watercourses. One a THP is undergoing operations there is great pressure to complete the operations and remove the logs as quickly as possible. Wet conditions are not likely to stop operations - unless the conditions are extreme. And, CDF is in no position to enforce these conditions.

14 CCR 923.6 [943.6, 963.6] Conduct of Operations on Roads and Landings is neither enforceable nor does is contain adequate control for wet weather operations. "Routine use and maintenance or roads and landings shall not take place when, due to general wet conditions, equipment cannot operate under its own power. Operations may take place when roads and landings are generally firm and easily passable or during hard frozen conditions. Isolated wet spots on these roads or landings shall be rocked or otherwise treated to permit passage. However, operations and maintenance shall not occur when sediment discharged from landings or roads will reach watercourses or lakes in amounts deleterious to the quality and beneficial uses of water. This section shall not be construed to prohibit activities undertaken to protect the road or to reduce erosion. The 'visible increase in turbidity' was added to the rules as a guide to the timber operator. It is best used in the early portion of storms and as the waters begin to recede. During these times an increase in turbidity can be seen and operations are to cease." The above quotes from the FPRs and the Resources Agency Response document indicate how unenforceable the language is. When does the LTO assess for turbidity? Who is there to assess for compliance?

4 CCR 923, 943, 963 (emphasis added) states "All logging roads and landings in the logging area shall be planned, located, constructed, reconstructed, used, and maintained in a manner which: is consistent with long-term enhancement and maintenance of the forest resource; best accommodates appropriate yarding systems, and economic feasibility; minimizes damage to soil resources and fish and wildlife habitat; and prevents degradation of the quality and beneficial uses of water." This allows CDF the latitude to request wet weather road use plans if a road or roads within a plan area is in a position that use during unseasonable rainfall periods could result in harmful amounts of sediment reaching anadromous fish (freshwater shrimp, red-legged frog, southern torrent salamander, etc.,) bearing waters. The above paragraph copied from the Resource Agency Draft Response (p. 24). It would be wonderful if the above paragraph described policy as actually implemented. Unfortunately this not the case.

WLPZ Widths and Protections

See Canopy (above). The FPRs do not assure protection of either appropriate canopy levels in Class I, II or III watercourses nor do they assure sufficient width.

14 CCR 916.4(b)(3) [936.4(b)(3), 956.4(b)(3)] should be adjusted to meet the following Specifications (or better):

Streams/Watercoures (Class I and Class II) exhibiting temperature loading injurious to salmonids (16.5 deg. C or above) populations should be not be subject to timber harvesting in appropriately designated WLPZ.

Class I Steams

A distance of 100' (minimum) is needed to accomplish filtration from sediment sources. Thus, this 100' buffer should be the minimum filtration buffer for any watercourse that can deliver sediment to streams. Class I WLPZ should be slope dependent: 100' on slopes <30%, 150' on slopes 30-50%, and 200' on slopes > 50%. In the case of existing unstable inner gorge areas, measurement of WLPZ width to commence at the outside edge of the inner gorge area. It should be remembered that coho are a late seral dependent species and management objectives should approach late seral conditions in controlled areas = WLPZ

Land management activity related to roads, landings, and stream crossings in the riparian (WLPZ) are shall conform to criteria set forth under Roads and Landings (above).

The following policy objective and criteria applies to all Riparian Implementation matrices and should be a Desired Future Condition:

> Sediment source filtration characteristic, stream bank stability characteristics, LWD recruitment potential, as well as other near stream habitat (target) parameters, are dependent on integrity of the near stream riparian zone. The near stream (WLPZ) is to be managed for "Late Seral" characteristics. In Class I near stream zones the overstory and understory cover should approach 100% (by spherical densiometer). There should be a good mix of conifers and understory hardwoods to provide shade, leaf litter, filtration, LWD recruitment potential, bank stability and other elements provided by good near stream habitat conditions.

Other Policy Considerations for Class I WLPZ:

> No timber harvest or activity should be allowed in the WLPZ unless late seral characteristics are extant: i.e. For Class I - 85% to 100% overstory cover, on each side of stream bank, provided by a minimum of 6 trees per or 100' of stream bank (5 to be conifers) over 30" DBH, 50% greater than 24" DBH (at least 50% conifers, and 30% trees in the 16" to 14" DBH class (at least 50% conifers), largest trees to be within 50' of stream, and a minimum basal area to be maintained of 250 sq. ft DBH per acre.

WLPZ reduction for cable yarding, and other reasons, in areas sensitive to sediment production and other potential factors related to desired instream conditions are inappropriate should not be permitted.

All WLPZ areas and crossings are to be flagged and trees intended for harvest to be marked prior to PHI.

These management values apply to other land use activity such as farming, grazing and gravel mining.

Instream and near stream extraction of down LWD should not be permitted.

WLPZ operations and hauling in wet weather should not be permitted.
Areas of disturbed soil larger than 100' sq. shall be seeded or mulched.

Reduction of WLPZ facilities - roads, skid trails, and landings - should be part of the ongoing assessment/prioritization process (see Roads and Landings above). Prioritize potential sources by degree of potential contribution (see above). Set schedule for putting such facilities to bed or for stabilization. Link with rehabilitation activities and THP assessment and mitigation process. Maximum time period for dealing with critical sites = 10 years.

Weatherization and competent rocking of all haul roads in WLPZs to be used. No use without completion of this task.

Class II Steams

A distance of 100' (minimum) is needed to accomplish filtration from sediment sources. Thus, this 100' buffer should be the minimum filtration buffer for any watercourse that can deliver sediment to streams. Class II WLPZ should be slope dependent: 100' on slopes <30%, 125' on slopes 30-50%, and 150' on slopes > 50%. It should be remembered that coho are a late seral dependent species and management objectives should approach late seral conditions in controlled areas = WLPZ

Land management activity related to roads, landings, and stream crossings in the riparian (WLPZ) are shall conform to criteria set forth under Roads and Landings (above).

The following policy objective and criteria applies to all Riparian Implementation matrices and should be a Desired Future Condition:

Sediment source filtration characteristic, stream bank stability characteristics, LWD recruitment potential, as well as other near stream habitat (target) parameters, are dependent on integrity of the near stream riparian zone. The near stream (WLPZ) is to be managed for "Late Seral" characteristics. In Class II near stream zones (WLPZ) the overstory and understory cover should be 80% (by spherical densiometer). There should be a good mix of conifers and understory hardwoods to provide shade, leaf litter,

filtration, LWD recruitment potential, bank stability and other elements provided by good near stream habitat conditions.

Other Policy Considerations for Class II WLPZ:

No timber harvest or activity should be allowed in the WLPZ unless late seral characteristics are extant: i.e. For Class II - 75% overstory cover, 50% of which is to be conifer, on each side of stream bank.

All WLPZ areas and crossings are to be flagged and trees intended for harvest to be marked prior to PHI.

WLPZ reduction for cable yarding should not be permitted.

All WLPZ areas and crossings are to be flagged and trees intended for harvest to be marked prior to PHI.
These management values apply to other land use activity such as farming, grazing and gravel mining.

Instream and near stream extraction of down LWD should not be permitted.

WLPZ operations and hauling in wet weather should not be permitted.

Areas of disturbed soil larger than 100' sq. shall be seeded or mulched.

Reduction of WLPZ facilities - roads, skid trails, and landings - should be part of the ongoing assessment/prioritization process (see Roads and Landings above). Prioritize potential sources by degree of potential contribution (see above). Set schedule for putting such facilities to bed or for stabilization. Link with rehabilitation activities and THP assessment and mitigation process. Maximum time period for dealing with critical sites = 10 years.

Weatherization and competent rocking of all haul roads in WLPZs to be used. No use without completion of this task.

Class III Streams

Class III watercourses should have a 50' EEZ on slopes > 30% and a 100' EEZ on slopes > 30% with retention of at least 60% of the overstory and understory.

EEZ boundaries and crossings are to be flagged and trees intended for harvest to be marked prior to PHI.

Class III streams shall be assessed for steep, unstable headwater areas that have high hazard for mass wasting . In such cases an exclusion buffer of one sight potential tree height or the edge of the inner gorge shall be created.

Channel Conditions - Riparian Implementation

For near steam sediment source filtration, bank stability, LWD recruitment, food source recruitment, temperature control development and maintenance of near stream (WLPZ) management for Late Seral conditions is desired and critical (see above).

Documentation and monitoring of instream habitat and morphology related trends: stream bank stability, residual pool volume, particle size distribution, % embeddedness, improvement in spawning area reaches, pool riffle ratio, crossection trends by fixed point elevation measurements, instream LWD, near stream buffer recruitment and late seral management, substrate particle size distribution analysis by McNeil, pool frequency - depth - volume - and limitation by sediment filling, as well as ocular estimation of other stream parameters will provide tools for assessment over time. Instream stored material and channel conditions cannot really be considered independently as the changes of relationships are interdependent. In fact this whole matrix is full of interdependent relationships (and keeping tabs on all of this is driving me crazy).

The entire strategy for reaching desired conditions is based on realizing desired near stream late seral habitat in the stream zone (see Interim Riparian implementation - late seral) and instituting appropriate erosion control inventory and implementation on roads, stream crossings, and upslope sediment sources(see Coho Considerations, CDF pp. 26 -38). Late seral component standards are already defined, readily attainable, and quite easily measurable.

898 Feasibility Alternatives

Deficiencies in the consideration of Cumulative Impacts (discussed above), assessment is done for project impacts only, do not lead to appropriate consideration of project alternatives. No consideration is given to whether existing watershed conditions are significantly impacted or past cumulative impacts have occurred. In some cases THPs acknowledge continuing impacts. But, that does not necessarily lead to appropriate consideration of alternatives. It is often (almost always) the case that project alternatives receive cursory review and consideration. Almost every THP has a boiler plate review analysis section. However, it is also true that mitigation's beyond the standard rules are part of most THPs. The analysis to show that the mitigations are sufficient to reduce potential impacts to a level of insignificance is nonexistent. Monitoring of trends, for specific instream conditions, is also almost nonexistent thus making determinations and the sought after "adaptive management" goal impossible to obtain. You could pick up any THP, after approval, and find many places where better mitigations, practices, and alternatives could have been put in place to make the plan significantly less damaging.

912.5 Procedure for Estimating Surface Soil Erosion Hazard Rating

The relationship of proposed practices with soil types, geomorphic instability, and propensity for erosion and delivery to a watercourse is complicated and does not necessarily receive adequate review in the approval process for a THP. Hydrologic factors are not based on local accurate readings. RPFs and CDF personnel are not trained adequately in the identification of characteristics that indicate instability. Factors like interception of subsurface water flow by roads and skid trails, and related impacts, are also beyond the ability of RPFs and CDF personnel to

deal with. EHR calculations do not deal with the above (2) mentioned factors, nor do they deal with stored sediments in Class III watercourses which are likely to be mobilized during intense rainfall events. These are just some of the loopholes or flaws in the EHR rating system. The erodibilty factor of specific soil types has been grossly understated by the current EHR rating system.

It is often the case that "other" erosion control devices be installed to deal with specific factors - beyond the EHR rating system. This is all subjective and subject to misinterpretation, due to lack of training and other factors, leading to the failure to protect the beneficial uses of water.

CDF hydrologists still insist that silvicultural applications and attendant activity (i.e., yarding, road and skid trial construction), including other factors such as average slope and soil conditions, do not effect flow and runoff regimes (including lag to peak flow). The THP review process does not adequately take into consideration such factors.

912.9, 932.9, 952.9 Cumulative Impacts Assessment Checklist

See Adaptive Management (above) - plus statements below.

There never will be any appropriate or accurate CWE assessment or analysis without the measurement of specific parameters over time - for trends determinations (see specific documents by Brad Valentine and Coho Considerations (also by Valentine).

The Resources Agency puts great emphasis on the Review Team approach, with participating, agencies. The problem is that the funding is not there to provide for attendance in the THP review process by DMG, NCRWQCB, and CDFG (see attached declaration by Alan Levine).

Even with the (stated) review of past projects (in the WAA, or on the same ground) the review is often not thorough - often with omissions of past impacts and inaccuracies, including inappropriate classification of stream (previously classified properly in past projects). The RPF may use a large volume of information (as stated by the Resources Agency - p.31), but if he or she does not know how to use or interpret the information the exercise is not useful.

Even when the answer to the following questions is YES " (2) Are there any continuing, significant adverse impacts from past land use activities that may add to the impacts of the proposed project? Yes ___ No **YES** If the answer is yes, identify the activities and affected resource subject(s). (3) Will the proposed project, as presented, in combination with past, present, and reasonably foreseeable probable future projects identified in items (1) and (2) above, have a reasonable potential to cause or add to significant cumulative impacts in any of the following resource subjects?"; the level of analysis still (you would think that a yes answer would initiate higher levels of analysis and mitigations) fall far below thresholds that would be considered appropriate for good decision making.

914.2, 934.2, 954.2 Tractor Operations

Tractor operations invariably (with a high rate of frequency on each THP, and/or on a great preponderance of THPs - see attached declaration) take place on conditions that are supposed to be limited and protected (from such operations - or mitigated to insignificance). These operations on erodible and unstable soils cause disturbance that will lead to increased sediment inputs and turbidity. Justifications for exceptions to the rules are routinely accepted - "as the least damaging approach" rather than "fully mitigated" seems to be the guiding principle (However, not a principle that will protect beneficial uses).

In THPs and the THP review process it is not apparent that mass wasting, erosion propensity, is a factor in rule exceptions determination. This leads to the situation described above where erosion potential is exacerbated rather than fully mitigated and fish and wildlife values are not adequately protected. Failure of the multi-disciplinary team members to participate (DMG, NCRWQCB, and CDF) further adds to the problem of inadequate mitigations being imposed.

Article 6 Water Course and Lake Protection

See Canopy and WLPZ Width and Protections - above.

Water course classification is a big problem. Missclassified watercourses (this happens frequently - with the missclassification falling always in the direction of less protection) leads to inadequate protection, resource degradation, and failure to specify appropriate mitigations.

The Resource Agency Response: " It is unclear what NMFS defines as 'properly functioning condition'. 14 CCR 916.4(b) is used to determine the biological and habitat needs of fish species. Technical Rule Addendum #2 also provides a useful list of factors to consider for all wildlife species under the heading of 'Biological Resources' "; indicates that there is a general lack of understanding on the part of the State (CDF and the Resources Agency) on what are properly functioning conditions and what it might take to protect, restore an enhance properly functioning conditions. The efficacy of Technical Rule Addendum #2 is discussed - above.

The list of Biological Resources (p. 39 - 41) is comprehensive, but lacking in definitions of measurable criteria for properly functioning and desired conditions. The relationship with the FPRs, with intended administration of listed biologic values and resources, and the application of the FPRs (including CWE analysis, rules application, consideration of alternatives, mitigation application and effective evaluation) is nonexistent. There are no measurable defined values and no effective methodology to get from the list of biologic values to a implementation process that assures protection and enhancement.

916.3, 936.3, 956.3 General Limitations Near Watercourses, Lakes, Marshes, Meadows and Other Wet Areas

The FPRs allow trees to be removed from wet areas. These wet areas may be susceptible to mass wasting. The rules do not provide for retaining trees that will provide root strength to stabilize

these wet areas. Felling across stream channels may damage vegetation and destabilize streambanks. The rules require trees to be felled away from watercourses, but allow exemptions. The justification for felling across watercourses is not described. The number of trees retained after harvesting to provide for large woody debris recruitment is inadequate to provide properly functioning aquatic habitat (see WLPZ Widths and Protections - above). Depending on site specific conditions, the diameter and size of the trees required to be retained after harvesting may also be inadequate. The rules do not require the recruitment trees to be marked. There is no restriction on removing those trees the next entry and retaining two other trees that meet the size requirement.

The Resources Agency response to these concerns is incomplete and inadequate. The response "Definitely two trees per acre is inadequate. However, auditing of the implementation of the FPRs on THPs for large woody debris by the CDF through sampling done by the CDF field audit inspectors and CDF harvest inspectors resulted in the following observations." indicates the rules are not sufficient. The referred to audit was limited to a few THP (discussed above), observed trees were not retained in a enforceable manner (written into the THP), and/or any observed trees were not marked for permanent retention (so that retention is guaranteed as part of recruitment loading). The standard being applied by CDF "five to ten large conifers be left per acre within 50 feet of the watercourse in watersheds containing coho and other anadromous fish" do not meet LWD (and overstory) retention standards for coho or the stated goal of protection, enhancement, and restoration.

916.4, 936.4, 956.4 Watercourse and Lake Protection

See Canopy and WLPZ Width and Protections - above

The use of the watercourse or lake transition line or top of bank as the point to begin measuring the WLPZ does not factor in side channels, flood plain, or potential channel migration. The protective buffering value of the WLPZ may be lost if the channel migrates further than the width of the WLPZ. The rule requires retaining 75% undisturbed surface cover, this allows a full 25% left bare, adjusted through agreement between the RPF and the Director. This level of disturbance is too high. The percent overstory (25%) conifers to be retained is too low and size class objectives are missing - this does not provide for the protection of restoration of attributes needed for properly functioning near stream conditions and LWD recruitment. The rule does not describe the criteria that are used to determine whether the percent undisturbed area should be increased or decreased. WLPZ buffers are not required for Class III watercourses. This limits the level of protection that may be provided to Class III watercourses, and by association, salmonid habitat downstream. Defining an ELZ does not necessarily minimize the impact from heavy equipment. The rule does not encourage minimizing the amount of heavy equipment used within the ELZ. The rules prohibit heavy equipment use within WLPZs, but exemptions to heavy equipment use within the WLPZ are common and easily obtained.

Analysis of near stream and instream condition in THPs is not usually sufficient in detail for appropriate decision making. Also, there is a demonstrated lack of understanding of what constitutes desired or properly functioning conditions on the part of RPFs and the State (CDF

and the Resources Agency). With out appropriate understanding and appropriate measurable goals as part of management criteria proper implementation of the FPRs is impossible.

916.5, 936.5, 956.5 Procedure for Determining Watercourse and Lake Protection Zone (WLPZ) Widths and Protective Measures

See: Canopy and WLPZ Width and Protections (including 916.4, 936.4, 956.4 Watercourse and Lake Protection) - above

In watersheds where shade is the limiting factor for stream temperature, the canopy retention standards (50% overstory and 50% understory are insufficient to maintain optimum water temperatures required for salmonids. The rule only requires retaining 25% of overstory conifers. Conifers provide better LWD than hardwoods. The rules does not define "total canopy". This could be interpreted as a percentage of the existing canopy structure, which may be much less than the stand's attainable canopy.

The rule requires the post-harvest stand structure to be similar to that found before harvest; this ignores the fact that the pre-harvest stand size distribution may not be desirable in terms of providing the riparian values necessary to maintain property functioning aquatic habitat.
The rules can be altered site specifically. There is no criteria or analysis factors provided to describe the conditions under which alternative prescriptions would be acceptable.
The rule allows broadcast burning in Class III watercourses. The rule does not place any limits on taking overstory trees in Class III WLPZ.

The Resources Agency responds with claims of canopy extant in excess of 80%. These claims are not supportable by evidence. Then they go on to claim the target retention of 75% to 85% on THPs where coho are present. These targets, overstory retention standards, are not currently being written into THPs. Class II and III protections are being overlooked. The target of 25% existing overstory being conifers is not sufficient for protection and enhancement of properly functioning conditions.

The statement (p. 51) that "Temperature is less of an issue with coho on the coast because of coastal influence" is scientifically and empirically incorrect. With coho we are dealing with coastal streams - many of which have severe temperature problems as limiting factors. The indication that low overhanging canopy is of greater value than overstory is misleading and a misapplication of the rules.

TABLE I - WLPZ Widths - Protections - see above discussion - and additional discussion below.

The methodology used to insure correct designation based on the above criteria is not included in the rule. Incorrect designations may occur depending on the time of year for the survey, historic records and the potential for blockages to be removed that result in the repopulation of upstream habitats by anadromous fish. Incorrect designations may lead to inadequate protection of anadromous salmonid habitat. For the most part, the buffers for all stream classes are not wide

enough to provide the riparian values necessary to achieve and maintain properly functioning condition. The protective measures prescribed for each watercourse class may not provide adequate shade, structure, and woody debris to maintain properly functioning aquatic habitat. The rule allows the buffer to be decreased for cable yarding operations but does not differentiate between partial and full suspension.

Resource Agency Response "**It is possible that watercourses could be incorrectly classified.** To minimize this potential CDF has printed a guide to watercourse classification (CDF, 83), issued policy on the classification of class II watercourses (1997), and finally, watercourse classification is a common issue on pre-harvest evaluations". The book referenced in the proceeding statement is not in circulation or available to RPFs and other personnel in the THP review process. Not, that it would do much good if it were available as it does not give adequate discussion of characteristics of properly functions conditions or their attributes, or conditions relative to proper stream classification. Since the Resources Agency does not have a clear idea of what approximate properly functioning conditions, and makes no measurements of criteria relating to same in CWE analysis, their statement "Unless there is substantial evidence from actual field measurements that the buffer widths are not providing adequate protection, California's buffers provide adequate protection for salmonids and maintain a habitat that protects their life cycle process. Since the coho, listing buffers are, on the average, larger than the rule minimums. In addition, the Coho Considerations document requests that RPFs consider the impact that silviculture activities outside the buffer have on the buffer and limit activities so that the full benefits to the fish are maintained and that habitat is maintained in a fully functioning condition" must be taken for what it is worth - nothing (see WLPZ and resources discussion above).

923.1, 943.1, 963.1 Planning for Roads and Landings

See Road Abandonment - Erosion Control - Maintenance - Erosion Hazard Rating - CWE Analysis - Adaptive Management - above

The rule does not encourage landowners to minimize the density of roading in watersheds, limit the total amount of roads within watersheds, or develop a long-term transportation plan. The rule does encourage or require alternatives to building new roads, such as longer yarding capacity. There is no mechanism for identification of unstable areas. There is no true limitation or prohibition on locating roads and landings on unstable areas, including 0-order swales or headwalls where water convergence occurs. The rule does not limit or prohibit placing roads and landings on inner gorges and steep slopes or anywhere that concentrates water or delivers sediment to channels that network with stream courses. There is no assessment of the sediment input and delivery from roads – no way to learn from past experience. There is no limitation on new road location and construction where sediment-related degradation has already occurred in watercourses. There is no accountability for roads that deliver sediment to watercourses or that block fish passage. There is no restriction of limitation to hauling on roads where there is any risk of pumping fines that have the potential to deliver to watercourses.

Resources Agency Response:"**While roads are not prohibited on unstable areas, in inner gorges, steep slopes, or where water concentrates or delivers sediment to channels that network with stream courses, roads for such areas must be justified** and site specific measures are included to minimize slope instability due to the construction activities. The CDF evaluates such conditions during the preharvest inspection and requests a geologist (DMG) also be present at that field meeting"; indicates exceptions to rules limitation allow for failure and sedimentation potential. This potential for erosions from failures associated with such activity on unstable and erodible conditions (including roads used in sensitive riparian areas) is not necessarily fully considered, evaluated, and appropriately mitigated (to a level of insignificance) in the THP review process. Lack of training and available personnel from review team agencies also add to the problem of incomplete consideration and lack of review.

Though available (*Handbook for Forest and Ranch Roads*, Hagans and Weaver , there is no roads assessment and construction manual distributed to personnel responsible for decision making in this realm of the THP process.

Operations occur during saturated soil conditions all the time. Control prohibiting such activity are insufficient and unenforceable.

923.2, 943.2, 963.2 Road Construction

See - Planing for Roads - Road Abandonment - Erosion Control - Maintenance - Erosion Hazard Rating - CWE Analysis - Adaptive Management - above

The rules do not encourage or insure adherence to state-of-the-science construction techniques for minimizing the impacts to aquatic resources, such as constructing roads that conform to topography, using full bench construction on steep slopes, and using vegetative or mechanical stabilization techniques to prevent cut and fill slope erosion from entering stream courses.

There is no requirement against concentrating runoff. Perched materials can be left in places where they may reach the watercourse. The rule for fill around drainage facilities is limited. The rule does not require minimizing fills used in water crossings, or require armoring and rolling dips to prevent diversion potential. The rules allow construction to occur on isolated wet areas. Such areas include springs and seeps that are potentially unstable or could be destabilized by construction activity. Road construction is permitted during critical times for fish populations and/or during periods when high rainfall is likely, thus increasing erosion potential. Critical times for fish populations can be considered any time after the first winter storms up to when juveniles emerge from the gravel. A factor related to bank incision for full bench construction, thus increasing cutbank instability and the likelihood of future failures is not considered by the rules. Road networks can affect hillside drainage; intercepting, diverting, and concentrating surface and subsurface flow, and increasing the drainage network of watersheds.

Exceptions to the FPRs are common and appropriate justifications for such exceptions lack full explanation or review by a multi-disciplinary review team. Often exception justification is based on the argument that approval of such proposed plans (exceptions) are justified by the use of the

"least damaging approach". This approval scenario does not require consideration of all possible project alternatives and the greatest potential mitigation - that are feasible and within reason. justifications using the "least damaging approach" argument are almost never rejected by CDF. Rationales, and thorough analysis for such justification (for potential impact - on water quality values) is almost never required by CDF for approval of such exceptions. Rarely are such exceptions denied.

Resources Agency Response "**While roads are not prohibited on unstable areas, in inner gorges, steep slopes, or where water concentrates or delivers sediment to channels that network with stream courses, roads for such areas must be justified** and site specific measures are included to minimize slope instability due to the construction activities. The CDF evaluates such conditions during the preharvest inspection and requests a geologist (DMG) also be present at that field meeting"; indicates exceptions to rules limitation allow for failure and sedimentation potential. This potential for erosions from failures associated with such activity on unstable and erodible conditions (including roads used in sensitive riparian areas) is not necessarily fully considered, evaluated, and appropriately mitigated (to a level of insignificance) in the THP review process. Lack of training and available personnel from review team agencies also add to the problem of incomplete consideration and lack of review.

Though available (*Handbook for Forest and Ranch Roads*, Hagans and Weaver , there is no roads assessment and construction manual distributed to personnel responsible for decision making in this realm of the THP process.

Operations occur during saturated soil conditions all the time. Control prohibiting such activity are insufficient and unenforceable.

923.3, 943.3, 963.3 Watercourse Crossings

There is no standardized methodology for ensuring that culverts will provide unrestricted passage of both juvenile and adult fish. There is not standardized methodology for determining culvert size necessary to meet or exceed the fifty-year flood level criterion. Culvert sizing standards and methodology are not sufficient. Alternative to culverts, bridges and rocked rolling dips are not considered sufficiently. Culvert sizing using the rational method is not rational. Averaging rainfall for the prior 3 year period may yield (inappropriate) runoff values that do not deal with the 100, or 50 year event. Also, the use of rainfall statists from areas that do not adequately reflect the appropriate hydrologic values is allowed (i.e. rain fall values for the Ukiah area are allowed to set standards for culvert sizing in areas near the coast - in this case the runoff values my be different by a factor of 2x). All culverts eventually blow out (Tom Spittler - DMG). The FPRs should reflect and acknowledge these factors by ensuring crossing design to accommodate the 100 year hydrologic event or better.

Watercourse crossing placement and design factors are not adequately dealt with by the FPRs. Armoring and rolling dips and other state of the art techniques to prevent diversion potential are not encouraged or required under the FPRs.

Stream crossings can change the channel bed, block sediment transport downstream, or alter the velocity of water. There is no requirement in the rules to avoid these situations. A 50-year flood flow design may not be adequate for roads with a long planned useful life. The rule does not require stream crossing designs to incorporate the anticipated road life and use or access the risk of flows exceeding flood design.

The FPRs do not require permanent watercourse crossings and approaches to be designed to anticipate failure or plugging, by minimizing diversion potential and reducing fill.

Resource Agency Response: "Culvert design is a part of road engineering that has been practiced for decades. There are several 'standard' methods for calculating culvert size necessary to meet or exceed the fifty-year flood level criterion. One commonly used method is called the 'Rational Formula'." This proceeding statement contradicted by findings that culverts are often under designed (T. Spittler - DMG). One of the reasons for under-design is discussed above.

"The Fish and Game Code (code section 1603) covers the concern that stream crossings can change the channel bed, block sediment transport downstream, or alter the velocity of water. There is no requirement in the rules to avoid these situations." This is precisely the problem there should be a requirement in the FPRs to avoid these situations. Fish and Game Code is not what we are discussing here. We are discussing the FPRs.

"The literature (Furniss et al. 1991) recommends the same drainage design as used in the Forest Practice Rules; "The following guidelines will help reduce adverse effects of roads on streams. ... Design drainage structures to accommodate peak streamflow based on at least a 50-year-interval flood..." In a natural system it is always possible that a culvert may fail. " Culverts designed to accommodate the 50 year event are necessarily under-designed - especially when inappropriate (the FPRs allow this) rainfall statistics are used.

923.4, 943.4, 963.4 Road Maintenance.

Also absent from the rule is sufficient provision for maintenance over time. The failure to provide for monitoring and maintenance of erosion control facilities for longer than a period of one year creates a situation where evaluation of sediment sources and correction of sources fall to the responsibility of no one. Thus, failures go uncorrected. Three year maintenance programs are rarely part of any THP. There is no accountability for road or landing failures after the end of the maintenance period.

On rivers that have TMDLs scheduled, the TMDL may take care of part of the problem. Of course the Resources Agency (and CDF's) on again - off again (mostly off again) support of TMDLs makes the success of such process questionable. Thus, this should be taken care of with rules changes.

There is no accountability for legacy roads, which are potentially major sources of sediment. The FPRs do not encourage analysis of the watershed's road network to identify unneeded roads (see CWEs - above) or encourage reduction of roaded area.

Drainage structures, especially waterbars, and trash racks need regular annual maintenance to properly function, prevent blockage, and provide adequate carrying capacity. Trash racks places immediately over culvert inlets can plug up with debris.

Blockages are allowed to create temporary water sources. The rules require blockages to be removed by November 15, but this may permit blocking movement of juvenile salmonids during the summer or early migratory adults that move into stream systems after the first significant rain event.

Removal of watercourse crossings and closure of temporary and seasonal roads are based upon calendar dates, not actual rainfall amounts. Drainage structure installation and removal can occur during critical times for salmonids. The FPRs have no requirement for water drafting to minimize impacts to aquatic resources.

The rules provide little guidance as to how to maintain roads, landings, and crossings in a manner that does not deliver sediments to streams (see reference to Hagens and Weaver roads manual - above). For example, there are no restrictions on sidecasting bladed material onto fill. The rules require that crossings must be maintained to prevent diversion of stream flow, but do not provide guidance as to how this is best accomplished. Waterbars are not sufficient to prevent diversion. Prescriptive maintenance does not require soil stabilization to be sufficient to prevent gully formation or overland surface erosion delivering fine sediments to stream.

Resources Agency Response: "The accountability for road and landing failures is made during the cumulative impact evaluation of subsequent THPs. If the failure is a large one and causing a problem, there are other state laws that can come into play to get correction and compliance such as the Porter Cologne Water Quality Act and the Fish and Game Code." This is great! Rather than, first require mitigated construction technique, then compliance inspections to limit potential for failure and correct problems; that are going to apply regulatory performance demands after the damage is done. This is exactly what happened in Freshwater, Jordan, and Bear Creek(s). CDF was warned of impending damage. It happened. Now they are sensitive watersheds - that will take 200 years to recover.

"Existing roads (legacy roads) if they are within the plan area and to be used for timber operations may require reconstruction to reduce existing sedimentation and the potential for future sedimentation, much like new road construction." What about legacy roads, that are eroding, and are not going to be used? Do the rules insist on correction or abandonment - no.

"Guidance as to how to maintain roads, landings, and crossings in a manner that does not deliver sediments to streams can be found in numerous scientific and practical publications." How do the FPRs induce state of the art application - or provide appropriate information?

"The rule requires that logging roads, landings, and associated drainage structures used in a timber operation shall be maintained in a manner which minimizes concentration of runoff, soil erosion, and slope instability, and which prevents degradation of the quality and beneficial uses of

water during timber operations and throughout the prescribed maintenance period." This statement does not account with the issue of maintenance after the close of operations.

923.5, 943.5, 963.5 Landing Construction

The rules require sidecast or fill material that has the potential to deliver sediment to watercourse be appropriately stabilized. The term, "stabilize," is not defined and does not consider the purpose of the "Stabilization". If surface erosion is the problem, using mulch, straw, or seeding may be appropriate. If mass movement is a potential problem, pull-back or excavation may be necessary.

The FPRs do not consider remediation of landings, both in WLPZ and on the hillslope, that are failing and may deliver sediment to the watercourse.

The rules do not prohibit construction of landings on steep, unstable slopes.
The rule does not adequately describe standards for constructing landing on steep slopes. For example, the rule does not require full bench construction on steep slopes. Particularly for slopes over 65% that are constructed within 100 ft of a WLPZ.

Resource Agency Response "**The rules do not prohibit construction of landings on steep slopes but do not encourage the practice either**. Any construction on unstable slopes would require considerable justification. Unstable areas are addressed in 14 CCR 914.2 [934.2, 954.2] Tractor Operations [All Districts], subsection (d); Heavy equipment shall not operate on unstable areas. If such areas are unavoidable the RPF shall develop specific measures to minimize the effect of operations on slope instability. These measures shall be explained and justified in the plan and must meet the requirements of 14 CCR 914 [934, 954]. The construction of landings would require the use of heavy equipment." Landing construction and reconstruction happens on steep (and unstable) slopes. Justifications for exceptions to the rule are easily accepted by CDF.

"Unstable areas are each unique, there are different soil types, different relationships to watercourses, and sizes that range from a few square feet to acres. A plan which shows landing construction on a large unstable area will usually trigger a field review by one of the Certified Engineering Geologists with the DMG, as part of the preharvest inspection." As shown above, DMG does not have the capacity to respond the preponderance of THPs with erosion problems.

923.6, 943.6, 963.6 Conduct of Operations on Roads and Landings

Hauling on roads, even rocked roads, in wet conditions will pump fines and increase the amount of sediment capable of entering into streams.

Resources Agency Response: "The rule states: 'Operations may take place when roads and landings are generally firm and easily passable or during hard frozen conditions.' **The rules do not encourage hauling when wet conditions are present**." Hauling occurs during wet and saturated conditions very frequently. "The FPRs do not encourage wet weather hauling". The application of

the FPRs is not successful in discouraging wet weather hauling. Definition and limitations on wet weather conditions can be improved.

923.8, 943.8, 963.8 Planned Abandonment of Roads, Watercourse Crossings, and Landings

Failures occurring on abandoned roads, watercourse crossings, and landings often occur years or decades after abandonment. The FPRs do not require occasional monitoring and/or maintenance of abandoned roads to assure that the stabilization measures and drainage structures withstand significant storm events. There is no requirement to fix stability and drainage problems should the abandoned road fail.

The FPRs do not encourage analysis of the watershed's road network to identify unneeded roads (see CWEs - above) or encourage reduction of roaded area. The FPRs also do not encourage abandonment of roads near or within WLPZs and on unstable slopes. Roads near or within WLPZs have the greatest potential to deliver fine sediments based on proximity to stream courses.

There is no requirement that the process of abandoning roads reestablish natural drainage patters on hillslopes and at streams. Inside ditches and culverts can reroute hillslope drainage, restrict or confine stream flow, and present slope stability hazards.

The rule does not define conditions where watercourse crossings cannot be removed. By only excavating fill to provide an overflow channel, the crossing is set up for failure and potential debris torrents.

Resource Agency Response: "**It is true that failures may occur on abandoned roads**, watercourse crossings and landings at some later date. How often is debatable. However, the incidence of such failures is expected to be less than if these structures were not abandoned according to the rules. As stated in the rule, cut and fill slopes are to be stabilized, water is to be dispersed, watercourse crossings are to be removed or provided an overflow channel, and regeneration is to be promoted." This statement does not account for the need for monitoring in abandoned areas and the need to correct failures.

"While the FPRs do not require monitoring or maintenance of abandoned roads after the prescribed maintenance period for the harvest plan has ended, the state does have other avenues to 'fix stability and drainage problems should the abandoned road fail'." There are failures on abandoned roads on forested lands. This responsibility resides in the application of the Forest Practices Rules. It does not reside with any other agency.

"provide feasible off-site mitigation measures that can be incorporated in the plan to restore or enhance previously impacted resource areas or other environmental enhancements that will result in demonstrable net environmental benefits within the planning watershed. These measures may include, but are not limited to, watercourse restoration, soil stabilization, road surface stabilization, road outsloping, road abandonment, road reconstruction, enhancement of wildlife habitats and vegetation management. To qualify for an exemption the plan submitter is not required to demonstrate that other feasible options are not available." How do the FPRs relate to

this statement made by the Resources Agency. Application of such mitigatory practice is not, and has not, been supported by the application of the Forest Practices Rules.

ATTACHED DOCUMENTS

Declaration by Alan Levine, 1997, Review of 683 THPs on 303 (d) listed rivers, 1988 to 1995, for review team attendance and propensity to deliver sediment.

Amended Memorandum of Points And Authorities In Support Of Summary Judgment, Joseph J. Brecher, 1997, arguments on the failure of the Forest Practice Rules to protect the beneficial uses of water.

Implementation Proposal (Garcia River TMDL), Alan Levine, 1997, Desired Management and Instream Conditions for Protection and Recovery of Salmonids.

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Assessing the Effectiveness of California's Forest practice Rules in Protecting Water Quality, prepared by the Monitoring Study Group (MSG) of the State Board of Forestry with assistance form William Kier and Associates, 1993

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October 28, 1998

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Subject: Regional Water Board to Remove Implementation Strategy from future North Coast Rivers Pollution Reduction Plans (TMDLs)

In a meeting last week the North Coast Regional Water Quality Control Board gave notice that Implementation Strategy would not be part of future Total Maximum Daily Load programs adopted by the board for dealing with pollutant loads on North Coast rivers listed as impaired by the EPA. The Regional Board made this decision in opposition to complaint and comment from the EPA, the State Water Resources Control Board, North Coast Regional Board Staff, and concerned environmentalists.

Implementation Strategy has been vehemently opposed by the timber and agricultural interests who have repeatedly stated that the imposition of such policy was too costly or too difficult. The timber and agricultural interests would much rather produce voluntary plans for pollutant reduction where such plans would be private (not shared with agencies or the public at large) and totally under their own control.

The Regional Board has cited the expense of developing such Implementation strategy as the basis for their decision to curtail this part of the TMDL programs adopted by the State.

It is entirely possible that the EPA is complicit in this problem. The EPA seems to be concerned (and appropriately so) about meeting consent decree deadlines. However, in recognizing this concern and the need to complete TMDLs support for inclusion of Implementation Strategy should not be forsaken. I am worried that the EPA is willing to accept baseline TMDLs with just a waste load allocation and without implementation and monitoring policy. There seems to be a wrangle over who will pay for what, responsibility for monetary support for different tasks, and what are the minimum necessities of the completed TMDLs.

It appears that Board staff, the Board, and the EPA are all under significant stress about all of this - and cooperation is on the wane. The result could be lousy and ineffective TMDLs. Ineffective and unenforceable TMDL documents are not what current litigation to enforce this policy was directed at. Problems on our ailing rivers will never be addressed if effective policy is not put in place.

TMDLs have tremendous potential to move things in the right direction. Failures to support the process can threaten this potential for progress.

The first TMDL on the Garcia River, with Implementation Strategy in place, is likely to be retained intact. The TMDL and Implementation Strategy was put in place over objections from timber and agricultural interests. While some landowners are reticent others are finding that the TMDL program easily implemented and effective. Another TMDL on Redwood Creek is to be heard foradoption on December 10, 1998 in Eureka. This TMDL may have Implementation Strategy as the Regional Board has already developed one.

The Clean Water Act Requires the state water quality standards to contain an anti degradation policy that is consistent with the federal policy. This includes the listing of impaired water bodies and developing plans (with reasonable assurance of success) for limiting pollutants. The state can be told to accomplish specific objectives, but not how to accomplish these tasks (see water law discussion below).

State water law says an implementation plan must contain a description of the nature of specific actions that are needed to achieve the water quality objectives, a time schedule and a plan for monitoring compliance - State Water Code Section 13242.

The adoption of pollution reduction objectives by the Regional Board, with no clear path on how to achieve these reductions (implementation plans) is clearly a exercise in futility. Failure to include Implementation Strategy as part of TMDLs will render them useless paper chases. The Regional Boards policy seems equally unjustifiable as the current Implementation Strategy has been shown to be user friendly, flexible, and cost effective. Claims by agricultural interests of useless and inappropriate burden imposed by such policy have not been justified.

EPA regulations (40CFR section 130) state that the TMDL development process should be described in the State's continuing planning process under section 303(e) of the Clean Water Act. In addition, the regulations require EPA-approved TMDLs to be incorporated in to a State's Water Quality management Plan. Thus, TMDLs should be integrated with other State Water quality management activities.

Ultimately, TMDLs are designed to assure that waterbodies meet water quality standards. Water quality standards have three components including designated beneficial uses,, narrative and/or numeric criteria, and antidegradation policy. TMDLs require that a waterbody meet it's designated use. The basis for achievement of a designated use (i.e. fishing or swimming) is the determination and allocation or distribution and implementation of an acceptable load. Simply stated, to develop a TMDL one must first determine what is causing the problems, evaluate how much loading is acceptable, determine the loads form each source, and distribute the allowable load between the various sources and the margin of safety.

The EPA is also responsible for assessment of the water quality programs and certification of same as "Best Management Practices. Certification has not been obtained by the State of California.

Impaired Listings for California Salmon Streams

The listing of nearly all short run salmonid producing streams in California as impaired by pollutants (sediment, temperature, nutrients, and dissolved oxygen - EPA 305 (b) report, 303 (d) list) is testimony to the State's failure in the control of waste discharge from timber harvesting, agricultural and industrial practices that contribute such pollutants, in deleterious quantities, to fish bearing streams.

All of these streams will be subject to Total Maximum Daily Load - non-point - pollution control programs to be administered by the Regional Board (North Coast) and the EPA.

Clearly the State antidegradation policy, and implementation of same, in Basin Plan(s), the Forest Practice Act (and Forest Practice Rules), and the State of California Fish and Game Code is not effective in protecting beneficial uses.

It is apparent that the Basin Plan waste discharge limitations have not been being enforced and/or the Basin Plan limitations against discharge are insufficient. Thus we have water quality degradation leading to fishery collapse.

Federal Role

The Clean Water Act also requires the state to prepare water quality standards and submit them to the EPA. The Clean Water Act require that the state water quality standards specify "appropriate water uses to be achieved and protected." These uses are called "designated uses" under the Clean Water Act. When classifying state waters for the purpose of designating uses, the state must consider " the use and value of water for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes - including navigation. Water quality standards are required to contain not only designated uses but also "water quality criteria" bases upon such uses. Criteria are defined by regulations developed by the EPA as elements of water quality standards, expressed as "constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use." Criteria "must be bases on upon sound scientific rational and must contain sufficient parameters or constituents to protect the designated use."

The Clean Water Act Requires the state water quality standards to contain an anti degradation policy that is consistent with the federal policy. The federal requirements state 1) all existing instream uses must be maintained and protected, 2) water bodies that are sufficient quality to support the propagation of fish, shell fish, wildlife and recreation cannot be degraded below the level necessary to support those uses, 3) high quality waters that are outstanding natural resource waters must be maintained and protected.

Section 303 (d) requires states...to identify waters for which technology-based effluent limitations are not stringent enough to achieve applicable standards. TMDLs are to be developed for listed waters. Each State .... is required to identify "water quality limited segments" for which Federal technology based controls or local effluent limitations or other pollution control requirements (e.g., best management practices) required by the State or federal authority are not stringent enough to achieve water quality standards, including waters not meeting standards due to thermal discharges (40 CFR section 130.7 (b). Each State must consider all existing and readily available data in assembling the Section 303 (d) list (40 CFR section 130.7). At a minimum this should include: Waters identified as impaired, threatened, or not meeting designated uses by other lists required by the Clean Water Act, such as Section 305 (b) report, and non-point source assessments, submitted to EPA under section 319 (this can
nclude information supplied by the public).

A TMDL reflects the total pollutant loading a waterbody may receive and still meet water quality standards. By statute (section 303(d)(1)(C)) and regulation (40 CFR section 130.7(c)(1), TMDLs are to be developed for all waters on the Section 303 (d) list. EPA's regulations at 40 CFR section 130.2(i) define a TMDL as the sum of "waste load allocations" plus load allocations (loads allotted to existing and future nonpoint sources, plus loads from natural background) plus a margin of safety to account for uncertainty.

STATE AND FEDERAL WATER LAW - BACKGROUND

State Water Resources Control Board has ultimate authority over state water quality policy - under the Porter-Cologne (Water Quality Control) Act. However, the Act also establishes 9 regional water quality boards to oversee water quality at more local levels. Each regional board has nine members. In the case of the North Coast Region the Board make up is quite conservative.

Regional Boards are responsible for the Water Quality Control Plan or Basin Plan for that region. The Basin Plan must include 3 components: 1) beneficial uses to be protected, 2) water quality objectives [each board shall establish such water quality objectives in water quality control plans as in its judgment will insure the reasonable protection of beneficial uses], 3) an implementation plan to meet the water quality objectives.

Statutory considerations in establishing water quality objectives:

- Past, present, and probable future beneficial uses of water
- Environmental characteristics of the hydrologic unit under consideration, including the quality of water available thereto.
- Water quality conditions that could reasonably be achieved through the coordinated control of all factors which effect water quality in the area
- Economic Considerations
- The need for developing housing in the region
- The need to develop and use recycled water

Basin Plan objectives and requirements must be submitted by the RegionalBoard to the State Board for Approval. This will be required of allindividual TMDLs on impaired listed water bodies (see below).

The implementation plan must contain a description of the nature of specific actions that are needed to achieve the water quality objectives, a timeschedule and a plan for monitoring compliance - Water Code section 13242.

Enforcement of the water quality requirements is a responsibility shared by the state and the regional boards. Both entities monitor discharges and surface water quality, and both have the authority to require monitoring by dischargers. The regional board is at the forefront of the enforcement process.

The State Board is responsible for the allocation of the State's water resources.

For the Water Quality Attainment Strategy to have any chance of success it is essential that an Implementation Plan where default rules are followed to achieve certain targets is in place. At any time a landowner may provide their own Site Specific Sediment Reduction Plan that provides guidelines and perceptions for activity that give reasonable assurance that targets will be achieved. Allowing the Water Quality Attainment Strategy to be adopted without such default rules or implementation policy would remove both the incentive for landowners do develop their own Site Specific Pollution Reduction Plan (SSSRP) and any assurance that the goals and targets, with the necessary margin of safety, of TMDL will ever be met. Absence of an appropriate implementation strategy precludes compliance with EPA TMDL requirements. In this case it would be most appropriate for the EPA to adopt appropriate Implementation Strategy into specific TMDLs that they are responsible for and/or where the Regional Board fails to adopt such policy

Other Connected Issues Deserving of Consideration:

Overturning of the MAA that takes responsibility for Water Quality mandates on Timber harvest operations away from the Regional Board and leaves CDF responsible for basin plan implementation. The EPA can be effective in decertifying such MAA. The other responsible agencies reviewing Timber Harvest Plans must be put on more equal footing.

In all the current confusion the Regional Board is lowering the priority of Timber Harvest (and Industrial) water quality management issues to their second tier of priority. This can put forestry and industrial issues more on the back burner - where they will also get less funding.

The EPA could consider providing their own implementation plans for the promulgated TMDLs - to later be replaced by acceptable state promulgated implementation plans.

Sincerely,

See Water Law Background - Below

TO: Richard Wilson

FROM: Ross Johnson

Date of this memo 11 or 12 of 1994

SUBJECT: MSP Calculations

The department has received one large landowner's MSP (growth and inventory data) calculations for Option a under the new board rules. The calculations are for a 70,000 acre ownership. The department has also received preliminary data from a portion of another large landowner's holdings.

Both point out the fact that the department will be in the position of trying to prove that the land owner cannot grow as much as they say they can.

CHALLENGES THE DEPARTMENT FACES

TIME

Option a information is handed in with a thp. The landowner expects us to review within the time frames of thp review. When the information is on an entire ownership such as the 70,000 acres it is unreasonable to expect us to complete or review in less than 45 days. We have put three thps on hold until we have the time to check the growth figures on the ground. Office review does not take that much time, but it will not always tell you what you need to know.

DATA

The board and the department did not expect that the data on the first few Option a MSP calculations would be very good. We have not been disappointed. We are going to have to check this information out on the ground. This will take time. We will probably need more people with the expertise of Tim Robards to keep up with the workload that will be coming in. We will be expecting the data to get better overtime. We may have to stipulate in the plan that the present information will only suffice for six months or so. We would then expect the landowner to do more growth and inventory measurements before the next thp came in. If the landowner doesn't agree we may have to take the issue back to the board.

PROVING MSP

It appears that the board was targeting stands to have at least 8 18 inch trees per acre left after harvesting. However, the board left open the possibility that the landowner could prove he was meeting MSP under option a and not meet the eight 18 inch criteria. The department is going to have to figure out when the landowner meets such a requirement. The challenge becomes real when the landowner states he can grow so much, we agree with him but it is less than he could grow if eight 18s were left.

Where have we been and where are we going re Board of Forestry Rules?
The first two years of the Wilson Administration attempted to settle the "Timber Wars" by the Grand Accord Series. This effort ultimately died in the legislature.

The next effort to settle the "Timber Wars" was to use the Administrative Remedies offered up by the Board of Forestry and Rule making.
This process has been on going for the past two years and with some success.

However, there are areas in the new B of F rules that have been left vague or silent related to MSP and the Production of High Quality Timber Products: Section 4513 (b) of the Forest Practice Act.

For political reasons the rules were apssed out with the above in mind. The Department has always and will continue to advise the Board as to the working validity and intent of the rules as applied ti field practice.

The current rule package passed out with the intent of the Department to field test the rules to see if they meet the intent of the Board Action and are field effective from the RPF standpoint

One of the tests was to see how the rules applied to an SYP or its equivalent. The Department has done a study, made its evaluation on a major landowner and found that the rules as applied will not meet MSP.

The second factor that has accelerated a look at the existing rules is the Mendocino request for County rules to correct overharvesting on large landowners owning iover 10,000 acres in the County. This request for a 2% POI et al, has forced a decision as to the applicability of the new Board Rule package meeting the intent of the FPA.

It is clear that the new rules as written, from the Department point of view, will not stand the scutiny being given them from the field review and now the Mendocino County Challenge.

This brings us to the third alternative. Can the admin istrative process as it is curretnly being viewed in the new Board Rules stand a challenge in court testing the rules ability to meet the intent of the FPA (MSP).

It is the opinon of the Department that the new Rule package will not stand the legal tests being prepared if the Board of Forestry summarily dismisses the Mendocino County request for County Rules and offers up nothing as a reasonable alternative to establish MSP per Section 4513(b) of the FPA.

View 1: MSP Options "a" and "b" are of limited value if there is no clearly defined minimum biological standard for production.

Why?

1. Production levels are voluntary. There is no minimum biological standard for any site, and therefore, each landowner sets their own productivity standard (LTSY). If the regulation is voluntary, what value is served by preparation and review? Each proposed LTSY must be accepted. Review becomes more a matter of verifying methods and rule conformance than estimated results. In either case, methods and results must be verifiable to be enforceable. With no productivity floor, no-one is going to alter what they are doing in the field.

Example 1:

Assume that there are 3 identicle ownerships consisting entirely of site II timberland. Each manages solely with even-aged methods. The rotation ages selected are 25, 50, and 75 years respectively for the three. In the absence of a productivity minimum, we must approve each estimate of LTSY, and yet, each is vastly different (assuming identicle stand treatments). What purpose does Option "b" preparation and review serve in this instance?

Example 2:

Assume that there are 3 identicle ownerships which manage solely with uneven-aged methods. Each uses a different basal area retention level; 150 sq ft, 75 sq ft, and 50 sq ft (this last level represents transition). In the absence of a productivity minimum, we must approve each estimate of LTSY, yet again, they are potentially vastly different. What purpose does preparation and review serve in this instance?

2. We are allocating scare resources to establish a level of minimum productivity which cannot be enforced. For even-aged management, the landowner's rotation age is not limited. For uneven-aged management, the landowner is free to use an alternative prescription to cut below minimum basal area standards. Equivalent levels of productivity to standard silvicultural minimums are virtually impossible for the department to identify or verify (even if they were implied in regulation). We have found that review of Option "a" proposals is extremely time consuming, particularly when LTSY estimates seem to be well beyond expectations. It would be simpler to produce the Option "a" ourselves in some cases.

3. The life of the Option "a" and "b "is too short to allow verification of compliance and CDF has very limited ability to track progress. The rules do not require that cut be less

than or equal to growth over any 10-year period; only that cut be less than LTSY (growth estimate for decade 10) over any rolling 10-year period. A high level of depletion can occur over a relatively short period of time.

4. The regulations regarding MSP in planning documents (Option "a", "b", and the SYP) are all qualitative (eg maintain productivity, enhance productivity, adequate site occupancy, good stand vigor). This type of terminology is not enforceable on our end, and is very difficult to interpret for the submitter as well.

5. The SYP may not materially alter what happens in the field. This is because the SYP does not relate well to individual plans, which tend to be so variable, that there is no identifiable link to the planning document. With sufficient planning and documentation within a SYP, this deficiency can be overcome. However, this level of SYP detail is not likely to occur. For example, CFL's Option "a" calls for uneven-aged management across the ownership, with the utilization of a single basic prescription to accomplish the uneven-aged goals. During 1993 and 1994, the company actually utilized many different silv. systems including shelterwood, seed tree, many variations of alternative, selection and transition. On the other hand is Simpson Timber Co, which practices even-aged management almost exclusively. In this case, we can guess how timber operations will turn out. With CFL, it is virtually impossible.

6. Ultimately, the interested public will not support voluntary production limits and unverified, owner-provided estimates of productive potential. To build public confidence, CDF will have to provide for verification of estimates by some means.

7. If we just encourage good forestry practices and enforce minimum biological (stocking and age) standards within the rules for individual THPs, we will have accomplished most of the sustainability objectives of the Board. Why go to all of the Option "a" and "b" expense, especially if the Option "a" and "b" are excuses for dropping below the stocking standards and age limits established for silvicultural systems? When used in this fashion, the Option "a" and "b" take us backwards.

We cannot relate costs to benefits because we don't know how harvest relates to growth throughout all of the regions of the state, nor do we know how current production relates to potential production. Problems may be minor and limited, or they may be widespread. Most field people believe that it is a minority who are not practicing good (or at least resonable) forestry. In the absence of an admistrative decision by the Legislature or BOF to establish biological minimums, an "appropriate" level cannot be determined by regulators in the field. This greatly reduces (perhaps negates) the value of the long-term planning regulations

This point is illustrated with the R & J calculations. They state they are getting 20% growth without the eight 18s. The department is going to have to be very cognizant of the manipulations the landowner can go through to prove they can cut as much as they want.

I will keep you updated on what is happening.

To: Richard Wilson and Ken Delfino

From: Ross Johnson

Subject: MSP rules

It appears that Helgy's work will show that the unevenaged yields will not be as low as I was at first predicting. However, this does not remedy the problems that we have with the MSP rules. The following is the problems that I see.

1. There is no lower limit of production and inventory. We might believe that it is the Option C requirements but the board does not specifically state that it is.

2. Option C requirements may be lowered if the landowner can show how they are meeting MSP under Option A or the SYP. How do they show that? By picking the product and the volume they want to produce and showing how they can achieve these lower limits while protecting all the other forest values.

3. It is still basically true that a landowner with low volumes and growth does not have to improve his output. Basically he can maintain status quo harvesting small volumes and growing well below the potential of the land and meet the present requirements. The board has left it up to the landowner to decide whether he wants to increase his production so that he can cut more.

4. The review of Option A documents is taking much longer than expected. Presently, we have not approved any. We have spent most of our time disagreeing with the landowners growth and inventory data. We haven't even discussed whether or not the land is producing to its potential. With CFL we will eventually agree on the data and then we'll probably have to agree on their production. At least we will be maintaining inventory which is an improvement.