THE STATE OF THE STATE'S WETLANDS

DECEMBER 1998

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ACKNOWLEDGMENTS

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INTRODUCTION

California's wetland resources are an integral part of our State's rich biodiversity. Wetlands provide fish and wildlife habitat along with numerous other benefits such as flood control, water quality enhancement, ground water recharge, and educational and research opportunities. Historically, unacceptable losses in acreage have seriously diminished not only the quantity but the quality of these essential elements of our environment. Reversing this downward trend was an important goal of the Wilson Administration and now, we are pleased to report an important achievement.

WETLANDS

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- **Net Wetland Gains**

California is the first state in the nation to quantitatively determine that it has achieved its goal of no overall net loss and, more importantly, a net gain in wetlands for the years 1996 and 1997. California expects this successful trend to continue in 1998. The Resources Agency began tracking wetland gains in both quantity and quality of habitats in 1993. In 1998, it undertook an extensive study of State and federal wetland and associated aquatic habitat permits in an attempt to determine overall statewide wetland impacts.

In 1996 and 1997, California achieved 17,503 acres of gross gains in wetland habitat. These gains in the base acreage of wetlands consist solely of restoration of historic wetland habitats that no longer had wetland values and the creation of new habitats. Improvements in the quality of existing wetlands through enhancement projects are not included here, nor are any of the gains figures representative of mitigation projects.

The loss figure of 2,370 acres for the same two-year period is based on reported Clean Water Act (CWA) 404 permit data from the three U.S. Army Corps of Engineers district offices and California Department of Fish and Game 1600 Streambed Alteration Agreements. The loss was not adjusted for required mitigation. In most instances, lands covered under streambed agreements are not delineated as wetlands, nor are they considered “waters of the U.S.”, another designation requiring wetland permits. These Streambed Agreements are one of the only methods available for tracking small wetland related or riparian habitat impacts. Figures from the

State Water Resources Control Board's Clean Water Act (CWA) 401 permit data were also included to provide a reference data set for both the CWA 404 and 1600 Streambed Agreement data sets.

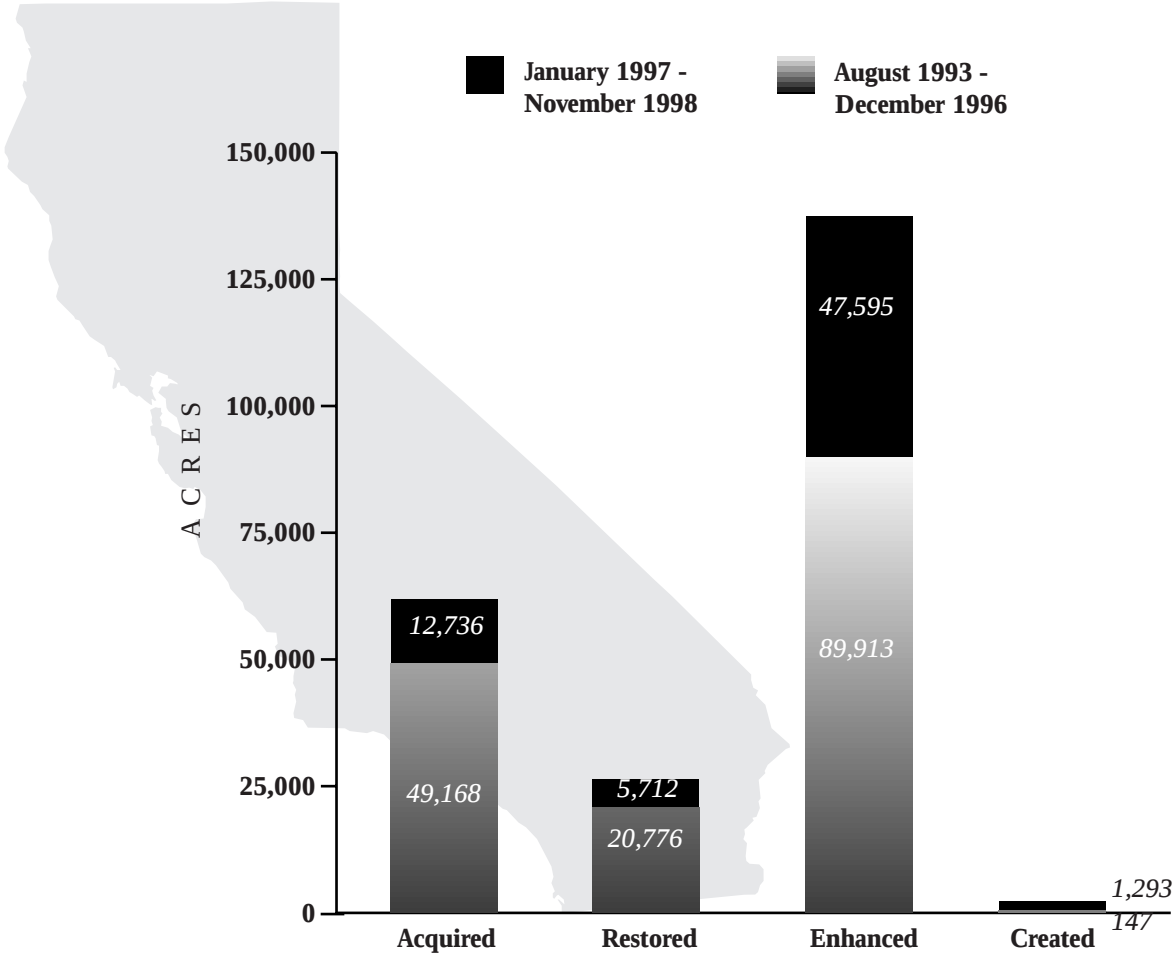
Thus, for the years 1996 and 1997 we can successfully report that California achieved a net gain in wetlands of 15,129 acres. This figure is calculated by subtracting aggregate (or total) wetland losses data from aggregate (or total) wetland gains data. The net gain figure increases to 17,439 acres when required mitigation is included. The results also reveal a 7.4 to 1 gains to losses ratio. Regardless of which figures you use, this data clearly shows that California has achieved the Governor's goal of "no overall net loss and a long-term gain" in wetlands acreage and values.[1]

The only wetland fill impacts not included in this data set are non-reported, illegal wetland fills, and impacts to small, isolated, seasonal wetlands that are less than one acre in size. In addition, the data also do not address the type of wetland affected or the quality and function of existing wetlands. However, it is important to note that the State of California has determined that over 137,500 acres of existing wetlands have been enhanced since 1993, representing over 30 percent of California's total amount of reported wetlands. During the same five year period, the State also acquired and protected over 61,900 acres of wetland habitat.

T w o

[1] A summary of the wetland gains and losses data and methodology is included in Appendix A. For a more detailed account of methodology and statistical calculations, refer to the report "Tracking No Net Loss: The California Experience" by Craig Denisoff and Chris Potter (pending release in March 1999).

California Wetland Gains August 1993 - November 1998



Governor Wilson's Wetlands Conservation Policy

In August of 1993, Governor Pete Wilson signed Executive Order W-59-93, creating the nation's first statewide comprehensive wetlands program. The California Wetlands Conservation Policy established a framework and strategy to:

- ensure no overall net loss and achieve a long-term gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship and respect for private property;
- reduce procedural complexity in the administration of State and federal wetlands conservation programs; and
- encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration.

The Policy called for the implementation of 33 specific actions, ranging from performing wetland inventories, to developing mitigation banking policies, to creating regional wetlands restoration and enhancement efforts. Of the initial 33 actions to protect and conserve wetlands, 17 actions were implemented in full and 12 actions in part (see Appendix B).

Specific Wetlands Conservation Policy Accomplishments

- **Partnerships**

California was able to achieve net gains in wetlands acreage primarily through cooperative partnerships like the Central Valley Habitat Joint Venture. These partnerships, which stress cooperation and incentives to private landowners, are the most effective way to achieve true wetlands gains. The past reliance on wetland regulations, while certainly helping to stem the loss of wetlands, did little to restore or enhance habitats. Groups such as California Waterfowl Association, Ducks Unlimited, The Nature Conservancy, The Trust for Public Land, various chapters of the Audubon Society, and many local land trusts such as Peninsula Open Space Trust, are responsible for most non-governmental wetland gains in California (see Appendix C).

Other examples of these partnerships are the California Department of Fish and Game (CDFG) Pri-

vate Land Owners Programs and the Inland Wetlands Conservation Program, administered by the Wildlife Conservation Board. These programs provide both financial incentives and technical assistance to private landowners. Management plans are developed for each of the enrolled properties and CDFG works closely with landowners to ensure proper management of the wetlands. However, a lack of available funding for these programs has limited the ability of CDFG to assist many more landowners with the management of their wetlands, which number in the tens of thousands of acres. Additional funding for these efforts may provide one of the most cost-effective ways of enhancing and preserving wetlands in California.

The *Options for Wetlands: A Guide For Landowners* handbook produced by the State Coastal Conservancy provides detailed information to landowners who have wetlands on their property or are interested in restoring or enhancing wetlands. Over 40,000 copies of this popular handbook were printed and the Coastal Conservancy reports that almost all copies have been distributed. Information from this guide is available on the California Wetlands Information System at **http://ceres.ca.gov/wetlands/**.

- **Inventory of Wetlands**

With financial and technical assistance from the U.S. Environmental Protection Agency, the State of California undertook extensive wetlands inventories of the Central Valley, the San Francisco Bay Area and Delta, vernal pool habitats in the Central Valley, portions of the Sierra range, and coastal wetlands in Southern California.

These inventories clearly showed that, contrary to popular opinion, California still contains numerous opportunities for wetland habitat restoration.

San Francisco Baylands: Historically, the San Francisco Baylands supported approximately 188,600 acres of wetlands, of which 187,000 acres were tidal wetlands. A current survey show that 87,000 acres of tidal and managed marsh wetlands remain. These figures indicate that there has been an 81 per-cent reduction in tidal wetlands, but only a 53 percent wetlands reduction overall. These figures are much lower than the frequently cited “90 percent loss” of Bay Area wetlands. An additional 32,000 acres of farmed and grazed baylands, along with 34,000 acres of salt pond and managed saline ponds still remain. Both agricultural lands and salt ponds provide substantial benefits to many wetland

associated species and provide potential restoration opportunities.[2]

Central Valley and Delta: A study performed by the Department of Fish and Game and Ducks Unlimited – using satellite imagery – shows that the Central Valley, Bay Area, and Delta contain approximately 494,202 acres of open water and 324,945 acres of estuarine, palustrine, tidal, and riparian habitat. However, an additional 820,404 acres of flooded and seasonally flooded agricultural lands exist just within the Central Valley. These agricultural lands provide habitat to many waterfowl and wetland species, and offer substantial opportunities for wetland enhancement and restoration in conjunction with existing agricultural activities.[3]

Vernal Pools: Approximately 996,621 acres of vernal pool complexes, over 40 acres in size, still remain in the Central Valley according to a study performed by the Department of Fish and Game and the U.S. Fish and Wildlife Service. Of these pools, 64,075 acres are in public ownership and the remaining 932,546 are in private ownership.[4]

Southern California: A joint study conducted by the State Coastal Conservancy, the Coastal Commission, and the U.S. Fish and Wildlife Service, examined 41 separate coastal wetlands and found that only 14,898 acres remain from a historic level of approximately 46,865 acres (a 68 percent decrease). As expected, Los Angeles County experienced the greatest percentage loss - over 93 percent. Other county losses ranged from 57 percent (Ventura County) to 67 percent (Orange County). From the data associated with this study, 29 of the 41 wetlands were determined to be held by the public sector and 7 by the private sector, indicating a total of approximately 2,000 acres in private ownership.[5]

In addition, Governor Wilson's budget provided monies to the Department of Fish and Game's new Conservation Education and Information Office to house the newly created wetland databases for use in regional and habitat conservation planning efforts. The majority of these databases can also be found on the Resources Agency "CERES" website, as well as on the Department of Fish and Game's website at **http://www.dfg.ca.gov/**.

[2] "San Francisco Estuary Baylands Ecosystem Goals" (Draft), June 26, 1998; San Francisco Bay Regional Water Quality Control Board.

[3] *"Preliminary Data from Remote Sensing Project," 1996; Department of Fish and Game, Natural Heritage Division.*

[4] *"Preliminary Progress Report Inventory and Assessment of Vernal Pool Habitats in California: A Quantitative Summary" (Draft), May, 1998; Department of Fish and Game.*

[5] *"Southern California Wetlands Coastal Inventory," 1997; State Coastal Conservancy.*

Seven

- **Acquisition and Restoration of Important Wetland Habitats**

Many of California's efforts have focused on acquiring and restoring large-scale wetland habitats. Projects such as the Yolo Basin (3,100 acres), Napa-Sonoma Marsh (10,000 acres), Bair Island (1,632 acres), Bolsa Chica (880 acres), Batiquitos (600 acres), Consumnes River (4,000 acres) and Upper Newport Bay (750 acres) were facilitated and achieved through efforts of the State working in partnerships with federal agencies, local governments, and the private sector. During the period of 1993 to 1998, the State documented the acquistion of 61,904 acres of wetland habitats to be set aside for permanent protection. This acreage is in addition to 360,780 acres of existing protected wetlands habitats within California.[6]

- **Mitigation Banking/Projects**

California's Conservation Banking policy, along with the signing into law of the Sacramento-San Joaquin Mitigation Banking Act, has helped to increase the availability of high-value wetland restoration banks to offset impacts from permitted fill projects. In addition, regulatory agencies partnered with industry to help direct large-scale wetland mitigation projects. For example, in Southern California three of the largest coastal wetland restoration and acquisition projects - Batiquitos, Bolsa Chica, and San Dieguito - are the result of mitigation for past and future development. In the San Francisco Bay Area, all the relevant wetland regulatory and planning entities developed guidelines for potential mitigation bank development.

- **Regional Wetland Efforts**

The primary focus of the Wilson Administration and the Resources Agency has been on promoting regional wetland restoration efforts. California currently has six regional wetland efforts underway: the Central Valley Habitat Joint Venture, San Francisco Bay Joint Venture, Pacific Coast Joint Venture, Intermountain West Joint Venture, Riparian Habitat Joint Venture, and the newly created Southern California Wetlands Clearinghouse. These efforts have paid significant dividends in terms of realizing on-the-ground restoration, enhancement, and acquisition projects, along with energizing support from the public Three examples of these regional efforts are highlighted below:

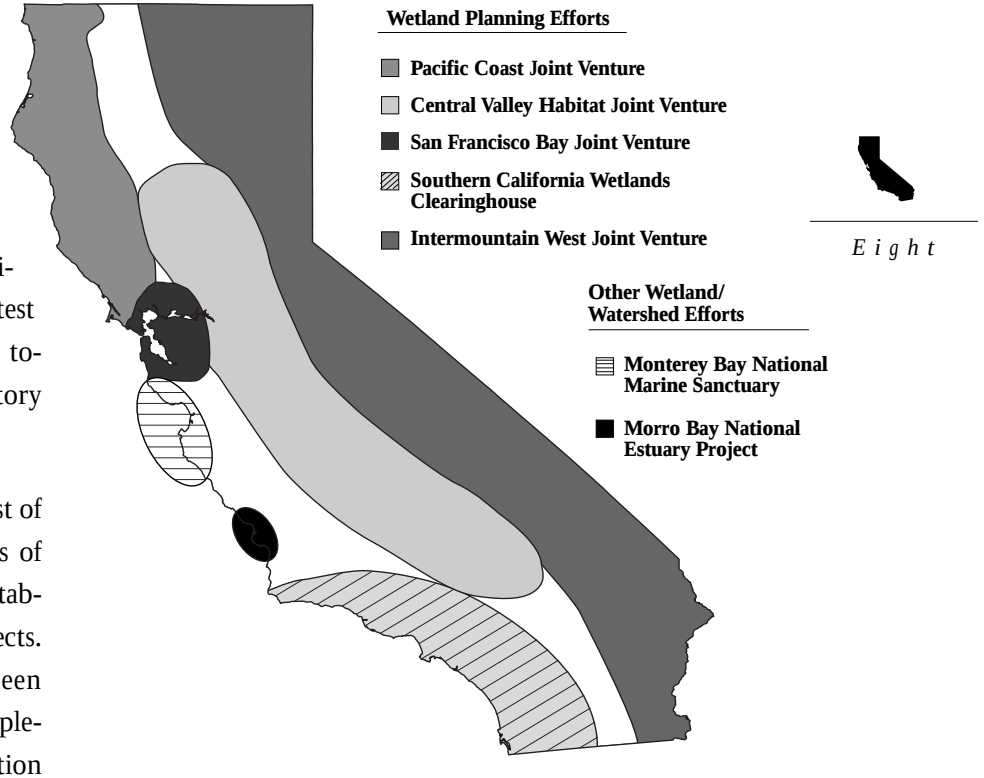
Central Valley Habitat Joint Venture: This is the oldest and most successful of the Joint Ventures in

[6] *"Draft Survey of Protected Wetland Habitats in California Summary" April 1993; California Resources Agency.*

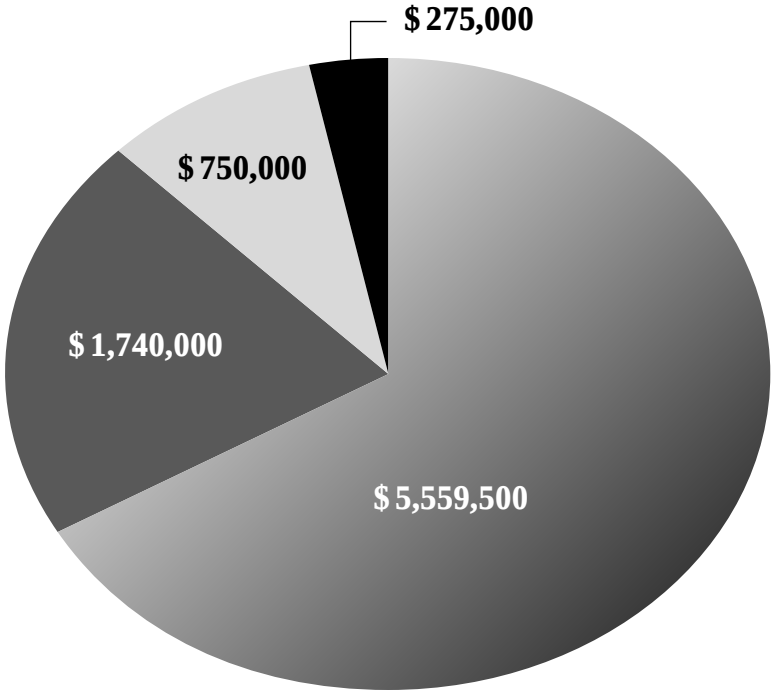
California and is responsible for most of the wetland acquisitions, restorations, and enhancements in the State. In the late 1980's, the Central Valley Habitat Joint Venture set a number of quantitative wetland habitat goals for the acquistion, restoration, and enhancement of publicly and privately held wetlands, along with ensuring adequate water supplies to these habitats. Due to the many successful partnerships with private landowners and agriculture, this Joint Venture is close to meeting many of its original goals. However, much work remains to be done in the areas of wetlands restoration and enhancement. Historically, the Central Valley has contained the greatest amount of wetlands habitats in California and today supports nearly one quarter of all migratory waterfowl in the United States.

San Francisco Bay Joint Venture: The newest of the Joint Ventures, this effort is in the process of finalizing an implementation plan which will establish habitat goals and identify high priority projects. The San Francisco Bay Joint Venture has been instrmental, even prior to the adoption of an implementation plan, in a number of wetland restoration projects, such as the 340-acre Oro Loma Marsh project and planning efforts for the eventual restoration of Bair Island.

CALIFORNIA REGIONAL WETLAND PLANNING EFFORTS



1998 FUNDING SOURCES OF THE SOUTHERN CALIFORNIA WETLANDS CLEARINGHOUSE



Southern California Wetlands Clearinghouse: This cooperative regional conservation effort, which was created by the Resources Agency, was designed in cooperation with other State and federal agencies to increase the pace and effectiveness of wetland and watershed restoration efforts in the Southern California region. Given the large size of the area (Pt. Conception in the north to Tijuana Estuary in the south), the majority of past efforts have focused on single area wetlands without the benefits of a regional approach and funding. The Clearinghouse first created an inventory of 41 coastal wetlands which clearly illustrate the importance and inter-relationship of these coastal wetland ecosystems. Second, a Work-

ing Agreement was developed among the participating agencies to work in a consensus process to identify wetland restoration and enhancement projects and to work collectively to implement on-the-ground projects. Finally, the Clearinghouse worked through the Wilson Administration to obtain $5.6 million in funding for the 1998-99 fiscal year. Coupled with their federal partners and an additional $1 million from other State sources, a total of $8.3 million was made available for Clearinghouse identified projects. All this was accomplished in the first year following formal establishment of the Clearinghouse. These funding successes, combined with a campaign to increase the public involvement aspects of the Clearinghouse through the Coastal Conservancy, may prove to be one the most effective wetland restoration efforts in the State.

- **Wetlands Homepage**

In order to improve the flow and availability of wetlands information to the public, the Resources Agency created the California Wetlands Information System. This system, available through the Resources Agency's award-winning CERES website, provides over 300 pages of detailed information on:

- general wetland resources and conservation options,
- regional wetland maps and individual sites,
- how to obtain a wetland permit and wetland regulations,
- wetland gains,
- State and federal wetland policies, and
- recent events and activities surrounding wetlands.

- **Governor's Wetlands Task Force**

The Governor's Wetlands Task Force is comprised of State agency and department leaders, and is chaired by the Secretary for Resources and the Secretary for the Environmental Protection Agency. The Task Force is convened annually to receive a report on the State of the State's Wetlands and to discuss ways to improve interagency conservation and regulatory programs.

Lessons Learned and Recommended Future Actions

In September of 1998, the Governor's Wetlands Task Force met to review the previous five years of implementation of the California Wetlands Conservation Policy. The Task Force members felt that while much has been accomplished since the implementation of the Policy, much more remains to be done. The Task Force recommends the following actions to continue efforts to restore and enhance California's important wetland resources:

- standardize and improve the coordination of tracking of wetlands gains and loss data using both reportable permit data and physical verification (aerial and remote sensing such as satellite imagery);
- expand types and support of private landowner incentive programs;
- address regulatory issues as follows:
  - policies concerning created and unintentionally created wetlands,
  - coordination of State and federal Endangered Species Act and CWA 404 programs,
  - use of regulatory instruments, and
  - coordination with local government ordinances such as county general plans;
- ensure annual funding of the six regional wetland Joint Ventures and planning efforts;
- develop protocols for coordinating and integrating State watershed efforts;
- ensure operation and maintenance accounts for newly acquired wetlands;
- increase the visibility of wetland programs;
- improve coordination with agricultural stewarship programs;
- develop water conservation strategies for wetlands;
- develop introduced species eradication and control programs for wetlands; and
- issue an annual report on the status of California's wetlands.

While, much as been accomplished with wetlands during the Wilson years, as this report report demonstrates, the diligence of the past needs to continue in order that future generations can enjoy our "Resourceful California."

APPENDIX A

SUMMARY OF CALIFORNIA WETLAND GAINS-LOSSES METHODOLOGY

The following information summarizes the final results of the California Resources Agency's effort to track no net loss of wetlands for the years of 1996-97.

WETLANDS NO NET LOSS TABLE SUMMARY

Aggregate Gain (restoration and creation only)	17,503.4 acres
Aggregate Loss	
U.S. ACE 404 Data (Los Angeles, Sacramento, San Francisco Districts)	1,432.7 acres
CDFG 1600 Streambed Agreements	942.0 acres
Total Aggregate Loss	2,374.7 acres
SWRCB CWA 401 Data (for reference only, not included in calculations)	2,498.9 acres
Adjusted Loss (impacts minus required mitigation)	
U.S. ACE 404 Data (Los Angeles, Sacramento, and San Francisco Districts)	-878.5 acres
CDFG 1600 Streambed Agreements	942.0 acres
Total Adjsuted Loss	63.5 acres
SWRCB CWA 401 Data (for reference only, not included in calculations)	1,470.5 acres
Total Net Gain [Gain - (404 + 1600)]	15,128.7 acres
Aggregate Gain : Aggregate Loss Ratio	7.4 : 1
Total Net Adjusted Gain [Gain - [(404 Gain - Mitigation) + 1600]]	17,438.9 acres
Aggregate Gains : Adjusted Loss Ratio	275.6 : 1

Summary of Methodology

In an attempt to develop a quantitative assessment of "no net loss" in California, the Resources Agency compared wetland gains information from 1996 and 1997 to wetland loss data for the same period. Due to improved data reporting systems over the past few years and resource constraints in conducting a quantitative study of numerous Department of Fish and Game (CDFG) 1600 Streambed Alteration Agreements, the study focused on only two years (1996 and 1997). However, these years were not inconsistent with both gains and loss data from 1993 to present. The gains data were derived from our Wetlands Tracking System and consisted of only wetland restoration and creation projects. The wetlands loss data was derived from a combination of U.S. ACE 404 permit data combined with a quantitative study of CDFG Streambed Agreements. Figures from State Water Resources Control Board (SWRCB) 401 permits were included as a control for the primary data sources. The figures for losses are given both in aggregate loss form and adjusted loss form which incorporates mitigation offsets.

The Resources Agency was able to determine for the years 1996-97 that the amount of wetland gains exceeded wetland aggregate losses by 15,128.7 acres. When including wetland mitigation in the results, the total gain is 17,439 acres.

The wetlands gain-loss data are reportable impacts and do not incorporate physical verification. The data does not address the types of wetlands affected (riparian, seasonal, estuarine, etc.) nor associated impacts to wetlands or water quality implications from fill projects. However, the Resources Agency has been able to determine that from 1993 to 1998 the State reported over 137,509 acres of enhancement to existing wetlands, over 30 per cent of the total 454,000 acres of reported wetlands in California (National Wetland Inventory, 1990). In addition, the State has acquired 61,904 acres in either full fee-title or easements from the years 1993 to 1998.

Resources Agency Wetland Gain Numbers

Raw data pertaining to specific wetland projects was acquired through questionnaires distributed by the Resources Agency in 1996, 1997, and 1998. Fields in the questionnaire included:

- project name,
- county in which project was located,
- source of information,
- the date when resources became available to implement the project,
- project type (i.e., acquisition, restoration, enhancement, or creation), and
- project acreage(s).

Wetland acreages (gains) were tabulated in a database ("Wetlands Tracking System") in four project types:

1) Acquisition - purchasing wetlands through easement or full-fee title,
2) Restoration - restoring former wetlands with little or no value into wetlands with full or high value,
3) Enhancement - enhancing an existing wetland to greater value, and
4) Creation - establishing wetlands where none previously existed.

The numbers in the database reflect when the restoration and creation project were reported and may not be the actually "implemented" date. Mitigation projects were not considered restoration projects.

The gains data were collected from State and federal conservation agencies and larger, recognized land trusts and environmental organizations. In addition, to soliciting data on new projects, the Resources Agency did follow-up calls on projects totaling greater than 500 acres.

Loss Numbers

In calculating the final loss numbers, the Resources Agency used U.S. ACE Clean Water Act 404 permit data combined with a quantitative study of CDFG 1600 Streambed Agreements. The SWRCB data is used as a control for the U.S. ACE data. Below is a summary of the individual data sets:

- **U.S. ACE CWA 404 Permit Data**

The data for CWA 404 permits were obtained for the years 1996-97 from the three U.S. ACE district offices (Los Angeles, Sacramento, and San Francisco). The data includes both impact and mitigation offsets. The data does not detail wetland types. In addition, similar to the gains data, wetland impacts are accounted for when the permit is approved, not implemented. In many instances, mitigation may be required before the actual impact can occur.

- **CDFG 1600 Streambed Agreement Data**

Many State and federal scientists and regulators commented that any effort to "track no net loss" should include data pertaining to smaller impacts to wetlands and riparian zones. The report by Dr. Andre Breaux, of the San Francisco Bay Regional Water Quality Control Board, titled Performance Criteria and Success of Mitigation Projects, 1988-1997, also noted: "large number of small projects and their cummulative impacts, which are often overloaded." However, in our search for data sets on non-CWA 404 and 401 permits, it became apparent that CDFG 1600 Streambed Agreements were the only source of statewide data available to us. Because CDFG does not keep 1600 Streambed Agreement data on a central database and issues as many as 4,000 agreements annually, it was not practical to tally the "estimated area involved" of each agreement for the 1996-97 time period. The only alternative was to conduct a statistical survey to calculate a statewide mean for the "estimated area involved".

We first conducted a pilot study size (five to ten random samples per each of the five CDFG regions) in order to determine our final sample with a 95 percent confidence interval. Next we used a random number generator to select samples (five strata, one stratum per CDFG region) and visited each regional office to collect the samples. From these final samples we calculated a mean for the "estimated area involved" for each 1600 Agreement. In addition, in order to preclude double counting of permits, we did not include acre impacts for permits that had existing CWA 404 permits in place. These data do not include remediation actions agreed to by project proponents.

- **SWRCB CWA 401 Permit Data**

The data for CWA 401 permits were obtained for the years 1996-97 from the SWRCB which com-

piles data from the ten Regional Water Quality Control Boards. A CWA 401 permit is the water quality certification portion of the CWA 404 U.S. ACE permit and is required for approval of all 404 CWA permits. The data for 1996 was in final form, while the data for 1997 is still in draft format. The SWRCB CWA 401 dataset includes both project impacts and mitigation data. However, in 1996, the SWRCB also included in-channel mining for their project data, including some large projects in Region IV. Given that these types of impacts are not considered wetland fills, the Resources Agency ommitted the in-stream data from the final numbers for 1996.

Issues

This report consists of wetland restoration and creation information, compared against reported and permitted wetland fill data. Both wetland gains (restoration and creation) and wetland losses (permitted projects) were accounted for when the projects were approved. Restoration and creation projects are accounted for when the project planning is completed, monies are in place, and timelines for completion are finalized. Fill projects were also accounted for when the project was permitted. In many instances, fill projects are started until a number of years after the permitted date and following the required mitigation.

In addition, the data:

- do not address types of wetlands impacted (seasonal, estuarine, riparian, etc);
- do not address associated habitat or water quality impacts to wetlands within California. (California has enhanced over 137,000 acres of wetlands since 1993);
- do not address non-reported illegal fills; and
- do not address some non-reporting NWP impacts outside of riparian and/or streamside systems (less than an acre impacts to seasonal ponds and vernal pools may not be captured here).

Finally, a detailed report of the methodology along with tables for the loss data will be available in a report titled “Tracking No Net Loss: The California Experience” by Craig Denisoff and Chris Potter in March of 1999. This in-depth report can be obtained by contacting the authors.