BAY-DELTA ENVIRONMENTAL REPORT CARD

San Francisco Estuary Project

CCMP Workbook

October 2003

COMPREHENSIVE CONSERVATION AND MANAGEMENT PLAN IMPLEMENTATION PROGRESS 2001 - 2003

INTRODUCTION & SUMMARY

How does a unique ecosystem like the S.F. Bay Delta Estuary—where the state's major rivers merge with the waters of the Pacific Ocean—meet the needs of fish, wildlife, and Bay Area residents and all of their associated activities? Each day around the Bay, millions of people fill their drinking glasses, flush their toilets, fill their bathtubs, wash their cars, and water lawns and gardens with water from the state's rivers. Industries and municipalities use that same river water to cool and clean equipment and facilities, then collect, recycle, treat, and discharge their wastewater into the Bay. Portside, ships arrive from afar carrying cargoes and ballast water—and along with that water, exotic species that sometimes invade the Bay. In rural areas, farmers irrigate crops and water their livestock. This water comes to all of us via the big dams that hold back and collect river water, and the pumps and canals that convey it to homes, businesses, and farms throughout the state. Droughts and heavy rain years make managing the system even trickier. For management is what it takes in this day and age—to keep fish populations healthy, marshes wet, and the thirst of millions slaked. Add to those needs other issues like the pesticides and other pollutants that get washed into our creeks, rivers, and Bay, and management becomes even more challenging.

How do we do it? A host of government bodies manages and regulates all activities relating to the Bay. One oversees the export pumps and controls reservoir releases; another protects endangered frogs and birds; another issues health warnings to consumers of Bay fish. Some decide how much pollution must be removed from an industry's wastewater before it can stream into rivers and the Bay. Some decide how many acres of wetlands or feet of streamside must be bought or built to offset losses to development. Environmental and community groups, meanwhile, champion more flows, more wetlands, more freeflowing creeks, and fewer chemicals for the sake of the environment.

In this context, what is it that environmental managers and concerned organizations and communities should be doing to protect and restore the Estuary? That "To Do" list came out in 1993 in the form of the Comprehensive Conservation and Management Plan for the Bay and Delta.

The CCMP, as coordinated by the San Francisco Estuary Project, brought together environmentalists, regulators, fishers, industries, developers, and politicians, among others, to develop an action plan for saving fish, conserving water, protecting wetlands, reducing pollution, and facilitating environmentally sound land-use planning related to the Bay. The first Report Card tallied progress on the original list of 145 actions, the second evaluated ten top priorities, and the third examined eight priorities (covering 35 CCMP actions) as revised during a CCMP planning session. This report continues to examine progress on those eight priorities, based on participation by a wide array of interested parties at the August 1, 2003 Report Card session sponsored by the Estuary Project, as well as on comments and concerns received by phone and email.

This year, we have eliminated the appendix of wetlands restoration projects and instead refer the reader to several excellent, comprehensive efforts to tally and track these projects, which are on-line and easily accessible. They include the San Francisco Estuary Institute's on-line wetlands tracker (www.wetlandtracker.org) and Wetlands and Water Resources' database and maps at www.swampthing.org.

Since the last Report Card, CALFED has become a major player in carrying out the goals of the CCMP, funneling millions of dollars into restoration projects and plans. Although we have included some of CALFED's

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studies and CALFED-funded projects in this Report Card, for a complete list, please see the CALFED Bay-Delta Program Annual Report 2002, CALFED's Work Plan for the San Francisco Bay Region, and/or http://calfed.ca.gov. Also, due to space constraints (our font size is as small as it can get!), this document is restricted to activities and projects that are new since the last Report Card was published in 2001.

Evaluating progress on a watershed that drains 40 percent of a state as large as California is a Herculean task, and one "Report Card" cannot possibly encompass everything that has happened in the last three years. All caveats aside, several accomplishments stand out on these pages. Much land has been acquired around the Bay for wetland restoration, one of the CCMP's main goals. Although many of the largest projects—the Cargill salt ponds in particular—are still in the planning stages, others are in the ground and on their way to being fully functioning ecosystems. Probably the biggest, most visible accomplishment, however, is the amazing number of environmental education and outreach efforts taking place around the Bay and the incredible number of watershed management planning activities taking place. Those efforts, many at the grassroots level, seem to be growing exponentially. Almost every Bay Area city or town now has a "friends of" creek or river group that has adopted the waterway running through its midst; parks, ponds, and marshes have likewise been taking under someone's wing. Interest and a sense of "ownership" in the Bay—in part encouraged by the improved public access offered by the S.F. Bay Trail—is on the rise. As the state's population increases and open space and wildlife habitat continue to be lost to housing and development, the Bay becomes yet an even more important, treasured resource. Citizens are no longer willing to stand by and watch a stream be filled so that a golf course can be built—or turn their backs when they see someone polluting the Bay.

This grassroots energy in turn feeds regulatory efforts to protect and enhance the Bay—and those efforts are increasing, as is obvious in these pages as well. As always, though, there is need for improvement, and more ideas for future progress are needed. While parts of the S.F. Bay-Delta watershed are the focus of much attention and concern—the Lower American River, the Tuolumne, and others—some, like the lower San Joaquin River—continue to struggle just to have bare minimum flows.

Like any grading system, this "Report Card" is necessarily subjective. Use it as a gauge for your own critique and comments, and plan to attend the next "Report Card" session on the Bay in 2005.

ABBREVIATIONS

Army Corps: United States Army Corps of Engineers
Bay Commission: San Francisco Bay Conservation and Development Commission
BurRec: United States Bureau of Reclamation
CALFED: CALFED Bay-Delta Program
Cal Fish & Game: California Department of Fish and Game
Central Valley Regional Board: Central Valley Regional Water Quality Control Board
Dept. of Water Resources: Department of Water Resources
IEP: Interagency Ecological Program
S.F. Estuary Institute: San Francisco Estuary Institute
S.F. Estuary Project: San Francisco Estuary Project
S.F. Regional Board: San Francisco Bay Regional Water Quality Control Board
State Board: California Water Resources Control Board
U.S. EPA: United States Environmental Protection Agency
U.S. Fish & Wildlife: United States Fish and Wildlife Service

PRIORITY 1. Expand, restore and protect Bay-Delta wetlands.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
WETLANDS MANAGEMENT 1.1 Prepare Regional Wetlands Management Plan(s).	• Wetlands and Water Resources performed a comprehensive South Bay Salt Pond Restoration Feasibility Analysis (www.swampthing.org). • Save the Bay published Reclaiming the South Bay Shoreline: A Vision for Wetland Restoration at Moffett Field. (July 2002) as well as Turning Salt into Gold (April 2002).	• **For a comprehensive list of wetland restoration projects that have been implemented around the Bay, see the database and maps compiled by Wetlands and Water Resources at www.swampthing.org** • **See also www.wetlandtracker.org published by S.F.EI.** Major projects include the Cargill salt pond acquistion, Bair Island in the South Bay, Bahia wetlands in the North Bay, and restoration projects on Petaluma Marsh, Triangle Marsh, and Simmons Slough. • CALFED has completed a draft regional implementation plan for the Bay region that includes eight restoration priorities. It has funded wetlands restoration projects in the North Bay including Hamilton Air Force Base-Bel Marin Keys, Napa River salt ponds, and Cullinan Ranch, and Cargill salt pond restoration in the South Bay. For more information on CALFED's extensive activities and accomplishments, see the CALFED Bay-Delta Program Annual Report 2002, http://calfed.ca.gov.	• There are often conflicts among regulatory agencies. • The Bay may have a sediment deficit, making restoration of subsided ponds tricky. • There can be a conflict between wetland creation and water supply—carbon and chlorine can combine to create trichloromethanes, a carcinogenic pollutant. Some researchers are concerned about methyl mercury being created when wetlands are restored. • Another concern is the spread of invasive species, such as *Spartina alterniflora*, which can take over newly restored sites.	
WETLANDS MANAGEMENT 2.1.3 Establish an implementation program to achieve wetlands protection policies.	• The San Francisco Bay Area Wetlands Restoration Program (WRP) was founded in the summer of 2002. The WRP is a partnership of public agencies working to implement the wetlands action items of the CCMP and the broad recommendations of the Baylands Ecosystem Habitat Goals Report and, ultimately, seeking to improve the health and function of the baylands' tidal wetlands. Eighteen federal, state and local agencies commit executive and management level staff to participate in the WRP, and several wetlands experts from research institutions, environmental nonprofits, and consulting firms participate on contract to the WRP. The Program seeks to engender a better understanding of habitat project successes and failures through fostering a regional wetlands monitoring CONTINUED NEXT PAGE	• Inspired by the Goals Report, the National Audubon Society has established a Bay Restoration Program in cooperation with Bay Area chapters to educate the public about the value of Bay resources and to secure permanent funding to acquire and restore baylands. • The Marin Audubon Society and Marin Baylands Advocates have launched the "Save Marin Baylands Campaign" to acquire and permanently protect tidal wetlands and diked baylands that are in private ownership. • U.S. Fish & Wildlife has begun a process to study the establishment of a Marin Baylands National Wildlife Refuge. This would broaden the opportunities to acquire and protect threatened baylands and associated uplands. CONTINUED NEXT PAGE	• The proposed revisions to the Clean Water Act by the Bush Administration may mean less protection for wetlands, especially seasonal wetlands and intermittent creeks. • Despite good regulations prohibiting the fill of creeks, we continue to lose streams and their riparian habitat around the Bay, particularly in the East Bay hills, for development and construction of housing subdivisions and golf courses. Regulatory agencies have not succeeded in completely stopping the fill, and serious questions remain about whether or not mitigation can every really replace what has been lost.	

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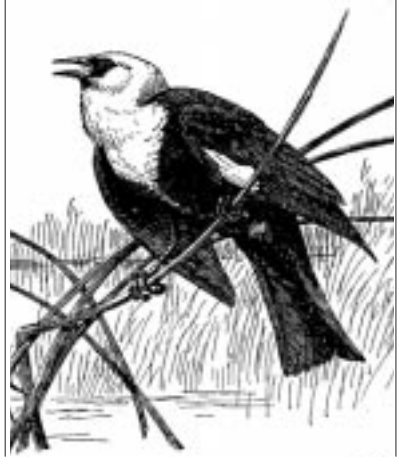
WETLANDS MANAGEMENT 2.1.3 Establish an implementation program to achieve wetlands protection policies.	program, improving habitat project designs through early review of such projects, and enhancing interagency communication and coordination. The Program's four working groups—the Executive Council, the Coordinating Committee, the Design Review Group and the Monitoring Group—assist public and private project proponents in planning, designing, and monitoring their restoration projects. The Wetlands Regional Monitoring Program (WRMP) is serving as and has made a transition into the S.F. Bay Area Wetlands Restoration Program's Wetlands Monitoring Group. The WRP Coordinating Committee is currently working with the Wetlands Monitoring Group to tailor its monitoring proposal and submit it to the WRP Executive Council for consideration. Since 2002, the Design Review Group has provided technical feedback on six project designs. The WRP Program Coordinator is assisting in oversight of regulatory agency coordination and public outreach for the South Bay Salt Ponds restoration process. For more information see www.s.f.wetlands.ca.gov. The San Francisco Bay Area Wetlands Restoration Program's Executive Council exists to maintain a forum of top-level agency administrators who share information among participants about wetlands restoration projects in the Bay Area, address and seek to resolve agency-related policy issues that may impede the progress of sound habitat projects, and maintain an informed, executive-level focus on Bay Area wetlands issues. The Council endorsed the WRP Charter of Working Principles and has been active in addressing policy issues encountered while establishing the WRP and its working groups. The San Francisco Bay Area Wetlands Restoration Program's Coordinating Committee has discussed creating a work group to investigate the potential for a sediment deficit in the Bay. Such a workgroup would evaluate existing sources and quantities of available sediment, identify data gaps and constraints, and potentially create recommendations for sediment use in wetlands restoration projects. The San Francisco Bay Area Wetlands Restoration Program's Design Review Group (DRG) reviews presentations from wetlands habitat project proponents and provides feedback on the technical designs and phasing of projects. The DRG has undertaken the review of six projects (Breuner Marsh Mitigation Bank, Lake Merritt Tidal Marsh Restoration, Crissy Field	Monitoring Plan and Protocols, Coyote Hills Wetlands Enhancement and Drainage Improvements, Twin House/State Lands Mitigation, and Bahia Tidal Marsh Restoration). Letters of Review—the DRG's standard feedback form—have been completed and issued for five projects. • In 2002, for the first time since 1968, BCDC updated the sections of its S.F. Bay Plan pertaining to fish and wildlife and marshes and mudflats. The goal was to take a more holistic look at these resources. The newly revised sections are entitled Fish, Other Aquatic Organisms, and Wildlife, and Tidal Marshes and Tidal Flats. A new policy section on Subtidal Areas was also added. These habitat-related policies guide permitting for Bay dredging, filling, shoreline development, and habitat restoration. • The California Floodplain Management Task Force sent its final "California Floodplain Management Report" to the governor. The report recommended measures that would reduce flood losses while restoring or maintaining the natural processes of floodplains, and also studied sediment transport issues.		

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WILDLIFE ACTION 2.2: Enhance the biodiversity within all publicly owned or managed wetlands and other wildlife habitats as appropriate .	• For the past 10 years, PRBO has monitored songbird use of restoration sites on the Sacramento River.	• For the first time, the Department of Water Resources and the California Department of Fish and Game issued a joint Bulletin 250 on the challenges, opportunities, successes, and problems with fish passage in Central and Northern California watersheds. The document inventories culverts, dams, dredging ponds, and other barriers to anadromous fish. DWR and the Department of Fish and Game will use the bulletin in their on-the-ground efforts to improve fish passage. • NOAA Fisheries has declared the Bay essential fish habitat, which should offer better protection for fish. • The Nature Conservancy, Sacramento River Partners, Bureau of Reclamation, and Fish and Wildlife Service are adapting the way they manage their lands along the river to maximize habitat and species diversity, based on the results of PRBO's monitoring • The San Francisquito Watershed Council's Steelhead Task Force is improving steelhead trout migration throughout the watershed by developing and implementing projects to modify or remove barriers to fish passage. In Berkeley, the Codornices Creek Watershed Action Plan is in the midst of a similar effort.	• Dredging is still an issue. There are windows of time that must be taken into account—i.e., when dredging should not occur—to protect endangered species in the Bay. • Vigorous enforcement of certain regulatory programs — such as the Endangered Species Act—is sometimes a problem.	• Along with establishing sediment TMDLs (see Priority 5), the S.F. Regional Board is exploring mechanisms for enhancing instream flow, improving canopies, and removing fish migration barriers as additional methods for restoring fisheries.

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WETLANDS MANAGEMENT ACTION 4.1: Identify and convert/restore non-wetland areas to wetland or riparian-oriented wildlife habitat. Purchase non-wetland areas to create wetlands.	• Several San Jose neighborhood community groups have expressed interest in restoration projects. For example, the West Evergreen neighborhood aims to convert what is now an open drainage ditch to a true segment of Silver Creek using funds from the Strong Neighborhood Initiative.	• For a comprehensive list of wetland acquisitions, please see the North Bay and Central/South Bay Wetlands Restoration and Enhancement projects maps and CDs at www.swampthing.org. • Major purchases since August 2001 include the 16,000 acres of mostly former salt ponds in the South Bay (the Cargill property); and the Bahia wetlands in the North Bay (400-600 acres). • 1,600 acres of former wetlands at Bair Island were purchased by U.S. Fish & Wildlife and the California Wildlife Conservation Board and restored to tidal wetlands. • With funding from the Trust for Public Land and the San Francisco Bay Fund (San Francisco Foundation), the Contra Costa County Public Works Department purchased a 126-acre parcel at the mouth of Walnut Creek known as the Pacheco Slough/Praxis property. This former tidal marsh was partially filled in 1973 as part of an Army Corps dredging project on Walnut Creek. Other wetlands and wildlife habitat surround the site, and the Public Works Department is beginning plans to restore much of the land to tidal marsh and/or seasonal wetlands and uplands. • Other wetland restoration projects include those at the Concord Naval Weapons Station (Pt. Edith); Skaggs Island ($8 million required of Caltrans by BCDC); and tidal wetlands restoration at the mouth of Alhambra Creek in Martinez • BCDC has provided $2.5 million for the creation of the Eastshore State Park along the Bay. • Caltrans has a restoration project northeast of Benicia (mitigation for Benicia Bridge construction); and Stege Marsh in southwest Richmond is being cleaned up by Zeneca Chemical.	• Funding is uncertain due to state and federal budget crises. • There are often conflicts among regulatory agencies. New stormwater regulations and development standards may mean that more wetlands are created. However, new wetlands can create mosquito habitat, which some resource managers fear could contribute to a spread of the West Nile virus. On the other hand, many resource managers believe that creating properly functioning tidal wetlands will reduce mosquito numbers, making the concern about West Nile a minor one. • The Bay may have a sediment deficit , making restoration of subsided ponds tricky. An interdisciplinary approach—with participation by more agencies—may be needed to examine this problem. • There can be a conflict between wetland creation and water supply—carbon and chlorine can combine to create trichloromethanes, a carcinogenic pollutant. Some researchers are concerned about methyl mercury being created when wetlands are restored as well. • Invasive species, such as *Spartina alterniflora*, can take over newly restored sites. • Federal funding is lacking. • The Resources Agency was eliminated from the General Fund, greatly hindering restoration projects. • With the downturn in the economy, there has been a decline in funding from private foundations for restoration work.	• The East Shore State Park offers the opportunity to preserve large amounts of Bayside habitat in perpetuity as well as the potential to restore many wetlands and mouths of creeks.

PRIORITY 2. Reduce Impacts of Invasives.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
MODERATE **AQUATIC RESOURCES 2.1** Develop, implement and enforce stringent regulations to control the discharge of ship ballast water within the Estuary and adjacent waters.	• The State Lands Commission conducts regular inspections of 25 percent of the ships entering the Bay. The Commission boards the vessels, reviews their logs, and makes sure the vessel has a ballast water management plan in place. They also conduct some salinity testing.	• The U.S. Coast Guard is working with the EPA to evaluate various ballast water treatment programs through the Environmental Technology Verification Program.	• Salinity testing is not the best tool for testing ballast water in an estuary. • Funding is needed for a full-scale evaluation of ballast water treatment technologies and for shippers to test and use new ballast water treatment methods. Public dollars have been forthcoming, but industry needs to match them. • Sea exchange is not ideal either.	• The U.S. Coast Guard is developing the next version of the California Ballast Water Management Program, along with new tools for inspecting ballast water. • Industry is supporting a 95 percent removal standard for aquatic invasives in order to have an attainment target. The National Aquatic Invasive Species Act is up for re-authorization.
SOME **AQUATIC RESOURCES 2.2** Prohibit the intentional introduction of aquatic exotic species into the Estuary and its watershed	• In 2003, federal and state officials began collaborating under the CALFED Bay-Delta Program to form the Nonnative Invasive Species Advisory Council, which will develop policies to keep invasive species out of the Bay-Delta as well as plans to eradicate some invasive species. • The national Aquatic Nuisance Species Task Force and the Western Regional Panel on Aquatic Nuisance Species (created when the National Invasive Species Act was re-authorized in 1996) have developed a 100th Meridian initiative, a collaboration among state and federal agencies, private industries, and citizens working to prevent the westward spread of zebra mussels and other aquatic invaders. The partnership includes the six states that straddle the 100th Meridian (100 degrees longitude), the Canadian province of Manitoba, and most of the western states (including California).	• S.F.EI just published A Practical Guidebook to the Identification and Control of Invasive Aquatic and Wetland Plants in the San Francisco Bay-Delta Region. www.s.f.ei.org/nis/ • The Sacramento River Weed Warriors remove aquatic invasives from the river and its banks. • SFEI and UC Davis are testing mechanical means of eradicating water hyacinth in the Delta.		• The Department of Boating and Waterways has lost funding for eradicating water hyacinth, a huge problem in the Delta.

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MODERATE **AQUATIC RESOURCES 2.3** Control problem aquatic species already in the Estuary	• The California Coastal Conservancy is leading the battle against the *Spartina alterniflora* invasion, with $2 million from CALFED; $500,000 is earmarked for eradication. The Coastal Conservancy has completed a draft EIS/R for the eradication project and held public comment meetings. Next year, the Conservancy will hold a Spartina Science symposium, featuring the latest research findings from experts around the country.	• The East Bay Regional Park District is working with Caltrans in Emeryville and Albany mudflats to mow and pull seedheads of *Spartina alterniflora*. • Many grassroots creek groups hold regular work parties to remove invasive species like *Arundo donax* (and others) from creek banks.	• Hand-pulling invasive marsh plants can be labor-intensive and expensive. The physical impacts of chemical control can sometimes be less than from hand-pulling. However, using chemicals has the potential to harm endangered and threatened species, sometimes making it difficult for resource managers to obtain permits. With either type of control, it is difficult to implement proper mitigation. A new herbicide, imazapyr (Arsenal), being tested in Washington state, may prove less toxic and offer better control of *Spartina alterniflora* than glyphosate.	
SUBSTANT **AQUATIC RESOURCES 2.4** Develop programs to educate the public about problems with exotic species and their incidental transport or introduction	• The Estuary Project's bi-monthly newsletter, ESTUARY, publishes regular articles about problem species such as water hyacinth, mitten crabs, giant reed, and others that have invaded the Bay-Delta. • In September 2001, the Estuary Project developed, printed, and distributed 27,000 copies of an eight-page, color brochure entitled "Threats to the West," as a member of the Western Regional Panel on Aquatic Nuisance Species. The Panel, through the Estuary Project, also produced two tabletop displays containing the same information, which are taken to regional conferences, as well as a one-page summary fact sheet. • The Estuary Project also developed and printed 20,0000 copies of a six-page fact sheet on Bay-Delta invasives.	• Many non-profit groups—like Save the Bay, the Aquatic Outreach Institute, and the Urban Creeks Council (to name just a few)—publish information about the benefits of planting native riparian species and the hazards of planting invasives that can escape into local waterways. • The San Francisquito Watershed Council hosts regular volunteer workdays to remove invasive species and plant natives (grown at its own nursery) at nine riparian revegetation sites throughout the watershed. In addition to these nine sites, the watershed council is leading an effort to eradicate *Arundo donax* from the watershed. Similar activities are being undertaken by the many friends of creek groups around the Bay. See www.aoinstitute.org/creekspeak/CreeksSpeak2002-1.pdf for a list of these groups, or email rk@rb2.swrcb.ca.gov.	• Some commercial nurseries still sell invasive plants. Currently, there are no laws prohibiting their sale: what is invasive in one area may not be in another.	• Regulators and resource managers are currently debating about whether or not a surcharge on the sale of any potentially invasive plants should be assessed.

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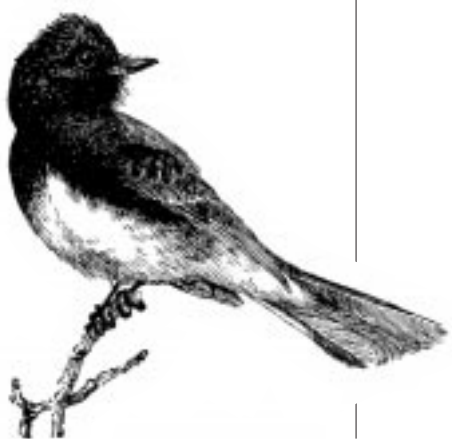
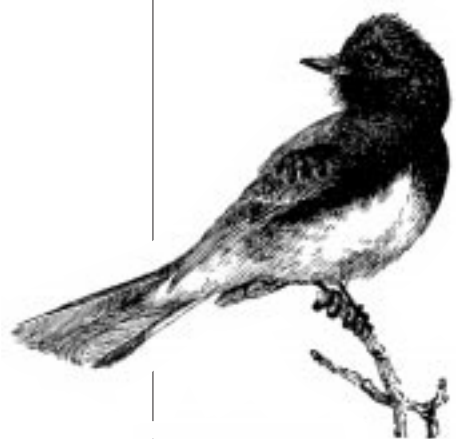
WILDLIFE 3.1 Implement predator control programs in areas where introduced predators are a constraint to maintenance and restoration of native populations.		• Control of red fox and other predators in the South Bay over the past several years may be benefiting clapper rails, particularly at Arrowhead Marsh, where their numbers have increased.	• There are no active fox control programs in the North Bay, where rail numbers are down. The South Bay rails may, ironically, be benefiting from the invasion of *Spartina alterniflora* at Arrowhead Marsh. • Other urban predators—feral cats, crows, skunks, and rats—may be having an increased impact on endangered species as well.	





PRIORITY 3. Promote watershed management throughout the Estuary.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
LAND USE 1.1 Local General Plans should incorporate watershed protection plans to protect wetlands stream environments and reduce pollutants in runoff.	• Next spring, the Napa County Board of Supervisors will consider a stream setback ordinance prohibiting construction within 100 feet of the Napa River and large streams. • Marin County is working on a streamside protection ordinance. • The Santa Clara Valley Water District is working with South Bay cities to come up with stream setbacks; its Watershed Action Plan will be adopted in August 2003. • The S.F. Bay Joint Venture is working on a model stream ordinance.		• Although the Board of Supervisors approved the ordinance, a group of Napa County citizens delayed its consideration until next year.	• The S.F. Bay Regional Quality Control Board recently published *A Primer on Stream and River Protection for the Regulation and Program Manager*. These guidelines could be adopted by cities and counties.

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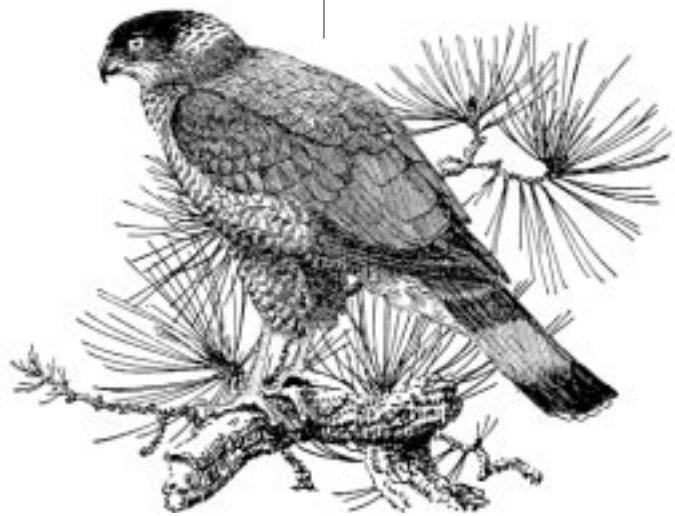
LAND USE 3.1 Prepare and implement Watershed Management Plans that include the following complementary elements: 1) wetlands protection; 2) stream environment protection; and 3) reduction of pollutants in runoff.	• In April 2002, as required by AB2117, the California Resources Agency/State Water Resources Control Board published a report to the Legislature, Addressing the Need to Protect California's Watersheds: Working with Local Partnerships (www.swrcb.ca.gov). The State is now implementing Recommendation #5 of that report—to develop a State Agency Watershed Management Strategic Plan (WMSP), and holds regular meetings with stakeholders of the California Watershed Council. • The San Francisco Bay Regional Water Quality Control Board is revising the Basin Plan to contain site-specific objectives for the Bay for copper and nickel south of the Dumbarton Bridge; to revise its water-quality objectives based on the California Toxics Rule, and its stream protection policies. It is also updating the water body and beneficial uses list in the Plan. • The S.F. Bay Regional Board published A Primer on Stream and River Protection for the Regulator and Program Manager (October 2002; Technical Reference Circulate WD.02-#1). The Primer was distributed to a wide audience, including resource agencies, regulators, non-profits, and developers throughout the Bay Area. • The Contra Costa County Department of Public Works established a countywide watershed forum, at which watershed groups can network, sharing information and resources. The group holds meetings approximately six times per year. Its mission is to identify common principles among parties involved in creek and watershed issues and to promote actions that trans.f.orm these principles into multi-objective enhancements of creeks and watersheds throughout the county. (See www.cocowaterweb.org) • San Francisco State University's Romberg Tiburon Center is beginning a project that will develop guidelines for evaluating dam removal as a means to protect and restore salmon. • Napa County is conducting an EIR assessment of all of its watersheds. The Napa County Board of Supervisors assembled a joint Board to direct the activities of the Napa River Watershed Conservancy and Napa River Watershed Information Center. The Board, supported by a technical advisory committee, facilitates coordination and funding efforts for restoration and land acquisition projects, as well as the establishment of a long-term resource management program to provide public outreach, monitoring, and assessment coordination and data management. CONTINUED NEXT PAGE	• Building on a groundswell of activities at the local level, the S.F. Regional Board is working with local watershed councils to prioritize, facilitate, and enhance restoration activities. • In 2002, the Estuary Project established a small grants program, awarding $111,507 to community groups, cities, and non-profits around the Bay for improving water quality and restoring habitat in the Estuary's watersheds. • The S.F. Bay Regional Water Quality Control Board's SWAMP (Surface Water Ambient Monitoring Program) is in its third year of data collection, targeting areas not covered under the Regional Monitoring Program for the Estuary. SWAMP is focusing on biological, physical, and chemical indicators of water quality in streams around the Bay. • Hundreds of community groups around the Bay, particularly "Friends of" creek groups and watershed awareness groups, hold regular, monthly work parties and/or implement restoration and revegetation projects, encouraging grassroots citizen involvement in protecting and restoring the Estuary and its watersheds. • The Urban Creeks Council (UCC) restored a 650-lineal foot section of Wildcat Creek at Tilden Park (2002) in Berkeley, a 160-foot section of San Pablo Creek in San Pablo (late 2001), and a 550-lineal foot-stretch of Peralta Creek in Oakland in 2002. UCC is currently designing restoration projects in cooperation with the City of San Pablo for Wildcat and San Pablo Creeks; for Arroyo Viejo Creek in Oakland; and Pinole Creek in Pinole; along with many others. • The FishNet 4C program is working to protect and restore coho salmon and steelhead trout populations in Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, and Monterey counties by undertaking such projects as removing fish passage barriers, repairing roads, and controlling erosion, supporting genetic conservation hatcheries, developing riparian and grading ordinances, implementing bioengineering projects, and developing written maintenance guidelines for public works departments. Steering committee members for the county-based, local government program include county supervisors; planning and public works staff; local, state, and federal agencies; and other key players within the counties, such as water agencies, RCDs, and watershed groups. CONTINUED NEXT PAGE	• There is sometimes a lack of coordination among state agencies, with incomplete data and lack of accountability as a result. Local agencies are sometimes unclear on their responsibilities versus those of the state. Tools and funding to support assessment of and communication of results in local watersheds are often insufficient. • More funding is needed to do watershed planning and assessment, such as studying individual watersheds in detail and prioritizing restoration activities. • The permitting process should be streamlined to make it easier for restoration projects to move forward. • Funding for the SWAMP monitoring program is vulnerable. • S.F. State University cannot complete its final product on dam removal due to a lack of funding.	• Agencies and other stakeholders should take an integrated, holistic approach to watershed management. Political leadership is needed to drive this effort. • Bay Area agencies could model the North Coast Watershed Assessment Program, a joint Cal EPA and Resources Agency-led effort to work across agency boundaries. • General fund monies could provide funding for watershed management.

PRIORITY 3. Promote watershed management throughout the Estuary.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
LAND USE 3.1 CONTINUED Prepare and implement Watershed Management Plans that include the following complementary elements: 1) wetlands protection; 2) stream environment protection; and 3) reduction of pollutants in runoff.	• The North Bay Watershed Association (NBWA) has initiated the development of a Regional Integrated Water Resources Management Plan for the entire S.F. Bay region. The Plan would coordinate the management of developed water resources and of the restoration of Bay aquatic habitats by regional water agencies. Partners include the Bay Area Storm Water Management Association, Bay Area Clean Water Association, Bay Area Water Association, and ABAG. • The San Francisquito Watershed council is working to update its 1996 Draft Watershed Management Plan. • The Water Forum (www.waterforum.org) is a diverse group of business and agricultural leaders, citizens groups, environmentalists, water managers, and local governments in the Sacramento Region that have joined to fulfill two co-equal objectives: 1) Provide a reliable and safe water supply for the region's economic health and planned development to the year 2030; and 2) Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. In 2000, Water Forum members approved a comprehensive Water Forum Agreement, consisting of integrated actions necessary to providing a regional solution to water shortages, environmental damage, groundwater contamination and limited economic prosperity. • The Lower American River (LAR) Task Force, with support from the Sacramento Area Flood Control Agency, the Water Forum, and Sacramento County, guided the development of a River Corridor Management Plan (RCMP) to institute a cooperative approach to managing and enhancing the LAR. In January 2002, representatives of more than 40 local, state, federal, community, environmental, flood control, and neighborhood agencies/organizations endorsed the RCMP as the basis for continued multi-agency collaboration and coordinated resource management for the LAR. The RCMP includes recommended actions in the areas of fisheries and in-stream habitat, vegetation and wildlife management, flood management, and recreation.	• The Waterways Restoration Institute is completing construction drawings for the restoration of approximately one-half mile—over 3,000 feet of channel—of lower Codornices Creek at the Albany/Berkeley border, which supports a population of steelhead trout. Restoration of the creek is being integrated with redevelopment of old University housing. Codornices Creek was featured in the Resources Agency's Report to the Legislature: Addressing the Need to Protect California's Watersheds/Working with Local Partnerships; April 2002. This watershed group has produced a Restoration Action Plan to remove fish barriers and obstacles, and restore water quality by implementing bank stabilization/soil bioengineering projects for eroding banks. • The Yuba Watershed Council is monitoring trends on the Yuba River, such as bacterial contamination. • The Clear Lake Basin Watershed Management project is working to control nutrients and sediment into Clear Lake, to reduce algae and other aquatic weeds, to eradicate hydrilla, and to eliminate mercury pollution. • The Santa Clara Basin Watershed Management Initiative is working to restore riparian and fish habitat, to deal with urban runoff problems, to help amend the Basin Plan for copper and nickel, and to assess the watershed, among other goals. The group will develop and implement a community-based comprehensive Watershed Management Action Plan. • The Urban Creeks Council is restoring a 200' stretch of Wildcat Creek in downtown San Pablo, replacing a failing concrete retaining wall with soil bioengineering solutions (using plants), which will improve water quality, offer habitat, and improve fish passage. • The California Watershed Council's first meeting was attended by aproximately 300 stakeholders. • The San Francisquito Watershed Council hosts monthly forums, where representatives from local governments, agencies, community organizations, and individuals meet to discuss creek and watershed-related information and issues. Many similar efforts are taking place around the Bay. See www.aoinstitute.org/creekspeak/CreeksSpeak2002-1.pdf for a list of similar groups, or email rk@rb2.swrcb.ca.gov. • An interactive web site for the Napa River Watershed Information Center, utilizing GIS information and an on-line community framework, is currently being tested and uploaded with watershed data.	• The Water Forum Successor Effort (WFSE) was created to implement the Water Forum Agreement. Focus of the implementation is on the seven elements of the Water Forum Agreement that will be implemented in concert over the next 30 years. The seven elements are: increased surface water diversions, actions to meet customers' needs while reducing diversion impacts in drier years, an improved pattern of fishery flow releases from Folsom Reservoir, Lower American River Habitat Management Element, water conservation, groundwater management, and the Water Forum Successor Effort. • The Lower American River (LAR) Task Force is focused on implementing the recommended actions of the River Corridor Management Plan (RCMP). Significant progress occurred on RCMP implementation in 2002: of the 112 actions in the three-year action plan, 52 actions are either completed or underway, and 22 actions are in the plan development stage (i.e. designs or studies to implement the action are being conducted). Thirty-eight actions of the *Lower American River Corridor Management Plan* are not started or on hold, primarily due to staffing and funding constraints. Additional information about RCMP implementation is available in the Annual Report that can be accessed on the Sacramento Area Flood Control Agency's (SAFCA's) web site (www.safca.org).	

PRIORITY 4. Create incentives that encourage local government, landowners and communities to protect and restore the Estuary.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
LAND USE ACTION 1.3 Integrate protection of the Estuary with other state land use-related initiatives.	• SB 221--signed into law in 2001--prohibits a city or county from approving a residential subdivision of more than 500 units unless there is written verification from the applicable public water system that a sufficient water supply is available or, in addition, a specified finding is made by the local agency that sufficient water supplies are, or will be, available prior to completion of the project. • The Resources Agency's California Legacy Project aims to identify and prioritize landscapes that support any of five key conservation values: aquatic and terrestrial biodiversity, working landscapes (crop, forest, or range lands), watershed values, lands for recreation and educational facilities in natural areas, and urban open space. As part of its effort to inventory existing and emerging conservation plans throughout the state, the Legacy Project held nine workshops around the state to gather local and regional information. The Project's California Digital Conservation Atlas (http://legacy.ca.gov/new_atlas.epl) presents GIS data layers from a variety of local, state, and national sources; users can mix and match data layers at different scales to create custom maps.		• The Legacy Project identified information and data gaps, which should be addressed in order to pinpoint the areas most appropriate for research, study, and analysis.	• S.F. Bay Joint Venture and members of its Creeks Committee are exploring legislation to create a regional network of watershed/riparian stations through the community college system and via a formal partnership of the State Board and the State Department of Education. • Sediment TMDLs are generating incentives for local government and private entities to apply watershed assessment techniques in evaluating the best options for sediment reductions to impaired water bodies. • Many different agencies, local governments, non-governmental organizations, and other entities maintain their own environmental and planning data, which may not be easily accessible or standardized. The Legacy Project's Digital Conservation Atlas brings together in one web site more than 40 unique sources of natural resource and conservation data for easy access and use. The Project (now in its third year of six) plans to establish a sustainable mechanism for updating that digital information once the Project's work is finalized.

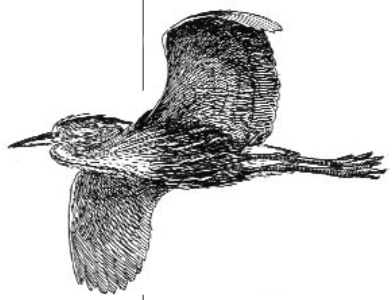


PRIORITY 4. CREATE INCENTIVES THAT ENCOURAGE LOCAL GOVERNMENT, LANDOWNERS AND COMMUNITIES TO PROTECT AND RESTORE THE ESTUARY.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
LAND USE 2.1 Regional agencies should assist in identifying and developing consistent policies that provide an integrated framework for local governments to protect the resources of the Estuary. - continued -	• The Santa Clara Valley Water District's "Ends Policies" continue to guide all the district's activities. • See also "Government & Private Initiatives" column under Land Use 3.1. • The Bay Area Alliance for Sustainable Communities and the five regional agencies (the Association of Bay Area Governments, the Bay Area Air Quality Management District, the Metropolitan Transportation Commission, the S.F. Bay Commission, and the S.F. Regional Board) launched the Smart Growth Strategy/Regional Livability Footprint Project, which seeks to 1) create a smart growth land use vision for the Bay Area; 2) identify and obtain regulatory changes and incentives needed to accomplish these objectives; and 3) develop 20-year land use and transportation projections based on the vision. The Smart Growth Strategy/Regional Livability Footprint jointly conducted outreach and workshops among stakeholders and the public and produced the Smart Growth Vision, which promotes growth patterns that accommodate housing and other urban uses in existing urbanized areas while protecting undeveloped lands. • All five Bay Area regional agencies (the Association of Bay Area Governments, the Bay Area Air Quality Management District, the Metropolitan Transportation Commission, the S.F. Bay Commission, and the S.F. Regional Board) are members of the Bay Area Alliance for Sustainable Communities and support the Compact for a Sustainable Bay Area, which calls for protecting and restoring the Bay-Delta Estuary, restoring wetlands, reducing nonpoint source runoff, and promoting watershed management practices. The Bay Area Alliance is distributing the Compact among local and regional governments and the private sector to guide their future activities. The Bay Area Alliance also published its first "Indicators" report, which includes the ecological health of the Bay, and plans to update the report periodically and aims to focus public attention on the issues that the indicators reflect. CONTINUED NEXT PAGE	• The San Francisquito Watershed Council helps facilitate an integrated watershed approach to management of creek-related issues in the five cities and two counties of the watershed. In the East Bay, the 20-year old Wildcat-San Pablo Creeks Watershed Council does the same thing for the cities in Contra Costa County through which the two creeks flow. Many other, similar, watershed-planning efforts are taking place around the Bay (see www.aoinstitute.org/creeks-peak/CreeksSpeak2002-1.pdf for a list of other groups).	• State and federal budget shortfalls could hinder progress. • There have not been any proposals to locate a power plant within the BCDC's jurisdiction since the report was adopted. The maps that were created for the project have been used to research other types of projects and to compile data on areas around the shoreline.	• The Smart Growth Strategy/Regional Livability Footprint Project plans to work with legislators on a package of policy changes and incentives that local governments would need in order to implement the Smart Growth Vision. • The Bay Area Alliance is developing an implementation strategy intended to focus its efforts over the next three years. Its priority will be to promote Smart Growth and work to secure the incentives necessary for local governments and the private sector to implement more efficient land use.

PRIORITY 4. Create incentives that encourage local government, landowners and communities to protect and restore the Estuary.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
LAND USE 2.1 cont. Regional agencies should assist in identifying and developing consistent policies that provide an integrated framework for local governments to protect the resources of the Estuary.	• With the aim of fostering ongoing discussion among scientists, designers, planners, public access advocates, wildlife advocates, and regulators on how to balance the sometimes competing public goals of improving public access and protecting natural resources, the S.F. Bay Commission is convening the Public Access and Resource Protection Forum. The Forum will focus on one or more proposed restoration projects in the Bay Area. It will examine how to achieve restoration goals by protecting identified sensitive habitats, while at the same time exploring ways to provide public access using siting, design, and management strategies that avoid or minimize adverse effects on wildlife. The Forum aims to provide a focused discussion arena for developing a collective vision for public access and wildlife protection for S.F. Bay. • Water Forum signatories include cities and counties that have land use planning responsibilities and water purveyors that have water planning responsibility. Water Forum signatories recognize the need to coordinate between water resources planning and land use decision-making, acknowledging that there are a number of existing laws and procedures in place to link land use decisions and water supply. During 2001-2002, the Water Forum Successor Effort's (WFSE's) Land Use Committee developed recommendations to implement the land use/water use coordination procedures for the Water Forum Agreement. It is the intent of the signatories that land use decisions dependent on water supply from the American River or the three groundwater sub-basins in Sacramento County be consistent with the limits on water supply from the American River and the estimated average sustainable yield for those groundwater subbasins as negotiated in the Water Forum Agreement.	• The BCDC's recently completed Thermal Power Plant Siting Report described California's energy crisis and its potential impact on S.F. Bay, and examined how power plants can impact estuaries. Taking into account the sensitive resources along the Bay shoreline, improvements to technology, and the potential for power plant impacts on the environment, the report concluded that power plants no longer require siting along the shoreline of the Bay. As part of the study, the Commission compiled existing natural and cultural resource information from its project files and from other agencies and converted it to geographic information system (GIS) maps. The Commission adopted the report and maps. • The BCDC's recently revised recreation policies provide specific guidance on what types of recreational use are appropriate for former military installations and include provisions that protect the Bay's resources, including large, sandy beaches and other significant habitat areas. • The Water Forum is keeping track of water use within the region and through the WFSE process, land use planners and water purveyors meet annually to discuss water use supply and land development.		• The power plant siting project teamed BCDC and the California Energy Commission (CEC) in considering coastal power plants; the CEC gained a better understanding of the Commission's policies and supported the final report. The Commission is compiling permit information and additional resource information onto the GIS maps, with the eventual goal of providing this information to every staff person via the desktop. Staff could then research resource information for a particular location and identify adjacency issues that come up in siting developments, mitigation, and public access. This information will help staff develop policies, review projects, and conduct enforcement cases more efficiently, thereby protecting the Bay's resources more effectively.



PRIORITY 4. CREATE INCENTIVES THAT ENCOURAGE LOCAL GOVERNMENT, LANDOWNERS AND COMMUNITIES TO PROTECT AND RESTORE THE ESTUARY.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
LAND USE ACTION 5.1 Create economic incentives that encourage local governments to take action to protect and restore the Estuary.	• The ABAG-CALFED Task Force--established in 2000 and comprised of locally elected officials and representatives from non-governmental organizations and the major Bay Area water supply agencies--is developing an atlas and evaluation of the Bay Area's water availability, conservation, quality, and usage. This regional effort seeks to foster sustainability strategies and incentives that fully integrate water management solutions, including increased water conservation and efficiency, water recycling, groundwater management, watershed conservation and flood control, water quality improvement, and water blending and exchange. Incentives may be funded by Prop. 50 or by legislative vehicles. In a joint effort to implement CCMP actions via CALFED, the CCMP Implementation Committee serves as the Ecosystem Restoration Subcommittee for the Task Force. • The S.F. Regional Board is providing technical and financial assistance to municipalities and other entities developing self-directed watershed management and protection plans. Municipalities that implement these plans can gain regulatory credit toward potential TMDL and urban runoff permit requirements.	• Active watershed management activities are underway in many watersheds, including the Napa and Petaluma rivers; Sonoma, San Francisquito, Alameda, and Alhambra creeks; Santa Clara Valley watershed, Codornices Creek watershed and the Wildcat-San Pablo Creeks watershed, to name just a few.		• The ABAG/CALFED Task Force recommended establishing a link between land use and water supply for the purposes of ABAG's long-range forecasting and the Smart Growth visioning process. With the help of South Bay water supply planners and CALFED, the Task Force will begin a limited-range study effort to evaluate water supply requirements associated with non-sprawling growth patterns. • Similar watershed management activities should be expanded to more areas of the Estuary.
LAND USE ACTION 5.2: Develop new funding mechanisms to pay for plans, physical improvements and program administration to protect the resources of the Estuary. - continued	• SB 1653--signed into law in 2002--will create the California Bay-Delta Authority to carry out implementation of CALFED's August 2000 record of decision. The Authority will operate under the California Resources Agency, with status equal to the state Dept. of Fish and Game and the Dept. of Conservation. A 20-member governing board will include 12 federal and state officials, seven members of the public, and one representative from the Bay-Delta Public Advisory Committee. • Federally appropriated funds for activities authorized under various Water Resources Development Acts are enabling the Army Corps (via programs such as Section 206 and 1135) to become a federal partner with local entities in studying and implementing restoration priorities. Specific congressional authorization has also allowed the Corps to assist in the preparation of watershed management plans for designated watersheds, including the San Pablo Bay Watershed (see below). CONTINUED NEXT PAGE		• Proposed legislation (Water Resources Development Act of 2003, or WRDA 03) may increase funding available for restoration and enhancement projects through the Corps' Continuing Authority program (e.g., Section 206). Other funding could come from the Corps' 205 Program, which is now single purpose, i.e., flood control. Aquatic restoration may become a recognized benefit of 205, which could make additional monies available for restoration and enhancement projects. • Federal funding is currently at a minimum. Because participation in the San Pablo Bay Restoration Program is voluntary, owners of potential restoration properties must be willing to assume the responsibility of maintaining the restoration site. Owners of many suitable sites are not interested in restoration. CONTINUED NEXT PAGE	• AB 204, a two-year bill that authorizes a motor vehicle registration fee to fund restoration projects that mitigate for the adverse water quality impacts of motor vehicles and streets and highways, is being considered by the state legislature. • SB 86, which would establish the Sacramento-San Joaquin Delta Conservancy Program, is being considered by the state legislature. The Conservancy Program would focus on preserving the unique agriculture and wildlife, economic vitality, cultural viability, and recreational opportunities of the Delta. It would fund projects 1) promoting farming that integrates agricultural activities with environmental protection through wildlife-friendly farming practices; 2) protecting farmland, including grazing land; 3) implementing policies and programs that are consistent with other government plans; 4) providing public access and recreational opportunities; and 5) protecting and enhancing projects that provide open-space and natural areas. CONTINUED NEXT PAGE

PRIORITY 4. CREATE INCENTIVES THAT ENCOURAGE LOCAL GOVERNMENT, LANDOWNERS AND COMMUNITIES TO PROTECT AND RESTORE THE ESTUARY.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
LAND USE ACTION 5.2: CONT. Develop new funding mechanisms to pay for plans, physical improvements and program administration to protect the resources of the Estuary.	• Congressional authorization under Section 503 of the 1996 Water Resources Development Act enabled the Army Corps to partner with the Coastal Conservancy and The Bay Institute to prepare a San Pablo Bay watershed restoration plan and to implement restoration projects. • California voters passed Prop. 40 in 2002, allowing the state to sell $2.6 billion in general obligation bonds to develop, restore, and acquire state and local parks, recreation areas, and historical resources, and to fund land, air, and water conservation programs. • California voters passed Prop. 50 in 2002, allowing the state to sell $3.44 billion in general obligation bonds for various water-related programs. More than half the funds will be allocated to the CALFED Bay-Delta Program ($825 million) and coastal protection ($950 million), with the rest allocated to integrated water management ($640 million), safe drinking water ($435 million), clean water and water quality ($370 million), desalination and water treatment projects ($100 million), Colorado River management ($70 million), and water security ($50 million). • CALFED continues to provide substantial funding for Bay-Delta restoration and protection through its Ecosystem Restoration Program (ERP). • The S.F. Regional Board is directing its nonpoint-source grant monies (Prop. 13) to municipalities implementing high-priority watershed-based stream and habitat restoration projects.	• Restoration projects promoted through the San Pablo Bay Restoration Program include Sonoma, American Canyon, Pinole, and Las Gallinas creeks. • More than 300 Ecosystem Restoration Programs are now underway, including large-scale river and stream restoration projects in Delta tributaries, fish screens to keep salmon and steelhead out of water diversions, pilot-scale Delta and S.F. Bay marsh restorations, invasive species controls, and ecosystem research projects.	• A recent evaluation of past ERP projects identified contracting difficulties and the time and effort required to secure regulatory approval as impediments to many projects. Also affecting ERP projects are funding restrictions (fewer staff are available for planning and administering restoration projects) and constraints on some key federal program funds, (e.g., at Central Valley Project Improvement Act programs, which limit activities to restore Central Valley tributaries).	• The Bay Area congressional delegation is promoting a bill that would give special authority to the Corps for restoration projects in S.F. Bay, which could increase funding significantly. • CALFED's Working Landscapes Subcommittee is working to encourage better delivery of initiatives that help farmers, ranchers, and other landowners to protect and restore habitats and improve the environment on their lands. The Subcommittee is also developing recommendations about how Prop. 50 funds could be used for these purposes, including a potential priority in the Napa River watershed. • Funds from Props. 40 and 50 could provide additional funding for local watershed-based stream and habitat restoration projects.
LAND USE 5.3: Investigate and create market-based incentives that promote active participation by the private sector in cooperative efforts to implement goals for protection and restoration of the Estuary. - continued -	• As part of the effort to help landowners improve the economic viability of their properties while preserving open space, the Alameda RCD, Alameda County, and others are exploring the idea of a pooled bank of conservation easements that could be used to mitigate for development elsewhere in the region. Also under discussion is an innovative conservation service for land easements, purchase, and stewardship activities. CONTINUED NEXT PAGE		• No progress to date has been made, although more stakeholders are coming on board, and more discussions are taking place. • The use of mitigation banks is highly controversial.	• Drawing on the success of its Partners in Restoration (PIR) project, which allows farmers in Monterey County to use a simple, one-stop permit shopping process for conservation projects on their land, Sustainable Conservation is now involved in a multi-year effort to replicate this model project in the Morro Bay, Salinas River, Navarro River and Coastal Marin watersheds. Sustainable Conservation is now embarking on a program to train Resource Conservation Districts and NRCS staff from all over the state to carry out local permit coordination efforts. CONTINUED NEXT PAGE

PRIORITY 4. Create incentives that encourage local government, landowners and communities to protect and restore the Estuary.

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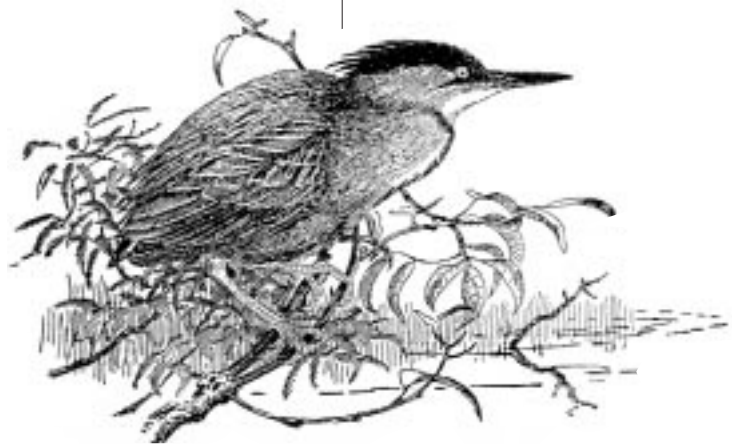
LAND USE 5.3: CONT. Investigate and create market-based incentives that promote active participation by the private sector in cooperative efforts to implement goals for protection and restoration of the Estuary.	• 2002 Farm Bill programs provide cost-share incentives to landowners, in the context of a conservation plan. Bay Area counties received $3.6 million for 2003. The Environmental Quality Incentives Program (EQIP) promotes conservation on agricultural lands and environmental quality as compatible national goals; farmers and ranchers may receive financial and technical help to install or implement structural and management conservation practices on eligible agricultural land. The Wetlands Reserve Program (WRP) provides technical and financial assistance to eligible landowners to address wetland, wildlife habitat, soil, water, and related natural resource concerns on private lands in an environmentally beneficial and cost-effective manner; landowners receive financial incentives to enhance wetlands in exchange for retiring marginal land from agriculture. The Wildlife Habitat Incentives Program (WHIP) encourages creation of high-quality wildlife habitats that support wildlife populations of national, state, tribal, and local significance; NRCS provides technical and financial assistance to landowners and others to improve riparian, wetland, upland, and aquatic habitat areas on their properties. • The Santa Clara Valley Water District's Watershed Stewardship Grant Program makes $300,000 in grant money available to fund community-based, nonprofit organizations in their watershed stewardship efforts aimed at enhancing ecosystem health, water supply, and water quality within Santa Clara County. For more information, see www.valleywater.org. • The Fish Friendly Farming Program assists grapegrowers in improving water quality and fish habitat and provides for voluntary compliance with local, state, and federal regulations. Farmers can receive grant assistance to implement restoration and repair projects. Farmers can also have their farm plans certified and potentially use the certification in marketing programs. Laurel Marcus & Associates, which originally developed Fish Friendly Farming for the Russian, Gualala, and Navarro river watersheds, is expanding the program to the Napa River watershed, with the Napa County RCD as the partner agency. Other participating entities include the Napa County Grapegrowers Association, the Napa Valley Vintners Association, the Napa County Farm Bureau, the Sierra Club, the Audubon Society, the Napa County Agricultural Commissioner, the S.F. Regional Board, the National Marine Fisheries Service, and Cal Fish & Game.	• During the 2001-2002 grant cycle, 19 community environmental groups received grant awards totaling nearly $250,000 that funded a variety of conservation, restoration, and educational projects.	• California has received plenty of money for projects but not much funding for technical staff. • California receives a tiny amount of funding compared to its agricultural productivity.	• In July 2000, Sustainable Conservation launched the Dairies Project to help farmers change their management practices and reduce pollution. Working with strategic partners, U.C. Davis, government agencies, and the state's dairy industry, the Project is currently pursuing initiatives that require minimal investment for dairy producers, yet offer important opportunities for improving environmental quality. These include the trans.f.ormation of manure to methane to produce electricity, the conversion of manure to compost, and technical assistance in pollution control for non-English-speaking dairy farmers. The project is also investigating manure separation technology as an alternative to open lagoons, the settling ponds that most dairies use to separate solid matter from wastewater. To help provide economic incentives to adopt best management practices, the Project is assessing the feasibility of a premium pricing strategy for milk products from environmentally certified dairy farms.



PRIORITY 5. Reduce pollution of the Estuary from urban and agricultural runoff and other non-point sources.

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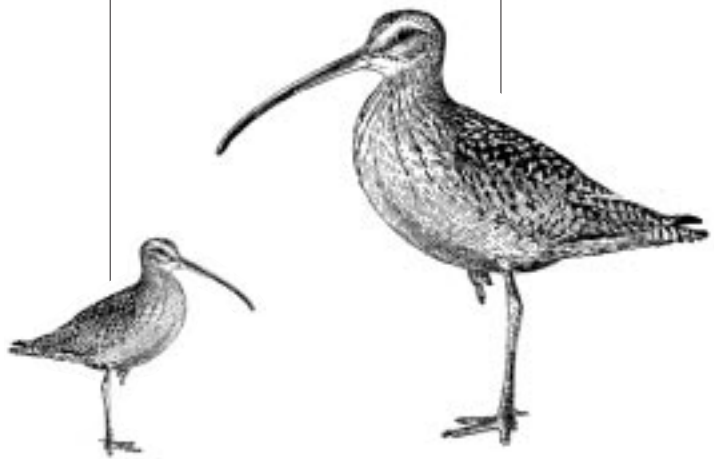
POLLUTION PREVENTION AND REDUCTION 2.1 Pursue a mass emissions strategy (TMDLs) to reduce pollutant discharges into the Estuary from point and non-point sources and to address the accumulation of pollutants in estuarine organisms and sediments.	• The S.F. Regional Board expects to establish a mercury TMDL for S.F. Bay in 2003; sediment TMDLs for the Napa River and San Francisquito Creek and TMDLs for PCBs and for pesticides in urban creeks that drain to S.F. Bay in 2004. The Board is also working on a mercury TMDL for the Guadalupe River. • The S.F. Regional Board, the Bay Area Clean Water Agencies, and the Bay Area Stormwater Management Agencies Association have formed the Clean Estuary Partnership under a formal MOU to collaborate on developing and implementing TMDLs for S.F. Bay. Other participants include the Western States Petroleum Association, the Bay Planning Coalition, and the Port of Oakland. The mission of the partnership is to use sound science, adaptive management, and public collaboration to develop and implement technically valid and cost-effective strategies including TMDLs that result in identifiable, sustainable water quality improvements in the Bay.	• The S.F. Regional Board established a mass emission strategy (site-specific objectives and prevention-based action plans) for copper and nickel in South S.F. Bay (south of the Dumbarton Bridge) in May 2002; the strategy is currently being implemented.	• Resources and data are limited. • TMDLs may not be effective at controlling pollutants that bioaccumulate	• The S.F. Regional Board plans to issue TMDLs for legacy pesticides (e.g., DDT); for registered pesticides (e.g., diazinon in S.F. Bay); for copper and nickel in S.F. Bay north of the Dumbarton Bridge; for selenium; for PBDEs; for PAHs; and for xenotoxics/xenobiotics (toxics associated with household and health products). • The desire to conserve and recover native fish and aquatic wildlife populations is driving the development of sediment TMDLs for Bay Area streams. Because several factors often influence species declines, the Regional Water Quality Control Board has proposed a holistic analysis and management program to facilitate recovery of at-risk species. Although the Regional Board will require actions to control sediment, they will also promote and reward actions—through the use of regulatory incentives and by awarding state and federal grants—that address other identified limiting factors, such as fish migration barriers, stream and riparian habitat degradation, and low baseflow.

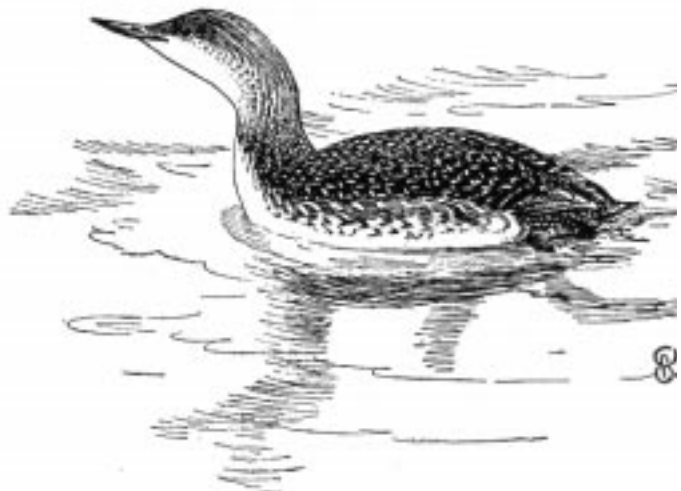
PRIORITY 5. Reduce pollution of the Estuary from urban and agricultural runoff and other non-point sources.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
POLLUTION PREVENTION AND REDUCTION 2.4 Improve the management and control of urban runoff from public and private sources.	• The S.F. Regional Board continues to implement urban runoff permits. The latest (third-generation) permits address stream channel erosion, erosion control for public roads, and pollutant-specific requirements (mercury, pesticides, and PCBs) and include greater emphasis on managing areas of new development and redevelopment. • The State Water Resources Control Board will issue a stormwater permit for all municipalities and areas of the Estuary not covered in previously issued urban runoff permits. • The Central Valley Regional Water Quality Control Board is amending its Water Quality Control Plan (Basin Plan) for the San Joaquin/Sacramento River Basin to address water quality objectives and a TMDL for diazinon for the Sacramento and Feather Rivers, and is developing an implementation program to address the discharge of diazinon and alternatives from orchards. • The Brake Pad Partnership, a cooperative effort begun in 1996 among international vehicle brake manufacturers, government agencies, and environmental groups, is working to understand and minimize the impacts of vehicle brakes on surface waters. After developing an Action Plan, the group has put together a study plan that will include water quality monitoring, physical and chemical lab tests, and environmental fate and transport modeling of copper, a component of brake pad linings. The Partnership was recently awarded a Proposition 13 grant of $700,000 to carry out the Study Plan, and is seeking an additional $100,000. Partners believe the study will make the EPA's watershed and stormwater models more effective and will provide a tool for automobile brake pad manufacturers to evaluate other brake pad components. The Study Plan will also add to existing science for understanding the relationship between airborne particulate matter and water quality. • The Central Valley Regional Water Quality Control Board is investigating a proposal by the County of San Benito to investigate, enforce, and come up with a plan to clean up and abate pollution from the New Idria Mercury Mine in San Benito. • The San Francisquito Watershed Council will be undertaking a project to review policies, codes, and ordinances related to polluted urban runoff for the jurisdictions within the watershed. The project will also include two demonstration sites at which simple building and landscaping retrofits will be implemented to reduce polluted urban runoff from the properties.	• Bay Area municipalities responsible for limiting urban runoff are implementing these actions. • The EPA is phasing out all urban and many agricultural uses of diazinon, one of the most ubiquitous pollutants in Bay Area streams, by the end of 2004. Retailers were ordered to stop selling it for indoor use by December 31, 2002; sales of products for remaining urban uses and the agricultural uses subject to the phase-out must end by December 31, 2004. • The S.F. Bay Regional Water Quality Control Board passed an amendment to its Basin Plan, establishing stringent standards for copper and nickel. • California has just passed a bill banning the use of some flame retardants, which are an emerging pollutant of concern (penta PBDEs). • BCDC has updated its water quality policies to address stormwater runoff problems. • Public/private partnerships are working with Marin and San Mateo counties to develop ordinances for stream setback and erosion control. Napa has already completed one.	• Alternatives to diazinon may also present problems for aquatic life. • Although the Central Valley Regional Board's revised Basin Plan does address diazinon-related problems in the Sacramento and Feather Rivers, it does not address the San Joaquin, which is on a separate track since chlopyrifos is also a concern. • There is currently no routine monitoring of Bay Area creeks. Due to the lack of monitoring, no data exists with which to assess the status and trends of creek habitat the way the RMP does for the Bay.	



PRIORITY 5. Reduce pollution of the Estuary from urban and agricultural runoff and other non-point sources.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
PUBLIC INVOLVEMENT AND EDUCATION 2.5 Increase long-term educational programs designed to prevent pollution of the Estuary's ecosystem.	• Working closely with the San Francisco Regional Water Quality Control Board, the S.F. Estuary Project holds several workshops each year to teach developers, builders, consultants, and municipal staffs about Best Management Practices that prevent erosion and control sediment from construction sites. • The S.F. Bay Regional Board published A Primer on Stream and River Protection for the Regulator and Program Manager (October 2002; Technical Reference Circulate WD.02-#1). The Primer was distributed to a wide audience, including resource agencies, regulators, non-profits, and developers throughout the Bay Area.		• Finding funding for classes on Best Management Practices is a continuing challenge.	
POLLUTION PREVENTION AND REDUCTION 2.6 Improve the management and control of agricultural sources of toxic substances.	• NRDC, Earth Justice, DeltaKeeper, WaterKeeper, Environment Now, the Ocean Conservancy, California Sports.f.ishers, and others have appealed the ag discharge waiver issued by the Central Calley Revional Water Quality Control Board, which exempts agricultural dischargers from obtaining the same permits and complying with the same environmental standards other dischargers must obtain and comply with, to the State Water Resources Control Board. The Board is considering the appeal. The Regional Board has promised to re-examine the issue at future hearings.	• The Council of Bay Area Resource Conservation Districts produced Horse Keeping: A Guide to Land Management for Clean Water, a manual of Best Management Practices. The focus is on conservation practices that can be used at horse facilities for site improvement and manure management. In addition, the brochure Horse Owners' Guide to Water Quality Protection and Fact Sheets continue to be distributed. • The Council of Bay Area Resource Districts, working with local Resource Conservation Districts in Alameda, Contra Costa, San Mateo, Marin, and Sonoma, have completed demonstration sites that showcase horse facility improvements for erosion control and manure management. Primary focus in outreach and education to the horse community on conservation practices at horse facilities to improve water quality. • The State Water Resources Control Board is funding an aquatic pesticide monitoring program to evaluate the toxicity of aquatic herbicides and develop permit requirements for them, possibly under the Porter Cologne Act rather than the NPDES.		



PRIORITY 6. Strengthen public awareness about the Estuary's natural resources.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
PUBLIC INVOLVEMENT AND EDUCATION 1.1 Build awareness, interest, and support in the general public and among decision-makers for the CCMP's goals and action plans.	• Educating local, state, and national decision-makers about CCMP implementation, the value of estuaries, and the need to protect them are the goals of the Association of National Estuary Program's Citizen Action Committee, in which the S.F. Estuary Project and Friends of the Estuary participate. To that end, the Estuary Project offers several educational programs through the the Friends of the San Francisco Estuary, which sponsors workshops for students and teachers and helps community groups conduct restoration projects. As a joint project with the S.F. Bay Regional Water Quality Control Board, the Friends work with inner-city students from Richmond High School—the "Richmond High Creek Keepers"—each year to provide environmental leadership opportunities and to train students to conduct hands-on restoration and public outreach. • The EPA's science advisory board is working on indicators for ecosystems nationwide that will encompass the Bay. The "Framework for Assessing and Reporting on Ecological Conditions" is intended to condense basic information about any ecosystem into a few broad categories that the general public can understand. The framework uses categories that can be applied across ecosystem types—whether a forest, rangeland, or watershed—such as landscape structure and composition.	• The S.F. Estuary Institute has designed the EcoAtlas Information System as a way for the public and all other interests to access peer-reviewed scientific data and maps about ecological conditions in the Bay Area. The EcoAtlas can be accessed on S.F.EI's web site at www.s.f.ei.org/ecoatlas/Habitat/index.html • The State of the Estuary Conference, organized every two to three years, educates the public, interest groups, agencies, and the media about the health of the Estuary and provides up-to-date information about CCMP implementation. The next conference is in October 2003. • ESTUARY newsletter is mailed bi-monthly to more than 3,000 decision-makers, scientists, and interested members of the public. • S.F. Estuary Project and Friends of the Estuary co-sponsor and regularly participate in fairs, festivals, and other events to distribute information and educate the public about CCMP implementation. • Geographic subcommittees of the CCMP Implementation Committee hold regular meetings open to the public. • Working with Richmond artist Christopher Castle, Richmond High School students recently completed a 100-foot-long mural depicting the cultural and natural history of nearby Wildcat Creek. In conjunction with the Urban Creeks Council, students have integrated the creek into their Environmental Science curriculum, as well as English and Art classes. • The Waterways Restoration Institute and the Urban Creeks Council offer an environmental education exchange program for Richmond High students each summer in which they trade places with high school students from Idaho. Each group of students learns about the other's environments—their creeks, rivers, and in Richmond's case, San Francisco Bay. The students have learned to survey creeks, monitor water quality and geomorphology, and write scientific reports about their findings • The San Francisco Bay Area Wetlands Restoration Program's Coordinator has delivered presentations to a private environmental consulting firm, four public agencies, three non-profit organizations, and one national conference audience. • The S.F. Bay Joint Venture and the Urban Creeks Council give frequent tours of restoration projects and to-be-restored sites to legislators, local politicians, and interested members of the public and decision-makers. CONTINUED NEXT PAGE	• Many non-profits doing environmental education and restoration work around the Bay have no secure source of long-term funding for operating support. • Local creek and watershed groups need consistent, ongoing funding to help them get organized, stay organized, and conduct workdays and restoration events.	• Establish a Bay-Area-wide watershed council that would offer technical support, staffing, and funding for local watershed groups and non-profits.

PRIORITY 6. Strengthen public awareness about the Estuary's natural resources.

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PUBLIC INVOLVEMENT AND EDUCATION 1.1 CONT. Build awareness, interest, and support in the general public and among decision-makers for the CCMP's goals and action plans.		• The Bay Institute is developing the Bay-Delta Ecological Scorecard, which is geared toward the general public as well as more technical audience, and decision-makers. The Scorecard uses a series of indexes, or environmental topic areas, to evaluate how well the Bay and Delta are functioning, such as habitat extent, fish, birds, invertebrates, flows, water quality, stewardship, and human uses (how fishable, swimmable, and drinkable is the water?). The Institute hopes to add other indexes, such as aquatic production, amphibians, or invasive species, in later phases of the project. Within each index, several indicators—species richness, abundance, percent of native species, and numbers of species that are tolerant of human impacts (in the bird and fish indexes), for example—are evaluated to come up with a grade, score, and trend. In addition to describing the indicators, each index also lists key findings, methods and data sources, and ecological and management implications. The Ecological Scorecard is designed to be consistent with the formats U.S. EPA and other agencies are now developing for ecological indicators nationwide. Following the release (planned for Fall 2003) of the Bay Ecological Scorecard, the Institute will evaluate the Delta and the Sacramento and San Joaquin river systems. • Project Transquest—an educational program run by the Bay Model Association—takes local students out on the water to learn firsthand just what makes the Bay worth protecting. About 250 students from fourth grade up through high school have participated in the program since it began in 2001. Participants start their adventure with interactive activities at the Bay Model, learning about pollution, invasive species, and other Bay-related topics, then head out for a three-hour adventure on one of the Angel Island Ferry boats, specially outfitted as a research vessel. Rotating between several research stations, students trawl for Bay fish, dredge for crabs and clams, collect plankton, and use an onboard microscope to see organisms up close. Students learn how human activity has changed the Bay, and how recycling, reduced pesticide and herbicide use, and organic farming help minimize the negative impacts. Program partners include the Angel Island Ferry, S.F. State University's Romberg Tiburon Center, Marin Conservation Corps, Marin County Stormwater Pollution Prevention Program (MCSTOPPP), Marine Community Foundation, Marine Mammal Center, and Aquarium of the Bay.	• The Geosciences Department at San Francisco State University is teaching urban students about the city's watersheds in a program called S.F. ROCKS, a $1.25 million, five-year grant from the National Science Foundation to attract traditionally underrepresented high school students—blacks, Latinos, and Pacific Islanders—to the geosciences. Since early 2002, S.F. ROCKS has been introduced into the science classes of about 500 ninth graders from Burton High. Twelve of those students will take part in a summer institute at S.F. State, where they will gain field experience and receive extra mentoring from geoscience professors and undergraduates from S.F. State and the City College of San Francisco. Ultimately, the project will expand to include five high schools in eastern San Francisco. • The San Jose Green Building program attempts to promote the "creation of environmentally-sound and resource-efficient buildings and homes by using an integrated approach to design." The City seeks to educate developers, architects, engineers, contractors, property owners, and residents about green building and to promote environmentally sound building practices. www.ci.san-jose.ca.us/esd/gb-home.htm • Many citizens' groups—particularly friends of creek groups—are working to restore riparian habitat and improve water quality in the creeks that drain to the Bay. See www.aoinstitute.org/creekspeak/CreeksSpeak2002-1.pdf for a list of these groups. • The San Francisco Department of Recreation and Parks supports a variety of habitat restoration groups; efforts are underway to daylight and restore the Presidio's creeks. • The Bay Institute's STRAW program (Students and Teachers Restoring a Watershed) has involved hundreds of students in riparian revegetatoin projects on agricultural land. • *Bay Nature* magazine publishes frequent articles on the health of the Bay and Delta; an upcoming issue will highlight wetland restoration, with information supplied by the S.F. Bay Joint Venture. • Both the San Francisco Chronicle and KTVU have had extensive coverage on the Bay in recent months.	

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PUBLIC INVOLVEMENT AND EDUCATION 1.2 AND 1.3 Provide and encourage opportunities for direct citizen involvement in following and implementing the	CCMP and making any necessary revisions to it • The S.F. Estuary Project has established a small grants program through an allocation from the U.S. EPA, under which local governments, citizens, and local non-profits can apply for projects that work to restore the Estuary and surrounding habitat.	• The Estuary Project awarded $111, 507 in 2002-2003 to 17 citizen and community groups and local agencies for projects that will enhance the Estuary. In 2003-2004, a similar amount will be awarded.		
PUBLIC INVOLVEMENT AND EDUCATION 1.5 Ensure provisions for a central collection and distribution point (clearinghouse) for communication and coordination of all information concerning CCMP issues and the Estuary.	• The S.F. Bay Joint Venture website (www.s.f.bayjr.org) has a "Project Planning Tools" page, a "Grants Available" page, and a project database page that lists habitat projects by subregion and placement on the map of habitat projects, as well as a project description, acreage, and contact person. The habitat projects map and database provide outreach tools to more than 200 partners and the public. • A significant amount of information about the Estuary can be found at the Regional Monitoring Program web site (www.s.f.ei.org/rmp) and the Clean Estuary Partnership Web site (www.cleanestuary.org).	• The bi-monthly ESTUARY newsletter solicits stories from and covers the activities of more than 100 different agencies, interest groups, scientific and technical research programs, and community groups. The newsletter is also published online. • A central S.F. Estuary Project public outreach office writes and distributes thousands of fact sheets, newsletters, brochures, maps, and how-to materials. This information is also available on the Estuary Project's web site. • S.F.EI's Wetlands Tracker can be updated by any user; maps of wetlands projects are available (www.wetlandtracker.org).		

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LAND USE 4.1. Educate the public about how human actions affect the Estuary. - continued	• BASMAA and BACWA have jointly sponsored the development of Public Service Announcements about the Estuary and its watershed, and about mercury pollution. • CALFED has launched a series of "Science in Action" inserts in ESTUARY and now publishes an online science journal—http://calfed.water.ca.gov/newsletter_0302.htm	• 1-888-BAYWISE is a toll-free information line funded by Bay Area water pollution prevention agencies: www.baywise.info. The line connects callers with information about water pollution prevention options (such as less toxic pesticides) and stormwater prevention options. • The Estuary Project's non-profit, arm, the Friends of the San Francisco Estuary, sponsors workshops for students and teachers and helps community groups conduct restoration projects. As a joint project with the S.F. Regional Water Quality Control Board, the Friends work with inner-city students from Richmond High School—the "Richmond High Creek Keepers"—each year to provide environmental leadership opportunities and to train students to conduct hands-on restoration and public outreach. • In October 2001, the Estuary Project sponsored a State of the Estuary Conference, focusing on the current state of Bay-Delta waters, wetlands, wildlife, watersheds, and aquatic ecosystems. In January 2003, it published Science & Strategies for Restoration, State of the Estuary 2002, an 80-page report highlighting new restoration research, exploring pressing science questions, and offering useful information for anyone working to protect California's water supplies and endangered species. The report is available on line and in hard copy. • S.F. Estuary Project regularly supplies the media with background information on the CCMP, its goals, and implementation activities. • S.F. Estuary Project conducts widespread media campaigns to educate boaters about how to prevent pollution, and prints and distributes environmental guidelines for recreational boaters along with maps of the Bay-Delta showing the location of pump-out stations.In 2002, it published new boating guides, with five to-do lists for preventing pollution, as well as maps of 77 pumpout and 29 portable toilet stations at marinas and yacht harbors around the Bay-Delta. • Working closely with the San Francisco Regional Water Quality Control Board, the Estuary Project holds several workshops each year to teach developers, builders, consultants, and municipal staffs about Best Management Practices that prevent erosion and control sediment from construction sites. CONTINUED NEXT PAGE	• Many non-profits doing environmental education and restoration work around the Bay have no secure source of long-term funding for operating support. • Local creek and watershed groups need consistent, ongoing funding to help them get organized, stay organized, and conduct workdays and restoration events. • BASMAA expects that funding from member agencies will be reduced.	

PRIORITY 6. Strengthen public awareness about the Estuary's natural resources.

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LAND USE 4.1. CONT. Educate the public about how human actions affect the Estuary.		• As part of the Delta In-Channel Island Work group, the Estuary Project is participating in demonstration restoration projects on three Delta in-channel islands—eroding remnants of the original Delta wetlands left after channels were dredged to build levees. The projects are demonstrating the benefits and habitat values of soil bioengineering/bank stabilization techniques. • CALFED and the Delta Levee Flood Protection Program funded the design and construction, and the DCI is monitoring the effectiveness of these techniques. The DCI continues to seek funds for completing an inventory of in-channel islands and for projects on other priority in-channel islands. The S.F. Estuary Project and the Department of Water Resources provide staff support for the DCI and its projects. • Close to 100 community groups around the Bay, particularly "Friends of" creek groups and watershed awareness groups, hold regular work parties and/or implement restoration and revegetation projects, encouraging grassroots citizen involvement in protecting and restoring the Estuary and its watersheds. • The Aquatic Outreach Institute publishes "Creeks Speak," a newsletter that helps network these groups, and holds over 50 workshops a year for teachers and citizens, teaching them about creeks and local watersheds, and less-toxic methods of gardening and pest control, all with the ultimate goal of improving water quality in the Bay. • Kids for the Bay is another Bay Area non-profit that works with urban elementary school children, to teach them about how their local creeks connect to the Bay. See www.aoinstitute.org/creekspeak/CreeksSpeak2002-1.pdf for a list of many of these organizations. • Save the Bay's oyster re-establishment program educates the public about a former resource that urbanization has impacted but also encourages the public to get involved hands-on in improving the Bay. • The Delta Commission sponsors many outreach activities for the public. • KTEH recently produced a series on the history of the Bay and how founding "mothers" of Save the Bay rescued the Bay from being paved over and/or dammed.		

PRIORITY 7.

Expand the regional monitoring program to address all key CCMP issues, including pollution, wetlands, watersheds, dredging, biological resources, land use and flows. Integrate the results of scientific monitoring into management and regulatory actions.

Action

RESEARCH AND MONITORING 2.1

Develop and implement the Regional Monitoring Strategy, which will integrate and expand on existing efforts, and eventually be part of a comprehensive Regional Monitoring Program.

Government & Private Initiatives

Public, private and cooperative plans, programs and good intentions

- The Wetlands Regional Monitoring Program (WRMP) released its program plan in 2002. The plan presents a scientific framework and draft monitoring protocols for the WRMP, which aims to provide the scientific understanding necessary to protect, create, restore, and enhance wetlands of the S.F. Bay region through objective and cost-effective monitoring, research, and communication. Funded projects for fiscal year 2002-2003 are being coordinated to implement each component of the WRMP; funds to WRMP members for these projects total more than $1,000,000, not including in-kind services.
- The S.F. Estuary Institute's Watershed Science Program provides Bay Area environmental managers with quality science information in the context of the whole system (watersheds, the airshed, wetlands, and S.F. Bay). The Program is helping to develop a regional picture of watershed conditions and downstream effects through a solid foundation of literature review and peer-review and the application of a range of quality science methodologies, empirical data collection, and interpretation in watersheds around the Bay Area. The Program is implementing projects in four areas: 1) water quality, sediment, and pollutant loads; 2) geomorphology, habitat analysis, and bioassessment; 3) historical landscape ecology, stream form and function, and change through time; and 4) GIS and mapping. Current projects include a watershed sediment TMDL baseline study on the Napa River; a North Bay nutrient and pathogen TMDL study; and measurement of sediment and contaminant loads from the Guadalupe River watershed. For more, seewww.s.f.ei.org/watersheds/Watershedproginfo.htm.
- The S.F. Regional Board, the Bay Area Clean Water Agencies, the Bay Area Stormwater Management Agencies Association, and other stakeholders launched the Clean Estuary Partnership, a major new scientific program that will foster a collaborative approach to TMDL development (see Priority 5). The Partnership's activities will complement Regional Monitoring Program efforts, with particular attention to the development of conceptual models linking pollutant sources, ecosystem process, and biological effects in a collaborative public process. For more, see www.cleanestuary.org.
- The CALFED Science program has funded a number of research studies pertinent to key CCMP issues under a contract with the S.F. Estuary Project/ABAG.
- CALFED Science Program has sponsored a number of workshops relating to CCMP issues through a contract with the S.F. Estuary Project/ABAG.

On-the-Ground Implementation

Examples of specific, local completed or in-progress projects

- Research Studies: Revision of CALFED Delta Smelt White Paper; the Spatial Ecology of Delta Smelt Revealed by Otolith Biogeochemistry: Effects on Population Dynamics and the Efficacy of the EWA Program; Hypoxia in the San Joaquin Deep Water Ship Channel: Mechanisms and Management Strategies Suggested by Analysis of Historical Data; Mercury Strategy for the Bay-Delta Ecosystem: A Unifying Framework for Science, Adaptive Management, and Ecological Restoration; Revision of CALFED Salmonid White Paper; An Evaluation of the State of Knowledge of the Sediment Budget of the San Francisco Bay Estuary and Watershed; Revision of the CALFED Tidal Wetlands White Paper; and Open Water Processes of the San Francisco Estuary.
- CALFED workshops include: Delta Smelt (9/4/2002); Environmental Water Account Technical Review Panel (10/22-23,2002 and 10/21-22, 2003); Mercury Workshops: "An Assessment of Ecological and Human Health Impacts of Mercury in the Bay-Delta Watershed" (9/16-17, 2002) and "Mercury Science Strategy for the Bay-Delta Ecosystem and Watershed" (10/8-9, 2002); Instream Flow Assessment Workshop (12/9-11, 2002); Planning for Hydrologic Change in California: USGS Scenarios for Delta Water Resources (2/6/2003); Performance Measures (4/23-24/2003); Science Symposium on Environmental and Ecological Effects of Proposed Long-Term Water Project Operations (6/19-20, 2003); EWA Salmonid Workshop (7/17-18,2003).
- Participants in the S.F. Bay Area Wetlands Restoration Program's Wetlands Monitoring Group have been involved in the following regional monitoring efforts:

  - Staff members from the Regional Board and the U.S. Army Corps of Engineers have been evaluating a Wetlands Rapid Assessment Process, which is, in part, a regulatory tool for rapid assessment of wetlands restoration site conditions.

  - Monitoring Group members are beginning work on the CALFED Integrated Regional Wetland Monitoring (IRWM) Pilot project. This monitoring analysis will investigate six sites among San Pablo Bay, Suisun Bay and the Delta, comparing one natural location to a restored location at each. Partners include the University of California at Berkeley, PRBO Conservation Science, the U.S. Geological Survey, Phillip Williams and Associates, the San Francisco Estuary Institute, the University of Washington, and San Francisco State University. There are six teams together for now, using a conceptual monitoring model with integrated field data. At this point, the project is envisioned as a two-year process. Questions to be answered include: What ecological output are we getting from restoration efforts?

  - Contra Costa County is initiating a new GIS-based mosquito information system. The GIS data management application that will provide information to managers and to the public on where the pests are located, where pesticides are used, where endangered species are located (so as to avoid pesticide application in those locations), and where any problematic wetlands might be located. Options for real-time use of this are creation of an entirely new data management system, piggybacking on to an existing system, combining it with information coming into the vector control districts, and/or through the Department of Health Services.

  - Work continues on the U.S. EPA's Environmental Monitoring and Assessment Program (EMAP) project, which is an U.S. EPA research program to develop the tools necessary to monitor and assess the status and trends of national wetland resources. For the past four years the program has focused on the West Coast and will continue to do so for the next two. Initially, EMAP funded intertidal sites and was then scaled up to full-size watershed analysis. Data is now being collected with a full report to come by December 30, 2003. One component was the development of a people in watersheds map, which is a new watershed map overlain with demographics, along with fragmentation and patch analysis.

  - The National Wetlands Inventory (NWI), a nationwide wetlands mapping effort, has linked up with the California Resources Agency Legacy Project and a statewide wetlands mapping effort is now underway. The San Francisco Estuary Institute is the Bay Area regional partner for the effort. The NWI mapping does not adopt a regulatory definition of wetlands, but instead provides a comprehensive map of places and hydrogeomorphic attributes of those places. Mapping of all contiguous non-baylands wetlands is forthcoming soon.

  - The California Rapid Assessment Method for wetlands (CRAM) is being developed to assess physical conditions and vegetation at all wetlands sites, be they restoration or mitigation in nature. CRAM is based on a U.S. EPA three-level approach; Level One is the GIS inventory, Level Two is the rapid assessment method, and Level Three is the intensive site-specific science needed to substantiate Levels One and Two. The California Core Team, including participants from the San Francisco Estuary Institute and U.S. EPA, Region 9, has proposed adding a Level 2.5 in an effort to make some attributes more visible, such as contaminants and birds that might be missed on site visits. There are two layers to CRAM; there is a statewide core team looking for a model for all wetland types and there are regional teams with more region-specific priorities. The core team decided not to rank wetlands in their use of CRAM, but rather to focus on assessment of condition.

  - The Bay Institute has developed an Ecological Scorecard Wetlands Index (among many other topics), which essentially tracks wetland changes over time and evaluates their current state. The wetlands index is part of the larger scorecard, which will have 8-10 regional-level indices tracking a variety of indicators. The goal is to create a habitat index that can convey habitat loss to the public and show how goals have changed since the publication of the Baylands Ecosystem Habitat Goals Report. It will also help analyze how to best account for mitigation projects in representing wetlands gains and losses.
- The San Francisquito Watershed Council's Long-Term Monitoring and Assessment Plan lays out a framework for coordinating and monitoring activities in the watershed. Three permanent monitoring stations in the lower watershed are already collecting water quality and flow data.

Current Gaps & Roadblocks

Ideas & Opportunities for Further Progress

REGIONAL MONITORING

PRIORITY 7.

Expand the regional monitoring program to address all key CCMP issues, including pollution, wetlands, watersheds, dredging, biological resources, land use and flows. Integrate the results of scientific monitoring into management and regulatory actions.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
AQUATIC RESOURCES MANAGEMENT 1.1: Refine and coordinate existing monitoring programs to 1) better evaluate ecosystem responses to immediate, phased, and long-term water quality and flow standards; 2) more fully characterize ecosystem processes and properties. - continued -		• The Regional Monitoring Program for Trace Substances in the San Francisco Estuary (RMP) continues to be the primary source of information used to evaluate chemical contamination in the Bay. • The RMP developed a simple PCB mass budget model as a first step toward understanding the long-term fate of PCBs in S.F. Bay; the model is being incorporated into the PCB TMDL that the S.F. Regional Board is developing. The RMP also investigated the trans.f.er of PAHs and PCBs between S.F. Bay (the study focused on the North Bay) and the atmosphere. Finally, a surveillance component for emerging contaminants was added to the RMP to allow for more proactive management of S.F. Bay contamination. Chemicals of concern include antioxidants (butylated hydroxytoluene and butylated hydroxyanisole), flame retardants (polybrominated diphenyl ethers), detergent ingredients (nonylphenol and alkylbenzenes), constituents of plastics (phthalates), and musk compounds (musk ketone, galaxolide, and versalide). In 2002, these chemicals were included in the RMP analyte list to investigate their occurrence in recent samples. Those chemicals that are found at levels of concern will continue to be measured in annual RMP sampling. As emerging contaminants are identified in the RMP, the S.F. Regional Board will enlist the assistance of stakeholders to find the best ways of reducing or eliminating those that are a threat to the health of humans and wildlife. • The CALFED Science Program Integrated Regional Wetland Monitoring Pilot Project will examine how ecosystem restoration efforts are affecting ecosystem processes at different scales by comparing a restored and a natural tidal marsh in each of three locations: San Pablo Bay, Suisun Bay, and the Delta. The project, which runs from fall 2003 to 2005, will also seek to develop suitable field and analytical protocols for wetland restoration projects throughout the region. Led by Wetlands and Water Resources, the project team also includes the Point Reyes Bird Observatory, San Francisco State University, the Romberg Tiburon Center, the U.S. Geological Survey, U.C. Berkeley, U.C. Davis, University of Washington, the S.F. Estuary Institute, and Philip Williams and Associates. CONTINUED NEXT PAGE	• The Surface Water Ambient Monitoring Program (SWAMP) is a statewide monitoring effort begun in 2000 and designed to assess the conditions of surface waters throughout the state of California. Under this program, the S.F. Regional Board is measuring water quality indicators in the S.F. Bay region's creeks, lakes, reservoirs, and bays (i.e., watershed monitoring). In 2003, SWAMP's funding was cut by 90%, and the program's future is uncertain. The S.F. Regional Board is exploring alternative methods for funding the local program.	

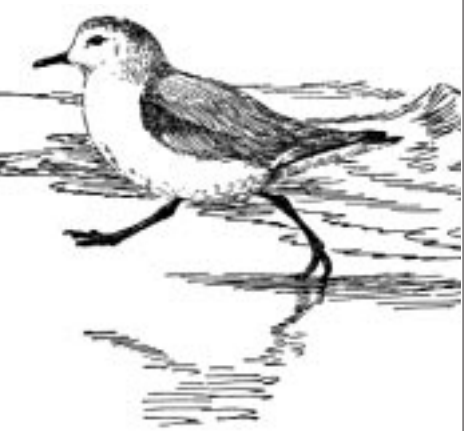
PRIORITY 7.

EXPAND THE REGIONAL MONITORING PROGRAM TO ADDRESS ALL KEY CCMP ISSUES, INCLUDING POLLUTION, WETLANDS, WATERSHEDS, DREDGING, BIOLOGICAL RESOURCES, LAND USE AND FLOWS. INTEGRATE THE RESULTS OF SCIENTIFIC MONITORING INTO MANAGEMENT AND REGULATORY ACTIONS.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
AQUATIC RESOURCES MANAGEMENT 1.1: CONT. Refine and coordinate existing monitoring programs to 1) better evaluate ecosystem responses to immediate, phased, and long-term water quality and flow standards; 2) more fully characterize ecosystem processes and properties.		• The Dugdale/Wilkerson laboratory has been sampling the central S.F. Baysince 1997. Physical (conductivity, temperature, and depth), chemical (nitrate, silicate, ammonium), and chlorophyll have been measured. This information will provide a baseline for further research focused on changes taking place in S.F. Bay. Scientists at the Romberg Tiburon Center are completing an EPA STAR-funded indicators project that sampled Suisin, San Pablo, and Central bays for physical, chemical, and biological parameters,including zooplankton egg production, larval herring biometrics, benthic invertebrate condition, and proteonomic data of benthic clams. • The Environmental Monitoring Program (EMP), initiated in 1971, continues to monitor water quality conditions and sediment composition, as well as phytoplankton, zooplankton, and benthos abundance and distribution, in the Sacramento-San Joaquin Delta, Suisun Bay, and San Pablo Bay. The EMP is carried out under the auspices of the California Interagency Ecological Program (IEP) by the Department of Water Resources and BurRec, with assistance from California Fish & Game and the U.S. Geological Survey. • The U.S. Geological Survey Bay/Delta Hydrodynamics Project is conducting monitoring aimed at determining the magnitude and location of variations in hydrodynamics (water currents and salinity) within S.F. Bay that result from changes in freshwater inflows from the Sacramento-San Joaquin Delta. The project is also measuring flows in Delta channels and working to understand the factors, such as state and federal water projects' pumping operations, causing flow variations. A significant project accomplishment is the measurement of net outflow from the Delta. The project has become an operational monitoring program with significant implications for modeling flows, salinity, sediment transport, and fish movements into, out of, and within the Delta. The project is operated by scientists from the Geological Survey and is closely integrated with a number of projects at other agencies and organizations. • See Aquatic Resources 2.3.		

PRIORITY 8. Promulgate baseline inflow standards for San Francisco, San Pablo and Suisun Bays to protect and restore the Estuary.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
AQUATIC RESOURCES MANAGEMENT 4.1 Adopt water quality and flow standards and operational requirements designed to halt and reverse the decline of indigenous and desirable non-indigenous estuarine biota.	• New requirements for baseline flows have been met in all years since they were adopted.			
AQUATIC RESOURCES MANAGEMENT 5.1 Identify alternative long-term water quality and flow standards, water management measures, operational changes, habitat improvements and facilities as needed to manage estuarine aquatic resources (including water) for optimum benefit. - continued -	• The Department of Water Resources is updating its Bulletin 160: California Water Plan, which addresses, among many other topics, Bay-Delta flow-related issues and the growth-inducing aspects of water supply. The planning process surrounding the update could result in significant management decisions on changing flows or reoperating the State Water Project/Central Valley Project. • The Vernalis Adaptive Management Plan (VAMP), implemented under the San Joaquin River Agreement, conducted its third year of experimental investigation into juvenile chinook salmon survival within the Delta. The Vernalis target flow was 3,200 cfs, with State Water Project and Central Valley Project export flow of 1,500 cfs. The Head of Old River Barrier (HORB) was success.f.ully installed and maintained throughout the VAMP test period. While estimates of salmon survival rates under flow and export conditions tested in 2000, 2001, and 2002 were not significantly different, the VAMP program provides improved protection for juvenile salmon and other species when compared to "pre-VAMP" conditions. Moreover, substantial flow augmentations and export reductions have been achieved, and progress has been made toward better coordinating upstream and downstream salmon restoration actions and the variety of water management issues that affect them. Without the level of commitment to the program by local, state, and federal agencies, it would not be success.f.ul. For more, see www.sjrg.org. • The federal government has issued *Water 2025*, a report intended to prevent further crises and conflicts over water in California. The report warns that the Sacramento-San Joaquin Delta is "highly likely" to experience conflict over water needs in the future. See www.doi.gov/water2025/ptt.html. CONTINUED NEXT PAGE	• The VAMP is a cooperative multi-agency and local partnership to test the relationship between San Joaquin River flow, HORB operation, SWP/CVP export operation, and survival of juvenile chinook salmon. The experiment is carefully orchestrated each spring to coordinate tributary operations, the installation of the HORB, export operations, and the release and recovery of up to 400,000 test fish.	• Further tests are needed to evaluate the respective roles of San Joaquin River flow, Head of Old River barrier, and SWP/CVP exports on juvenile chinook salmon smolt survival. Until a year wetter than the last three years occurs, the commitment to test reduced exports at flows that exceed those that are compatible with installation and operation of the Head of Old River barrier is unknown. However, it is anticipated that Environmental Water Account and B2 management agencies intend to apply those tools to ensure that each year adds data to VAMP-type studies. The conditions that allow the barrier to be in place limit the size of flows the channel can accommodate, and therefore tests with and without the barrier must be done at different flow regimes. The principal water operational components for the VAMP include increased releases from San Joaquin River reservoirs and decreased exports from the S.F. Estuary. The ability of both the state and federal projects to accomplish the VAMP's export reduction objectives is threatened. On the federal side, legal rulings in the district court and the Department of the Interior's new policies have diminished the amount of B2 fish actions on average by about one-third. The state and the Department of the Interior acquire water to accomplish the VAMP upstream objectives, and may use available B2 and/or EWA water to accomplish the VAMP Delta objectives, but less B2 water would then be available for other actions to protect and restore anadromous and estuarine fish. Export reductions on the state side are dependent on funding of CALFED's Environmental Water Account. This funding is currently available on a year-to-year basis, and its continuance is uncertain. The annual process for finding this funding is subject to the political process. There is concern that using public funds to acquire water has set a precedent for using public funds to pay for restoration actions that should instead be funded by water users.	• VAMP partners are developing the program's adaptive nature and exploring greater flexibility in the HORB installation to meet variability in fish migration patterns. The VAMP has also spawned a number of studies aimed at gaining a more comprehensive view of the ecological problems of the lower San Joaquin River and the Delta.



PRIORITY 8. Promulgate baseline inflow standards for San Francisco, San Pablo and Suisun Bays to protect and restore the Estuary.

Action

AQUATIC RESOURCES MANAGEMENT 5.1 CONT.

Identify alternative long-term water quality and flow standards, water management measures, operational changes, habitat improvements and facilities as needed to manage estuarine aquatic resources (including water) for optimum benefit.

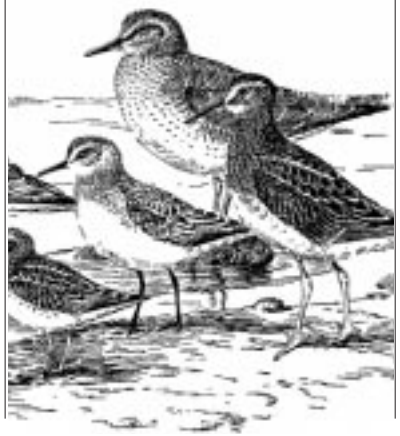
Government & Private Initiatives

Public, private and cooperative plans, programs and good intentions

- The South Delta Improvement Project (SDIP), jointly proposed by the Department of Water Resources and BurRec and overseen by CALFED, aims to incrementally maximize diversion capability into Clifton Court Forebay, while providing an adequate water supply for diverters within the SDWA and reducing the effects of State Water Project exports on both aquatic resources and direct losses of fish in the South Delta. The project is seeking operational configuration of 8,500 cfs into Clifton Court Forebay, with permanent operable barriers at the Head of Old River, on Middle River at Tracy Road, on Old River near the Tracy BurRec Pumping Plant, and at the west end of Grantline Canal. The barrier at the Head of Old River is intended to protect San Joaquin River salmon and to help increase the dissolved oxygen on the San Joaquin River in the vicinity of Stockton during low flow periods, while the other barriers are intended to protect the stage and water quality for South Delta agricultural water users. A draft EIR/EIS will be released in September 2003.
- The San Ramon Valley Recycled Water Program (led by the Dublin San Ramon Services District-East Bay Municipal Utility District Recycled Water Authority in partnership with the Army Corps) will provide recycled water to irrigate landscapes in Blackhawk, Danville, Dublin, and San Ramon. First deliveries are projected for spring 2005, with final build-out, which could yield as much as 6,420 acre-feet per year, to follow.
- Under the Delta Pumping Plant Fish Protection Agreement (Four Pumps Agreement) between the Department of Water Resources and Cal Fish & Game to offset direct fish losses at the Harvey O. Banks Pumping Plant, approximately $49 million has been approved since 1986 for striped bass, salmon, and steelhead mitigation projects. Approximately $36 million of approved funds have been expended to date, with the remaining funds allocated for new or longer-term projects.
- Several collaborative and interdisciplinary studies were conducted on the Delta Cross Channel (DCC) during 2000 and 2001 with the aim of better understanding the influence DCC operations have on hydrodynamics, water quality, and fish passage. Based on these studies, it is now thought that salmon entrainment into the DCC largely depends on the flow field the fish encounter at the time of arrival and the behavior of the fish that controls when they arrive. Studies will be conducted again in the falls of 2003 and 2004. Results from these studies will help to determine optimal DCC operations to ensure water supply reliability with minimal effects to water quality and fish migration.

On-the-Ground Implementation

Examples of specific, local completed or in-progress projects



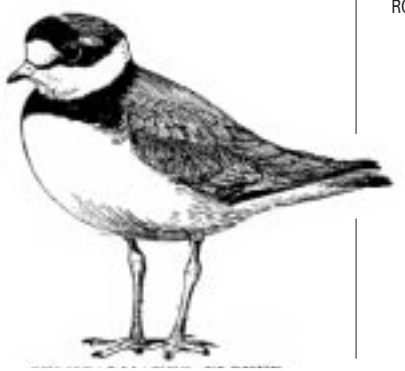
Current Gaps & Roadblocks

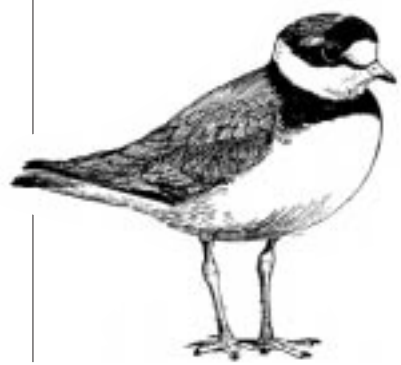
- After completing a multi-year baseline monitoring program in Coyote Creek, the Coyote Creek Streamflow Augmentation Pilot Project was put on indefinite hold because of challenges encountered in implementation, including temperature control costs, facility siting, groundwater concerns, and permitting. The Project's future is uncertain; if it is revived, significant work with the Santa Clara Valley Water District and changes to the previous plan will be required.
- Construction of the Tracy Fish Test Facility (TFTF) near Byron, Calif., was to have begun in 2003, but the unanticipated high cost of building the facility has delayed the project. The project is currently being reviewed by the agencies involved, and the earliest projected construction date is now 2005. The TFTF is intended to develop and implement new fish collection, holding, transport, and release technology aimed at significantly improving fish protection at the major water diversions in the south Delta.
- DCC studies have been hampered by the reluctance of the water projects to allow DCC operations under conditions that might force them to reduce exports or increase flows to avoid violating Delta standards and by the reluctance of fish agencies to use limited "environmental water" for experiments unless operations during the experiment will also provide benefits to fish.
- Under a January 2003 ruling by the Department of the Interior, California must reduce its use of Colorado River water by 13%, which could lead to further diversions south through the Delta and to reduced flows in rivers and waterways connected to the Delta and to reduced freshwater inflow to the S.F. Estuary. To help mitigate any potential adverse effects on the Estuary, the Metropolitan Water District of Southern California plans to adjust to any reduction in available Colorado River supply in part by increasing investments in local resources. To the extent additional water is required through the State Water Project system, it would be made available through wet-period banking and the voluntary purchase of conserved dry-year water from willing sellers in Northern California.

Ideas & Opportunities for Further Progress

PRIORITY 8. Promulgate baseline inflow standards for San Francisco, San Pablo and Suisun Bays to protect and restore the Estuary.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
AQUATIC RESOURCES MANAGEMENT 5.2 Develop an EIS/EIR to display the alternatives and tradeoffs identified in Action AR 5.1 and to initiate the selection of a preferred alternative.				
AQUATIC RESOURCES MANAGEMENT 5.3 Implement the alternative from Action AR 5.2 (including the adoption of long-term water quality and flow standards and operational requirements) that best optimizes conditions for aquatic resources, efficiently conserves scarce water resources and restores an equitable balance to the estuarine ecosystem. - continued -	• The CALFED Bay-Delta Program includes the Environmental Water Account (EWA), which began implementation in the winter of 2001. The EWA allows fisheries agencies to call for reductions in State Water Project and Central Valley Project pumping in order to contribute to the protection, restoration, and recovery of fish. The EWA buys water from willing sellers or diverts surplus water when safe for fish to replace water project supplies interrupted by export reductions undertaken to protect fish. Over the past two years, the EWA provided over 530,000 af of export reductions at critical times for fish and, at a cost of about $90 million, obtained water to replace project water supplies. The EWA provided protection to Delta fish species consistent with the levels expected by the CALFED ROD. It also provided water users with water supply reliability through the CALFED agencies' commitment that actions to protect listed species would not cost additional water. In 2002, the EWA purchased additional water supplies beyond those required under the CALFED ROD to help mitigate the loss of Central Valley Project Improvement Act B2 fish actions due to recent court decisions. A draft EIR/EIS for future EWA implementation has been released. A ROD is expected in 2004.	• Use of recycled water around the Bay has greatly increased. Today, about 20 million gallons of recycled water are used per day. • CALFED's Environmental Water Program (EWP) has begun efforts to acquire water from willing sellers on streams tributary to the Sacramento-San Joaquin River Delta in order to improve instream conditions. Fish & Wildlife, the National Marine Fisheries Service, and Cal Fish & Game, with oversight from CALFED, are implementing the EWP. The program will initially focus on five streams deemed to have the highest potential for success: Butte, Clear, Deer, and Mill creeks and the Tuolumne River. Acquisitions will be designed to test hypotheses regarding water management in a manner that facilitates learning through adaptive management and includes detailed monitoring; acquisitions will be peer reviewed by an independent science panel prior to approval. Teams that include local stakeholders, local agency representatives, scientists, and agency representatives will manage the process for designing and monitoring water acquisitions and identifying willing sellers. • CALFED's Water Management Program allocated approximately $200 million from Prop. 13 and other sources to local agencies for water supply, water quality, and water use efficiency projects throughout the state. The program also 1) initiated or continued planning studies for five surface storage projects: Shasta enlargement, Sites Reservoir, in-Delta storage, Los Vaqueros expansion, and upper San Joaquin storage; 2) completed 16 memoranda of understanding or letters of intent with 30 local agencies throughout the state to study groundwater storage improvements; 3) implemented state and federal dry-year programs that provided nearly 300,000 acre-feet to areas suffering from water shortages; and 4) developed and implemented a comprehensive operations plan to coordinate actions and improve water supply reliability. CONTINUED NEXT PAGE	• Implementation and use of the EWA are controversial. During the EWA implementation process, CALFED agencies have worked collaboratively to modify the EWA consistent with the CALFED ROD's concept of functional equivalency. In addition to assets (water) to be acquired annually, the ROD anticipated that 200,000 af of groundwater would be deposited ("endowed") to the EWA at the program's outset, but this water has not yet been acquired. Accordingly, in 2002, the State Water Project agreed to carry up to 100,000 af of EWA debt, as the "functional equivalent" of the portion of the 200,000 af of groundwater that should have been available that year. The EWA was expected to acquire (via purchase and variable water management tools) an average of 380,000 af of water each year, but in each of its first two years, it only acquired and used about 300,000 af/yr. While the EWA has purchased the quantity of water identified in the ROD, the variable EWA water management tools have not produced as much water as was expected. Annual fish actions implemented using EWA water have not used all of each year's EWA water, and that water has been carried forward from one year to the next. The EWA may end 2003 100,000 af in debt, which it would have to pay back in 2004. EWA funding has not reached the recommended level, nor is there a dedicated, long-term funding source for this program. • There is debate as to whether the EWP is meeting this CCMP priority. The EWP's purpose is limited to acquisitions in upstream tributaries to improve salmon spawning and rearing conditions. The downstream fate of these water acquisitions is unclear, and, in any case, is not intended by CALFED to improve baseline habitat conditions in Suisun, San Pablo, and San Francisco bays. EWP activities will be coordinated with acquisitions for EWA and with CVPIA environmental restoration programs.	• The CALFED agencies will decide at the end of 2003 how the program will be implemented for the following four years.





PRIORITY 8. Promulgate baseline inflow standards for San Francisco, San Pablo and Suisun Bays to protect and restore the Estuary.

Action

AQUATIC RESOURCES MANAGEMENT 5.3
CONT

Implement the alternative from Action AR 5.2 (including the adoption of long-term water quality and flow standards and operational requirements) that best optimizes conditions for aquatic resources, efficiently conserves scarce water resources and restores an equitable balance to the estuarine ecosystem.

Government & Private Initiatives

Public, private and cooperative plans, programs and good intentions

On-the-Ground Implementation

Examples of specific, local completed or in-progress projects

- CALFED's Water Use Efficiency Program awarded $13.3 million in water conservation grants and loans in 2001 for 65 geographically diverse projects—including 37 urban and 28 agricultural projects. Matching local funds added over $9.1 million to these projects, which will collectively save 30,000 acre-feet of water, improve water quality, and save energy. The program also established 60 out of 200 quantifiable objectives for agricultural water use efficiency actions and success.f.ully negotiated a cooperative agreement with the Agricultural Water Management Council, BurRec, and the Department of Water Resources to support locally cost-effective agricultural water conservation.
- CALFED's Water Trans.f.ers Program 1) facilitated the Department of Water Resources' implementation of state and federal dry-year programs that provided nearly 300,000 acre-feet to areas suffering from water shortage; 2) launched the "On Tap" web site (http://ontap.ca.gov/), a water market information resource for water trans.f.ers; 3) convened a stakeholder panel and drafted recommendations to streamline the trans.f.er process; and 4) initiated technical review of "carriage water" requirements governing the trans.f.er of water through the Bay-Delta. The program is now working to define trans.f.erable water and carriage water requirements.

Current Gaps & Roadblocks

Ideas & Opportunities for Further Progress

PRIORITY 8. Promulgate baseline inflow standards for San Francisco, San Pablo and Suisun Bays to protect and restore the Estuary.

Action

AQUATIC RESOURCES MANAGEMENT 6.1

Provide necessary instream flows and temperatures to benefit salmon and steelhead in the Central Valley to support the implementation of the state and federal mandates to double the natural production of anadromous fishes.

Government & Private Initiatives

Public, private and cooperative plans, programs and good intentions

- EWA and B2 water provided some benefit to instream flows over the past two to three years.
- The Fisheries and Aquatic Habitat Management and Restoration Plan for the Lower American River (FISH Plan) is one element of the River Corridor Management Plan (RCMP) for the Lower American River endorsed in 2002. The FISH Plan constitutes a single blueprint for enhancement of five priority LAR fish species, including Chinook salmon and steelhead, and instream habitat. Improvement of conditions for these species will likely protect or enhance conditions for other LAR fish, including native resident species.
- Since 1999, the Water Forum, in conjunction with Reclamation, the U.S. Fish and Wildlife Service, and other agencies, has been working toward an updated and improved Flow Management Standard (FMS) for the Lower American River (LAR) to be presented to the SWRCB in late 2004. The overall objective of an FMS is to improve the pattern of fishery flow releases from Folsom Reservoir for the LAR, consistent with CVPIA provisions. The FMS will have three elements:

  1. Flow Element: Improve the regulatory baseline for the LAR to account for appropriate minimum flow, water temperature, ramping rate, and flow fluctuation criteria.

  2. River Management Element: Establish a river management process for Folsom Reservoir and LAR operations to implement the FMS, document management decisions made and the results of those decisions.

  3. Monitoring and Reporting Element: Collect, organize, and report data and information to resource managers to report on hydrologic and biologic conditions.

On-the-Ground Implementation

Examples of specific, local completed or in-progress projects

- Of the 28 actions in the FISH Plan's three-year action plan, 8 actions are either completed or underway, 11 actions are in the plan development stage (i.e., designs or studies to implement the actions are being conducted), and 9 actions are not started or on hold, primarily due to staffing and funding constraints. The FISH Plan is available on the Water Forum's web site (www.waterforum.org).

  Specific examples include:

  1. The FISH Working Group meets on a quarterly basis to track and guide implementation of the FISH Plan.

  2. The Lower American River (LAR) Flow Fluctuation Function Analysis Workshop (sponsored by Reclamation, the Water Forum, and SAFCA) was held August 12-16, 2002. The objective of the workshop was to identify measures and opportunities to minimize substantial flow fluctuation occurrences on the LAR and mitigate impacts with a balanced approach to address the needs of all stakeholders. The workshop resulted in 23 proposals. Recommendations focused on dam operation criteria, physical changes to minimize fish stranding, and weather forecast-based decision-making.

  3. The U.S. Bureau of Reclamation sponsors an informal group of professionals from various federal, state, local, and private sector agencies called the American River Operations Group (AROG). AROG's goals are to manage: (1) Folsom Reservoir and water storage, (2) the Folsom Reservoir coldwater pool and (3) the temperature control shutters on the Folsom Dam. The AROG provides its conclusions regarding the most favorable operations for American River fisheries (within other constraints) to management in Reclamation and the US.F.WS.

  4. A Temperature Control Device for the Folsom Dam M&I intake was constructed and put into operation in mid 2003.
- The updated flow standard for the lower American River is being developed and a draft will be available in late 2003. Hydrologic models have been run and meetings with affected stakeholders have and continue to take place during its development.
- A two-day monitoring workshop sponsored by the Water Forum was conducted in July 2003. The purpose of the workshop was to develop the monitoring program for the lower American River that will be a part of an updated flow standard for the American River.

Current Gaps & Roadblocks

- EWA water can only be used on streams and rivers where EWA has acquired water, while B2 water can only be used on CVP streams and rivers, although there may be some opportunities for water exchange, which could affect flows on other streams and rivers. With the new B2 accounting rules, less B2 water may be available for flow enhancement.
- Fluctuating flow resulting from flood control operations in the American River in February 2003 caused a substantial dewatering of redds, or egg nests, of steelhead trout and mortality (stranding) of fall-run chinook salmon. In 2001, there was an estimated 80% pre-spawning mortality of American River fall-run chinook salmon due to a lack of cold water in the lower American River. Folsom Reservoir is cold-water-supply limited. Improvements to the outdated temperature control shutters at the reservoir have been suggested and should be implemented. A new flow standard should incorporate temperature requirements for specific locations in the American River.
- After years of lawsuits, the Friant Water Users Authority (FWUA) and a coalition of 15 environmental and fishing groups led by the Natural Resources Defense Council (NRDC) agreed in 1999 to stay the litigation and explore a consensus restoration plan for the portion of the San Joaquin River made dry by the Friant Dam. Since then, the FWUA and the NRDC have conducted joint experimental restoration projects and completed several scientific studies, along with a draft Restoration Strategies Report, which outlines three separate alternatives for restoring the San Joaquin River. In April 2003, a mediator's final settlement proposal--the culmination of nearly four years of settlement discussions--was accepted by the NRDC coalition, but rejected by FWUA. The parties have now resumed active litigation. It is unclear whether next steps on San Joaquin River restoration will be determined through a consensus process or by court order.

Ideas & Opportunities for Further Progress

- Folsom Reservoir is cold-water-supply limited. Improvements to the outdated temperature control shutters at the reservoir have been suggested and should be implemented. A new flow standard should incorporate temperature requirements for specific locations in the American River.

PRIORITY 8. Promulgate baseline inflow standards for San Francisco, San Pablo and Suisun Bays to protect and restore the Estuary.

Action	Government & Private Initiatives Public, private and cooperative plans, programs and good intentions	On-the-Ground Implementation Examples of specific, local completed or in-progress projects	Current Gaps & Roadblocks	Ideas & Opportunities for Further Progress
AQUATIC RESOURCES MANAGEMENT 6.2 Implement the Upper Sacramento River Management Plan.	• The Sacramento San Joaquin Rivers Comprehensive Study produced its "Interim Report"--a process document that sets forth guiding principles and an approach to developing flood management and ecosystem restoration projects within the Comprehensive Study area that ensures system-wide effects are evaluated regardless of project scale--in December 2002. Army Corps headquarters is now reviewing the report.	• Meanwhile, two projects identified during the Comprehensive Study have advanced to the feasibility level: • The Enhanced Flood Response and Emergency Preparedness (EFREP) Feasibility Study, which identifies flood response and emergency preparedness problems and potential solutions in the Sacramento and San Joaquin river basins; and, • Hamilton City Flood Damage Reduction and Ecosystem Restoration Feasibility Study, which is developing an array of alternatives that combine flood damage reduction and ecosystem restoration near the small town of Hamilton City on the Sacramento River.		• Several local and regional groups have formed to coordinate with the Comprehensive Study and others in order to pursue projects in their areas. Potential large regional projects include the Lower Sacramento and Yuba-Feather river regions and the Lower San Joaquin River basin.
AQUATIC RESOURCES MANAGEMENT 6.3 Develop and implement the San Joaquin River Management Plan to identify reservoir operational changes, habitat improvement measures, and other action items to improve habitat and health of the aquatic ecosystem in the San Joaquin River watershed.	• The Sacramento San Joaquin Rivers Comprehensive Study produced its "Interim Report"--a process document that sets forth guiding principles and an approach to developing flood management and ecosystem restoration projects within the Comprehensive Study area that ensures system-wide effects are evaluated regardless of project scale--in December 2002. Army Corps headquarters is now reviewing the report.		• There is a proposal for increased storage on Millerton Dam.	

THE GRADES

	FULL	SUBSTANTIVE	MODERATE	SOME	NEGLIGIBLE	UNKNOWN
WETLANDS		WM 1.1 Prepare regional wetlands management plans WM 4.1 Restore and acquire non-wetland areas to wetlands	WM 2.1.3 Establish implementation program wetland policies.	WL 2.2 Enhance biodiversity		
EXOTIC SPECIES		AR 2.4 Educate the public about exotics	AR 2.1 Implement ballast water regulations AR 2.3 Control problem exotics	AR 2.2 Prohibit exotic species introduction WL 3.1 Implement predator control programs		
WATERSHED MANAGMENT		LU 3.1 Prepare and implement watershed management plans		LU 1.1 Incorporate watershed protection in local general plans		
ECONOMIC INCENTIVES				LU 2.1 Consistent local government policies LU 5.2 Develop new funding mechanisms LU 5.3 Create market-based incentives	LU 1.3 State land use integration LU 5.1 Create economic incentives for local government.	
RUNOFF		PP 2.5 Control measures for transportation pollution PP 2.1 Pursue a mass emissions strategy	PP 2.4 Improve urban runoff management PP 2.6 Control agricultural sources of toxics			

Rating Notes

UNKNOWN Unknown (research incomplete) or no longer applicable.
NEGLIGIBLE No or negligible or peripheral progress.
SOME Minimal progress (up to 25%).
MODERATE Fair level of progress, clear strides ahead (25-50%).
SUBSTANTIVE Major progress (50-75%).
FULL Full implementation completed or on the horizon (75-100%).

The ratings given to each action in this summary and in the *CCMP Workbook* were added as a rough, ballpark evaluation of the level of implementation progress. This evaluation sought to measure how items listed as progress in the workbook stacked up against the specific language and intent of the CCMP. In some cases therefore, there may be many items listed in the workbook but a low implementation rating (because of their peripheral nature to the intended action).

THE GRADES

	FULL	SUBSTANTIVE	MODERATE	SOME	NEGLIGIBLE	UNKNOWN
ESTUARY EDUCATION	PI 1.5 Provide a central clearing house for Estuary information.	PI 1.1 Build CCMP awareness PI 1.2 and 1.3 Opportunities for citizen involvement LU 4.1 Educate the public about human effects				
REGIONAL MONITORING		RM 2.1 Develop regional monitoring strategy AR 1.1 Coordinate existing monitoring programs				
INFLOW STANDARDS		AR 5.1 Identify long-term water quality and flow standards and measures	AR 4.1 Adopt water quality and flow standards AR 6.1 Provide instream flows and temperatures for Central Valley salmon	AR 5.3 Implement flow and management alternatives AR 6.2 Implement upper Sacramento River plan AR 6.3 Develop the San Joaquin River plan		AR 5.2 Develop EIS/EIR on flow and management alternatives
TOTALS						

Report Card Team

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