



ENVIRONMENTAL
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State Wetland Protection

Status, Trends, & Model Approaches

*A 50-state study by the
Environmental Law Institute*

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U.S. Environmental Protection Agency*

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Appendix: State Profiles

California

I. Overview

Historically, wetlands of diverse types, including coastal and inland wetlands and vernal pools, covered an estimated five million acres in California. However, by the mid-1980's California had less than 450,000 acres of wetlands, a decrease of approximately 90 percent.¹ Today, the majority of these wetlands, about 300,000 acres, are located in the Central Valley. Only five percent of the state's coastal wetlands remain.²

To protect these valuable resources, the state has passed numerous laws that pertain to wetlands and many state agencies play a role. The state relies on the Clean Water Act (CWA) §401 water quality certification for regulating dredged or fill material discharges to wetlands, and additional laws have been enacted to provide further protection for wetlands in coastal counties and the San Francisco Bay area. In addition to the various state agencies involved, regional and local agencies also regulate wetlands. Thus, there are multiple overlapping jurisdictions in regards to wetlands protection and management in California. In order to provide an overarching legal mechanism for the protection of wetlands in the state, the Governor of California created the State Wetland Conservation Policy in 1993. This policy calls for agencies to work together to ensure no net loss of wetlands in the state.³

II. Regulatory Programs

Wetland definitions and delineation

California's Porter-Cologne Water Quality Control Act (WQCA) defines "waters of the state" as "any surface water or groundwater, including saline waters, within the boundaries of the state."⁴

Wetlands are defined in various laws and regulations. Coastal wetlands are defined in California's Coastal Act (CCA) of 1976 as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."⁵ The California Coastal Commission ("Coastal Commission") provides a more specific definition for coastal wetlands in its regulations:

land where the water table is at near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent drastic fluctuations of surface water levels, wave action, water flow, turbidity or high

¹ Thomas E. Dahl, U.S. Fish and Wildlife Service, *Wetlands Losses in the United States 1780's to 1980's, Summary of Findings 1780's to 1980's*, at <http://www.npwrc.usgs.gov/resource/wetlands/wetloss/findings.htm> (last modified Aug. 3, 2006).

² California Wetlands Information System, *California's Valuable Wetlands*, at <http://ceres.ca.gov/wetlands/introduction/values.html> (last modified Aug. 13, 1998).

³ Office of the California Governor, *Executive Order W- 59-93 California Wetlands Conservation Policy* (1993), at <http://ceres.ca.gov/wetlands/policies/governor.html>.

⁴ CAL. WATER CODE § 13050(e).

⁵ CAL. PUB. RES. CODE § 30121.

concentration of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some during each year and their location within, or adjacent to vegetated wetland or deepwater habitats.⁶

The Keene-Nejedly California Wetlands Preservation Act (WPA) defines wetlands similarly to the CCA. Wetlands are defined as “lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools.”⁷

Although the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB) have authority to develop wetland delineation criteria for their regions, they typically do not perform delineations. For §401 water quality certifications, the boards mainly rely on the U.S. Army Corps of Engineers’ (“Corps”) or consultants’ delineations.⁸ When delineations are conducted by the state, they vary from region to region. Some regions use the Corps’ 1987 *Wetlands Delineation Manual*⁹ for all wetlands within their regions, while other regions use the 87 Manual only for wetlands within the Corps jurisdiction and adopt stricter criteria outside these areas.^{10,11} The Coastal Commission uses its own wetlands definition¹² when delineating coastal wetlands, as well as information on hydrophytes from the U.S. Fish and Wildlife Service (FWS) and information on soils from the Natural Resources Conservation Service (NRCS). However, the Coastal Commission also refers to the 87 Manual for delineation methods and parameters.¹³

Wetland-related laws and regulations

California relies primarily on §401 water quality certification and the WQCA to regulate wetlands statewide, but also has adopted laws and regulations directed at regional and/or coastal wetlands protection: the CCA, the McAteer-Petris Act, WPA, and the Suisan Marsh Protection Act.

*Porter-Cologne Water Quality Control Act.*¹⁴ The 1969 WQCA is the primary legislation guiding water quality protection in California and incorporates parts of the CWA such as National Pollutant Discharge Elimination System permit requirements and §401 water quality certification. The Act also includes water quality standards and sets the state’s antidegradation policy. Although it does not define wetlands, the Act applies to all waters of the state, which

⁶ CAL. CODE REGS. tit. 14, § 13577.

⁷ CAL. FISH & GAME CODE § 2785.

⁸ Personal communication with Glenda Marsh, State Water Res. Control Bd. (Dec. 7, 2006).

⁹ U.S. ARMY CORPS OF ENGINEERS, WETLANDS RESEARCH PROGRAM TECHNICAL REPORT Y-87-1, CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987), available at <http://www.mvn.usace.army.mil/ops/regulatory/wlman87.pdf>.

¹⁰ Personal communication with John Short, N. Cent. Reg’l Water Quality Control Bd. (Region 1) (Nov. 29, 2006).

¹¹ Personal communication with Chiara Clemente, San Diego Reg’l Water Quality Control Bd. (Region 9) (Dec. 4, 2006).

¹² For the Corps to delineate a wetland, it must meet criteria related to hydrology, soils, and vegetation, whereas wetlands only need to meet one of these criteria to be considered a wetland under the Coastal Commission’s wetlands definition. Personal communication with Charles Lester, Cal Coastal Comm’n (Dec. 6, 2006).

¹³ *Id.*

¹⁴ CAL. WATER CODE § 13050(e).

includes wetlands and isolated waters.¹⁵ The Act also establishes the SWRCB as the state water quality planning and control agency¹⁶ and gives authority to nine, semi-autonomous RWQCBs to carry out water quality planning and control activities within their regions.¹⁷

*McAteer-Petris Act.*¹⁸ In response to “uncoordinated, haphazard filling” of the San Francisco Bay, the California legislature passed the McAteer-Petris Act in 1965. This Act established the San Francisco Bay Conservation and Development Commission (BCDC) as the management and regulatory agency for the San Francisco Bay and Delta.¹⁹ The BCDC plans for and protects the San Francisco Bay’s resources, including wetlands. The Act gives the Commission jurisdiction over all tidal areas of the Bay including sloughs, marshlands, and submerged lands, the shoreline of the Bay up to 100 feet inland, salt ponds, managed wetlands,²⁰ and additional areas subject to tidal action.²¹ BCDC is required to regulate tidal wetlands and waters of the San Francisco Bay through a permitting system.²² Activities requiring a permit include fill, materials extraction, and substantial changes to use of waters, lands, or structures.²³ This Act also requires that the BCDC include conditions for minimizing impacts to wetlands and offsetting unavoidable impacts. The BCDC issues four types of permits: major, administrative, emergency, and regionwide permits.²⁴ In 2005, BCDC issued eight major permits, 57 minor permits (includes administrative and regionwide permits), and 93 amendments. These permits resulted in a net increase of 3,807 acres of the San Francisco Bay.²⁵ The Act also requires the BCDC to develop, adopt, and implement the San Francisco Bay Plan, which includes policies and objectives for managing and protecting the Bay’s resources, including but not limited to marshes.²⁶

*California Coastal Act.*²⁷ Recognizing the importance and value of California’s coastal resources, the state legislature passed the CCA in 1976. Prior to this Act, a 1972 voter initiative called Proposition 20 Coastal Zone Management Act created the Coastal Commission and

¹⁵ Memorandum from Celeste Cantu, Executive Director, Cal. Envtl. Prot. Agency, to Reg’l Bd. Executive Officers (Jun. 2, 2004), available at http://www.waterboards.ca.gov/cwa401/docs/isol_waters_guid.pdf.

¹⁶ CAL. WATER CODE § 13160.

¹⁷ CAL. WATER CODE § 13200.

¹⁸ CAL. GOV’T CODE §§ 66600-66694; CAL. CODE REGS. tit. 14, §§ 10110-11990.

¹⁹ CAL. GOV’T CODE § 66601. The San Francisco Bay Conservation and Development Commission (BCDC) was established prior to the Coastal Commission and the two agencies have separate jurisdictions (BCDC - San Francisco Bay, Coastal Commission – California’s coastal zone) and both are responsible for reviewing federal permits for coastal consistency under the federal Coastal Zone Management Act for their respective jurisdictions. Personal Communication with Will Travis, San Francisco Bay Conservation and Dev. Comm’n (Dec. 7, 2006).

²⁰ Managed wetlands consist of “all areas which have been diked off from the bay and have been maintained during the three years immediately preceding the effective date of the amendment of this section during the 1969 Regular Session of the Legislature as a duck hunting preserve, game refuge or for agriculture.” See CAL. GOV’T CODE § 66610(b).

²¹ CAL. GOV’T CODE § 66100.

²² CAL. GOV’T CODE § 66632(a).

²³ *Id* at § 66632 (b).

²⁴ California Wetlands Information System, *McAteer Petris Act*, at http://ceres.ca.gov/wetlands/permitting/McAteer_Petris_summary.html (last modified Feb. 13, 2002).

²⁵ Personal communication with Will Travis, San Francisco Bay Conservation and Dev. Comm’n (Dec. 7, 2006).

²⁶ CAL. GOV’T CODE § 66651(b).

²⁷ CAL. PUB. RES. CODE §§ 30000-30900.

granted the Commission permit authority within the coastal zone²⁸ for four years.²⁹ The Proposition also required the Commission to develop a Coastal Plan for the protection, preservation, and restoration of the coastal zone environment.³⁰ This Act expired after four years. The legislature then enacted the CCA, which formally established the Coastal Commission as the state's coastal regulatory and management agency.³¹ The CCA also contains requirements related to coastal zone management and wetlands protection, including coastal development permits.³² All development in the coastal zone³³ and activities that impact resources in the coastal zone require a permit. The CCA prohibits dredge and fill activities in coastal wetlands, with the exception of low impact allowable uses such as restoration or research.³⁴ Coastal development permits for these activities must include appropriate mitigation measures.³⁵ Additionally, no "coastal-dependent development" is permitted in wetlands.³⁶

The CCA also authorizes local governments to administer coastal development permits within their jurisdictions if they have established a Local Coastal Program (LCP) approved and certified by the Coastal Commission.³⁷ Specific requirements and guidance for developing LCPs are provided in the CCA.

²⁸ Coastal zone is defined in Proposition 20 "as the area between the seaward limits of state jurisdiction and 1,000 yards landward from the mean high tide line, subject to specified exceptions." See: University of California, Berkeley – Hastings Law Library, *California Ballot Propositions* [search database], at <http://holmes.uchastings.edu/cgi-bin/starfinder/0?path=calprop.txt&id=webber&pass=webber&OK=OK> (last visited Mar. 21, 2007).

²⁹ Rasa Gustaitis, *How the Coast Was Won: An Interview with Lew Reid*. 18(4) CALIFORNIA COAST AND OCEAN (2003) available at <http://www.scc.ca.gov/coast&ocean/winter2002-03/pages/five.htm>.

³⁰ University of California, Berkeley, Hastings Law Library, *supra* note 28.

³¹ The California Coastal Commission through its Coastal Zone Management Division coordinates the review of certain coastal activities for the state's federally approved coastal zone management program. See CAL. PUB. RES. CODE § 30008.

³² CAL. PUB. RES. CODE §§ 30600(a), 30106. Development includes "placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511). As used in this section, 'structure' includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line." See CAL. PUB. RES. CODE § 30106.

³³ The coastal zone as defined in the California Coastal Act (CCA) includes three miles seaward and approximately 1,000 yards inland or in areas that are significant and undeveloped, it extend up to five miles inland. However, it excludes the coastal areas within the San Francisco Bay. See CAL. PUB. RES. CODE § 30103(a).

³⁴ CAL. PUB. RES. CODE § 30233.

³⁵ *Id.* § 30607.1.

³⁶ *Id.* § 30255.

³⁷ City and county governments can establish Local Coastal Programs (LCP) to guide planning, development, and conservation for the coastal zone within their jurisdictions. LCPs specify what new or changed land and water uses may occur and where they may take place. LCPs must include a land use plan and implementation plan. The Coastal Commission is responsible for reviewing LCP plans for coastal consistency and approving and certifying all LCPs. All amendments also must be approved by the Commission. Currently, 74 cities and counties have LCPs.

*Keene-Nejedly California Wetlands Protection Act.*³⁸ The state legislature passed the 1976 WPA in recognition of the state's valuable wetlands and the need to protect them in perpetuity for the public benefit. Under this Act, the state developed a plan in 1979 to guide wetlands protection, acquisition, enhancement, and restoration to be implemented through 2000.³⁹ The Act was updated in 2000 recognizing the need "for state agencies that are responsible for wetlands conservation to develop and disseminate a wetlands conservation strategy" for use by the legislature, local governments, and regional wetlands programs.⁴⁰ The updated WPA calls for the California Resources Agency ("Resources Agency") to update all the state's existing wetlands inventory resources in order to prepare a study with a variety of goals that include, but are not limited to, identifying: (1) restoration and enhancement opportunities in publicly-owned wetlands in the state; (2) mechanisms to protect and enhance existing publicly-owned wetlands; (3) opportunities to form voluntary public-private partnerships for wetlands restoration, enhancement, and management on private lands; and (4) privately-owned wetlands that are significant and where there may be a willing seller.⁴¹ The study will "set forth, for consideration by the Legislature, a plan for the acquisition, protection, preservation, restoration, and enhancement of wetlands, including funding requirements and the priority status of specific proposed wetlands projects."⁴² The WPA also creates a Coastal Wetlands Fund, which is an interest-bearing fund administered by the California Department of Fish and Game (CDFG) to provide a continuous source of funding for "wetlands maintenance."⁴³

*Suisan Marsh Preservation Act.*⁴⁴ The Nejedly-Bagley-Z'berg Suisan Marsh Preservation Act was passed in 1974 by the state legislature to protect the Suisan Marsh, the largest wetland system in California that comprises 10 percent of the state's wetlands. This Act required the BCDC and the CDFG to write a Suisan Marsh Protection Plan, which was completed in 1976. The legislature re-enacted the Suisan Marsh Protection Act in 1977 to incorporate the plan's objectives and policies and to provide the BCDC with administrative authority. The Act further requires that the Suisan Marsh Protection Plan supplement the San Francisco Bay Plan for all areas within the BCDC's jurisdiction.⁴⁵ Finally, the Act mandates that a resolution to salinity intrusion problems in the marsh be developed.⁴⁶

*Lake and Streambed Alteration Agreements.*⁴⁷ California's Fish and Game Code requires notification of the CDFG, through submission of an application for a Lake or Streambed

See California Coastal Commission, *Local Coastal Program*, at <http://www.coastal.ca.gov/lcps.html> (last visited July 10, 2007).

³⁸ CAL. PUB. RES. CODE §§ 5810-5818.

³⁹ *Id.* § 5811(b).

⁴⁰ *Id.* § 5811(e).

⁴¹ *Id.* § 5814(a).

⁴² *Id.* § 5814(b).

⁴³ *Id.* § 5818.1.

⁴⁴ *Id.* §§ 29000-29612.

⁴⁵ *Id.* § 29008.

⁴⁶ *Id.* § 29010(a)(6). In 1978 the State Water Resources Control Board (SWRCB) passed water salinity standards for October to May for the Suisan Marsh to ensure the areas remains a brackish-water tidal marsh with optimum waterfowl food plant production. See CAL. ENVTL. PROT. AGENCY – STATE WATER RES. CONTROL BD., WATER RIGHT DECISION-1485 (Aug. 1978), available at <http://www.waterrights.ca.gov/hearings/decisions/WRD1485.PDF>.

⁴⁷ CAL. FISH & GAME CODE §§ 1600-1616.

Alteration Agreement, before conducting any of the following activities: substantial diversion or obstruction of the natural flow of a river, stream, or lake; substantial change to or use of materials from the bed, channel, or bank of any river, stream, or lake; or disposal of debris, waste, or other material containing pavement where it may pass into any river, stream, or lake.⁴⁸ Lake or Streambed Alteration Agreements also may be required for certain construction projects that cause impacts to wetlands associated with rivers, streams, and lakes.⁴⁹ In 2005-2006, the CDFG Streambed Alteration Program received approximately 3,000 notifications and issued approximately 900 Lake or Streambed Alteration Agreements.⁵⁰

California Wetlands Conservation Policy. In August 1993, Governor Wilson announced his “California Wetlands Conservation Policy,” created by Executive Order W-59-93. The goals of the policy are to: (1) ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property; (2) reduce procedural complexity in the administration of [s]tate and federal wetlands conservation programs; and (3) encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration.⁵¹

This policy calls for the Resources Agency to establish an Interagency Task Force in cooperation with the California Environmental Protection Agency (CAL-EPA) to direct and coordinate administration and implementation of the policy. Elements also include statewide initiatives and regional strategies to implement, adapt, and refine wetlands programs for three regions: the San Francisco Bay area, Central Valley, and Southern California. Statewide initiatives for wetlands include “a statewide wetlands inventory, support for wetland planning, improved administration of existing regulatory programs, strengthened landowner incentives to protect wetlands, support for mitigation banking, development and expansion of other wetlands programs, and integration of wetlands policy and planning with other environmental and land use processes.”⁵²

California Environmental Protection Act. Projects or activities carried out by state or local agencies or activities that require a state permit or approval must go through an environmental review process pursuant to the California Environmental Protection Act (CEQA).⁵³ The environmental review involves an evaluation of alternatives and impacts and identification of mitigation if avoidance is not possible.⁵⁴ Coastal development permits, Lake or Streambed Alteration Agreements, and §401 water quality certifications may only be issued after a review of final CEQA documents is complete. Although not specific to wetlands, CEQA can play a role in wetlands protection and management.

⁴⁸ *Id.* § 1602.

⁴⁹ California Wetlands Information System, *California Department of Fish and Game*, at <http://ceres.ca.gov/wetlands/agencies/dfg.html> (last modified Jun. 6, 2002).

⁵⁰ Personal communication with Catherine Vouchilas, Cal. Dep’t of Fish and Game (Dec. 8, 2006).

⁵¹ California Wetlands Information System, *California Wetlands Conservation Policy* (1993), at <http://ceres.ca.gov/wetlands/policies/governor.html> (last modified May 18, 2002).

⁵² *Id.*

⁵³ CAL. PUB. RES. CODE § 21000 *et seq.*

⁵⁴ *Id.* § 21002.1.

Organization of state agencies

Various state agencies participate in both regulatory and non-regulatory wetlands activities throughout the state.

State Water Resources Control Board and Regional Water Quality Control Boards. The SWRCB - Division of Water Quality and nine RWQCBs (North Coast, San Francisco Bay, Central Coast, Los Angeles, Central Valley, Lahontan, Colorado River Basin, Santa Ana, and San Diego Regions) together constitute the California Water Board entities. The nine RWQCBs are considered state agencies and are responsible for implementing state laws and regulations. Their boundaries are primarily based on the state's watershed boundaries. Organizationally, these Boards fall within CAL-EPA; however, they are semi-autonomous and are directed by nine board members who are appointed by the Governor. CAL-EPA consists of the State and Regional Water Boards along with five other Boards, Departments, and Offices that regulate air pollution, waste, toxic substances, pesticides, and other environmental health hazards.⁵⁵

The SWRCB develops statewide water quality plans, policies, and standards and determines water rights. Beginning on January 1, 2007, the State Water Board has power to initiate enforcement actions within each region. It also carries out regulatory functions under the CWA and the WQCA, including §401 water quality certifications, monitoring, assessment, enforcement, and compliance. RWQCBs abide by statewide plans and policies, but also have regulatory and planning authority for their regions. Each RWQCB is responsible for developing and adopting a Water Quality Control Plan (Basin Plan), which includes beneficial uses (designated uses) and water quality objectives (water quality standards) for protecting uses in their regions. They also issue permits for discharges into waters of the state and §401 water quality certifications.⁵⁶ RWQCBs also oversee monitoring, assessment, enforcement, and compliance within their regions.

The State and Regional Water Boards were funded for 1,542.3 positions for fiscal year 2007, with a total budget of approximately \$630 million. Of this, approximately \$460 million comes from state general funds, special funds, and bond funds.⁵⁷ SWRCB staff work out of a headquarters office in Sacramento. The SWRCB employs five full-time staff persons for its statewide §401 water quality certification program.⁵⁸ RWQCBs have over 650 employees that work in 12 locations across California.⁵⁹ The number of full-time equivalents (FTE)⁶⁰ dedicated to §401 water quality certification programs vary by region; however, a total of 13.8 regional staff work on §401 certifications statewide. State fees generated by §401 water quality applications fund §401 certification programs at the state and regional levels.⁶¹ In addition to these state fees, many regional §401 water quality certification programs use funds from other

⁵⁵ California Environmental Protection Agency, *About CA/ EPA*, at <http://www.calepa.ca.gov/About/> (last updated Mar. 1, 2006).

⁵⁶ CAL. PUB. RES. CODE §§ 13225, 12241.

⁵⁷ CALIFORNIA DEPARTMENT OF FINANCE, ENACTED BUDGET 2006-2007, at <http://www.ebudget.ca.gov/Enacted/StateAgencyBudgets/3890/3940/departement.html> (last visited Dec. 12, 2006).

⁵⁸ Marsh *supra* note 8.

⁵⁹ Central Valley Regional Board has three regional offices and Lahontan has two regional offices.

⁶⁰ California uses the term personal years (PY) instead of full-time equivalents (FTE).

⁶¹ Marsh *supra* note 8.

programs and/or interns to supplement their programs.⁶² Other State and Regional Water Board programs may conduct wetland-related activities such as stormwater programs. As such, it is difficult to calculate the exact amount of staff time and funding devoted specifically to wetlands regulation and protection within the State and Regional Water Boards.

California Resources Agency. The Resources Agency is an umbrella agency for 34 departments, boards, commissions, and conservancies and is a sister agency to the CAL- EPA. Its primary wetland-related responsibilities are implementing the California Wetlands Conservation Policy and updating the state wetland inventory, as outlined in the policy and in the WPA.⁶³ The Secretary for Resources oversees various agencies with wetlands management or restoration responsibilities, including the Coastal Commission, BCDC, CDFG, California Department of Parks and Recreation (CDPR), California Department of Water Resources (CDWR), and the California Coastal Conservancy. The Resources Agency also is responsible for administering the EPA-funded Wetlands Development Pilot Grant (WDPG)⁶⁴ and managing the California Wetlands Information System (CWIS) as a part of the larger California Environmental Resources Evaluation System (CERES). One staff person at the agency works on wetland-related activities. The Resources Agency has spent approximately \$1.2 million dollars on developing the state wetland inventory since 2001, and its budget for the program varies year to year. The EPA granted the agency \$1 million through the WDPG.⁶⁵

California Coastal Commission. The Coastal Commission is the primary regulatory agency responsible for protecting and managing coastal resources along California's Pacific Coast. The Coastal Commission's main tool for regulating wetlands is its coastal development permit program, authorized under the CCA. In some cases, local governments have assumed authority to issue these permits within their jurisdictions; however, the Commission retains authority over development in submerged lands, tidelands, and public trust lands.⁶⁶ Permits are prepared by staff in district offices and presented to the Commission for approval.⁶⁷ Permit appeals from local governments also are handled by the Commission. The Coastal Commission also assists local governments on coastal development planning, issues coastal consistency determinations for federal permits and activities, administers an enforcement program and a non-regulatory water quality program, and provides public education and outreach on coastal wetlands.⁶⁸

The Coastal Commission employs a total of 143 staff divided among its various programs and offices. The Commission's headquarter office in San Francisco also serves as its North Central Coast district office. The five other district offices are located in Eureka (North Coast), Santa

⁶² Clemente *supra* note 11.

⁶³ California Wetlands Information System, *California Resources Agency*, at <http://ceres.ca.gov/wetlands/agencies/resources.html> (last modified Jun. 6, 2002).

⁶⁴ Wetlands Development Pilot Grants were awarded to fifteen states by the U.S. Environmental Protection Agency (EPA). The purpose of the grant is to set up a comprehensive state wetlands monitoring program that will evaluate and monitor state wetlands programs as well as actual wetlands to determine if the state is working towards its no-net-loss policy. The Resources Agency is coordinating the effort to establish this monitoring framework. Personal communication with Chris Potter, Cal. Res. Agency (Jan. 4, 2006).

⁶⁵ *Id.*

⁶⁶ California Coastal Commission, *supra* note 37.

⁶⁷ Lester *supra* at note 12.

⁶⁸ Personal communication with John Dixon, Cal. Coastal Comm'n (Nov. 29, 2006).

Cruz (Central Coast), Long Beach (South Coast), Ventura (South Central Coast), and San Diego (San Diego Coast). The Commission also has a separate Oceans and Energy Resources Division located at headquarters. Because many of the Commission's activities and programs relate to wetlands, it is difficult to estimate the number of FTEs that work on wetland-related activities and the percentage of the Commission's budget dedicated to wetlands activities.⁶⁹ The Commission's annual budget for fiscal year 2005 was approximately \$15 million and was derived from state general funds, federal coastal zone management funding (a portion of which the Commission administers to the BCDC), and reimbursements from other state agencies. The Commission also received approximately \$1.3 million in whale tail license plate sales⁷⁰ for its education program, of which \$778,000 was redistributed in the form of grants to other organizations.⁷¹

San Francisco Bay Conservation and Development Commission. The BCDC's primary regulatory responsibility towards wetlands is issuing permits for any fill or extraction activities or any changes to land or water use in tidal wetlands and waters of the San Francisco Bay and Delta. Because the BCDC is the state coastal management agency for the San Francisco Bay and Delta under federal and state law,⁷² the agency also reviews all federal permits for coastal consistency. The Commission also is responsible for administering the San Francisco Bay Plan and the Suisan Marsh Preservation Act and planning for protection, restoration, and enhancement of the Bay.⁷³

The BCDC employs 43 FTEs that work out of its office in San Francisco. Seventeen of these employees operate the BCDC Permitting, Enforcement, and Technical Unit and are responsible for permitting, monitoring, enforcement, and technical support activities. BCDC's \$5.5 million annual budget is funded primarily by state general funds, but the Commission also receives federal coastal zone funding (administered to it by the Coastal Commission) and grants from state and federal agencies. The Permitting, Enforcement, and Technical Unit receives approximately \$3.2 million of the Commission's budget for its activities.⁷⁴

California Department of Fish and Game. Although the CDFG has no specific regulations for managing wetlands, it plays a role in regulating wetlands through the Lake and Streambed Alteration Program.⁷⁵ The agency also is responsible for wetlands protection through its various grants programs, such as the Landowner Incentive Program (LIP) and California Waterfowl Habitat Program.⁷⁶ The CDFG also works with other state and federal agencies that issue wetlands permits, including the Corps on §404 permits, the Coastal Commission on coastal

⁶⁹ Personal communication with Susan Hansch, Cal. Coastal Comm'n (Dec. 12, 2006).

⁷⁰ Whale Tail License Plates are sponsored by the Coastal Commission. Proceeds from their sale go to the Commission's education programs, beach clean-up programs, and the California Coastal Conservancy habitat restoration program. See California Coastal Commission, *Whale Tail License Plates*, at <http://www.coastal.ca.gov/publiced/plate/platefaq.html> (last visited July 10, 2007).

⁷¹ Hansch, *supra* note 69.

⁷² California is the only state in the United States (U.S.) that has two state agencies federally authorized to implement the federal Coastal Zone Management Act.

⁷³ California Wetlands Information System, *San Francisco Bay Conservation and Development Commission*, at <http://ceres.ca.gov/wetlands/agencies/bcdc.html> (last modified Jan. 24, 2002).

⁷⁴ Travis, *supra* note 25.

⁷⁵ Vouchilas, *supra* note 50.

⁷⁶ Personal communication with Marc Kenyon, Ducks Unlimited (Dec. 11, 2006).

development permits, and the State and Regional Water Boards on §401 water quality certifications and permits.⁷⁷ The CDFG also issues permits for suction dredging in waters of the state.⁷⁸ Finally, CDFG reviews and comments on CEQA documents, which can pertain to wetlands issues.

CDFG operates from a headquarters office in Sacramento and eight regional offices: Northern California - North Coast, Sacramento Valley - Central Sierra, Central Coast, San Joaquin Valley - Southern Sierra, South Coast, Eastern Sierra-Inland Deserts, Marine, and the Central Valley Bay Delta Regions. Approximately 30 staff in six regional offices issue Lake or Streambed Alteration Agreements for the Lake and Streambed Alteration Program. These employees also review notifications, conduct site assessments, review CEQA documents as responsible or lead agency, draft agreements, and carry out compliance activities. The program's annual budget is approximately \$2.5 million and is derived entirely from notification fees.⁷⁹ The LIP program employs two FTEs (one employee is under contract with the CDFG and employed by Ducks Unlimited) and has an annual budget of approximately \$500,000.⁸⁰

California Department of Parks and Recreation. The CDPR - Natural Resources Division is responsible for managing wetlands located within the State Park System.⁸¹ The CDPR also administers two local grants programs, the Federal Land and Water Conservation Fund and the Habitat Conservation Fund Grant Programs through its Office of Grants and Local Services. CDPR also is responsible, as mandated by the WPA, to identify wetlands preservation opportunities on lands adjacent to state parks. It also has some jurisdiction over granted and ungranted tidelands and submerged lands adjacent to state parks.⁸² A portion of the 40 staff employed by the Office of Grants and Local Services work on wetland-related grants.⁸³ In addition to administering grants, staff also provide technical assistance and conduct field visits. The Land and Water Conservation Fund annual budget varies from year to year and is derived entirely from the National Park Service.⁸⁴ The Habitat Conservation Fund Grant Program has an annual budget of two million dollars, is funded through State Fiscal Year 2019/2020, and is derived primarily from state general funds.⁸⁵

California Coastal Conservancy. The California Coastal Conservancy works through non-regulatory mechanisms to protect, restore, and enhance coastal wetlands as well as other coastal resources. The Conservancy may work on wetland restoration or enhancement projects directly or provide funding and technical assistance to government agencies and organizations for projects. The Conservancy employs approximately 70 staff members working in four locations: Oakland, Fort Bragg, Santa Cruz, and Southern California. Three employees work for the

⁷⁷ California Wetlands Information System, *supra* note 49.

⁷⁸ See California Department of Fish & Game, 2006 *California Miscellaneous Licenses and Permits*, at <http://www.dfg.ca.gov/licensing/specialpermits/specialpermitsdescrip.html> (last visited July 10, 2007).

⁷⁹ Vouchilas, *supra* note 50.

⁸⁰ Kenyon, *supra* note 76.

⁸¹ Personal communication with Rick Rayburn, Dep't of Parks and Recreation (Jan. 3, 2006).

⁸² California Wetlands Information System, *Department of Parks and Recreation*, at http://ceres.ca.gov/wetlands/agencies/dept_parks_recreation.html (last modified Jan. 24, 2002).

⁸³ Personal communication with Joshua Brady, Dep't of Parks and Recreation (Dec. 4, 2006).

⁸⁴ *Id.*

⁸⁵ Personal communication with Deborah Viney, Dep't of Parks and Recreation (Dec. 1, 2006).

Conservancy's Restoration Enhancement Program; however, their time is not allocated solely to wetland restoration projects. The Conservancy's operating budget is \$8 million, while its capital budget varies year to year. Funding for this program is derived primarily from state bonds, but also comes from federal funds.⁸⁶

California Department of Water Resources. The CDWR is responsible for managing the state's water resources, as outlined in the California Water Plan, and for constructing, operating, and maintaining the State Water Project. Impacts to wetlands that result from its activities must be avoided, minimized, or mitigated based on permit conditions. Currently, it mitigates water quality impacts to the Suisun Marsh, manages the Upper Stream Restoration Program to help projects fix bank erosion and flood problems, provides staff to the Upper Sacramento River Advisory Council, develops and carries out the San Joaquin River Management Project, and implements a Floodplain Management Program.⁸⁷ It is also working to establish a mitigation bank. The CDWR employs approximately seven FTEs in its Environmental Services Division (ESD) that work on mitigation issues. In total (including the seven in the ESD), there are 14 environmental scientists in the CDWR that work on wetland-related activities.⁸⁸

§401 certification

Section 401 water quality certification is a primary mechanism for statewide wetland regulation.⁸⁹ The State and Regional Water Boards administer the state's §401 water quality certification program pursuant to section §401 of the CWA and California's WCQA. The SWRCB issues §401 water quality certifications for projects located in more than one region of the state, while the RWQCBs issue §401 water quality certifications for projects located solely within their regions.⁹⁰ Both the State and Regional Water Boards may make "general" certification actions for specific classes of activities if certain conditions apply, such as no adverse impacts on water quality.⁹¹ All proposed activities must receive a §401 certification before the Corps may issue a §404 permit. In addition to §401 certifications, RWQCBs also must issue Waste Discharge Requirements (WDRs) for all activities resulting in a discharge into state waters.⁹² For activities that fall outside the purview of the CWA §404 program, such as "geographically isolated" waters, the state still requires that WDRs for all dredge and fill projects be issued by either the RWQCB or, if multi-regional, by the SWRCB.⁹³

⁸⁶ Personal communication with Sam Schuchat, Cal. Coastal Conservancy (Dec. 5, 2006).

⁸⁷ California Wetlands Information System, *Department of Water Resources*, at <http://ceres.ca.gov/wetlands/agencies/dwr.html> (last modified Jun. 6, 2002).

⁸⁸ Personal communication with Jim Martin, Dep't of Water Res. (Dec. 8, 2006).

⁸⁹ STATE WATER RESOURCES CONTROL BOARD, CWA §401 WATER QUALITY CERTIFICATION PROGRAM §401 PROGRAM SCOPE AND STRATEGY (Dec. 19, 2002), *available at* http://www.waterboards.ca.gov/cwa401/docs/programscope_strategy.pdf.

⁹⁰ Personal communication with Nancy Dagle, State Bd. of Water Res. (Nov. 29, 2006).

⁹¹ CAL. CODE REGS. tit. 23, § 3861.

⁹² The California Water Code requires that all dischargers file a report of waste discharge (ROWD) and that the Regional Water Quality Control Boards (RWQCB) issue Waste Discharge Requirements (General WDR). These General WDRs require that all conditions of §401 certifications be implemented to ensure water quality standards are met. *See* STATE WATER RES. CONTROL BD., WATER QUALITY ORDER NO 2003-0017-DWQ STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR DREDGED OR FILL DISCHARGES THAT HAVE RECEIVED STATE WATER QUALITY CERTIFICATION (GENERAL WDRs) (Nov. 9, 2003), *available at* <http://www.swrcb.ca.gov/resdec/wqorders/2003/wqo/wqo2003-0017.pdf>.

⁹³ Cantu, *supra* note 15 at 2.

The SWRCB issues approximately two to five §401 certifications for multi-regional projects per year.⁹⁴ Waiving applications is prohibited by state law.⁹⁵ The number of regional certification approvals and denials vary by region; boards may work with applicants to obtain information for the applications so that they meet approval.⁹⁶ See Table One.

Table One. Water Quality Certifications by Region.				
<i>Region</i>	<i>Estimated approvals/year</i>	<i>Actual approvals from Oct 2003-2006^{97,98}</i>	<i>Estimated denials/year</i>	<i>Actual denials from Oct 2003-2006⁹⁹</i>
North Coast¹⁰⁰	60	152	30	15
San Francisco Bay¹⁰¹	300	368	Rarely deny	8
Central Coast¹⁰²	150	230	5	0
Los Angeles	Not available	242	Not available	14
Central Valley¹⁰³	300	56 (Fresno), 164(Redding), 572 (Sacramento)	Rarely deny	1(Fresno), 0 (Redding), 2 (Sacramento)

⁹⁴ Personal communication with Bill Marshall, Cent. Valley Reg'l Water Quality Control Bd. (Region 5) (Dec. 28, 2006).

⁹⁵ Short, *supra* note 10.

⁹⁶ Personal communication with Adam Fisher, Santa Ana Reg'l Water Quality Control Bd. (Region 8) (Nov. 29, 2006); Personal communication with Kirk Larkin, Colorado River Basin Reg'l Water Quality Control Bd. (Region 7), (Dec. 7, 2006).

⁹⁷ State Water Resources Control Board, *CWA Section 401 Water Quality Certification: Action Summary (on file at ELI)*.

⁹⁸ This does not include time expired applications. Personal communication with Chiara Clemente, San Diego Reg'l Water Quality Control Bd. (Region 1) (May 22, 2007).

⁹⁹ *Id.*

¹⁰⁰ Short, *supra* note 10.

¹⁰¹ Personal communication with Shin-Roei Lee, San Francisco Water Quality Control Bd. (Region 2) (Jan. 10, 2007).

¹⁰² Personal communication with Dominic Roques, Cent'l Coast Reg'l Water Quality Control Bd. (Region 3), (Dec. 1, 2006).

¹⁰³ Personal communication with Bill Marshall, Cent'l Valley Reg'l Water Quality Control Bd. (Region 5) (Dec. 8, 2006).

Lahontan ¹⁰⁴	100	39 (Tahoe), 29 (Victorville)	2	0,0
Colorado River Basin ¹⁰⁵	36	38	Rarely deny	0
Santa Ana ¹⁰⁶	150	223	Rarely deny	9
San Diego ¹⁰⁷	75	195	2	9

RWQCBs use a variety of factors to ensure that discharges of dredged or fill material comply with state water quality plans. State and Regional Water Boards tend to rely heavily on Corps' and CEQA documents to make their decisions, as well as information from the applicant required as part of the certification.¹⁰⁸ The state is currently exploring the use of more quantitative methods, such as the California Rapid Assessment Methodology (see *IV. Monitoring and Assessment*).¹⁰⁹

The SWRCB also has completed and issued a General §401 Water Quality Certification for Small Habitat Restoration Projects.¹¹⁰ This general certification authorizes discharges for small habitat restoration projects that are categorically exempt under CEQA, such as wetland restoration or stream bank revegetation.¹¹¹

Nationwide permits

The SWRCB denied without prejudice 26 nationwide permits (NWP),¹¹² because they have “wide breadth and scope, which makes it extremely difficult to determine their potential direct,

¹⁰⁴ Personal communication with Tobi Tyler, Lahontan Reg'l Water Quality Control Bd. (Region 6) (Dec. 13, 2006)

¹⁰⁵ Personal communication with Kirk Larkin, Colorado River Basin Reg'l Water Quality Control Bd. (Region 7), (Dec. 7, 2006).

¹⁰⁶ Personal communication with Adam Fisher, Santa Ana Reg'l Water Quality Control Bd. (Region 8) (Nov. 29, 2006).

¹⁰⁷ Clemente, *supra* note 11.

¹⁰⁸ Marsh, *supra* note 8.

¹⁰⁹ Clemente, *supra* note 11.

¹¹⁰ Personal communication with Glenda Marsh, State Water Res. Control Bd. (Apr. 30, 2007).

¹¹¹ State Water Resources Control Board, General 401 Water Quality Certification Order for Small Habitat Restoration Projects, *available at* <http://www.waterboards.ca.gov/cwa401/docs/generalorders/5259cert.pdf> [last visited May 3, 2007].

¹¹² The State Board has denied the following permits: NWP #2 - Structures in Artificial Canals, NWP #3 - Maintenance, NWP #7 - Outfall Structures and Maintenance, NWP #8 - Oil and Gas Structures, NWP #12 - Utility Line Activities, NWP #13 - Bank Stabilization, NWP #14 - Linear Transportation Projects, NWP #15 - U.S. Coast Guard Approved Bridges, NWP #16 - Return Water from Upland Contained Disposal Areas, NWP #17 - Hydropower Projects, NWP #18 - Minor Discharges, NWP #19 - Minor Dredging, NWP # - 21 Surface Coal Mining Activities, NWP #23 - Approved Categorical Exclusions, NWP #25 - Structural Discharge, NWP #26 - RESERVED (Not included in this certification), NWP #27 - Stream and Wetland Restoration Activities, NWP #31 - Maintenance of Existing Flood Control Facilities, NWP #33 - Temporary Construction, Access and Dewatering, NWP #35 - Maintenance Dredging of Existing Basins, NWP # 37 - Emergency Watershed Protection and

indirect, and cumulative impacts.” The SWRCB may certify these NWP’s at a future date. All CWA §401 certification applications that fall under these 26 NWP’s are considered on a case by case basis.¹¹³

The SWRCB also set forth the following special conditions and limitations for the 17 remaining NWP’s:¹¹⁴

- **Porter-Cologne Water Quality Control Act:** All permitted activities shall comply with requirements of the *Porter-Cologne Water Quality Control Act*.
- **Non-Severability:** If any condition is found to be invalid or unenforceable, certification for all activities to which that condition applies is denied.
- **Water Diversion and Use:** Certification is denied for any activity involving a new or modified diversion or impoundment of water, unless the SWRCB has already approved a water rights permit, or such diversion or impoundment is solely for the purpose of drainage or flood control.
- **Other Federal Permits and Licenses:** Certification is denied for any activity requiring the issuance or renewal of more than one federal permit or license.
- **Hydroelectric Facilities Requiring a Federal Energy Regulatory Commission (FERC) License:** Certification is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license.
- **Endangered Species Act:** Certification is denied for any project that would result in the taking of any candidate, threatened, or endangered species or the violation of the federal or California Endangered Species Act.
- **Subject to Review:** Certification is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13320 of the California Water Code and Title 23 California Code of Regulations (23 CCR) §3867 *et seq.*
- **Payment of Fees:** Certification is conditioned upon total payment of any fee which is required and is owed by the applicant.
- **Enforcement:** In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation shall be

Rehabilitation, NWP #39 - Residential, Commercial, and Institutional Developments, NWP #40 - Agricultural Activities, NWP #41 - Reshaping Existing Drainage Ditches, NWP # 42 - Recreational Facilities, NWP #43 - Storm water Management Facilities, and NWP #44 - Mining Activities. See Letter from Celeste Cantu, Executive Director, Cal. Env’tl. Prot. Agency, to Chief of Eng’rs, U.S. Army Corps S. Pacific Div. (March 12, 2002), available at <http://www.spn.usace.army.mil/regulatory/nwp/401cert.pdf>.

¹¹³ Letter from Celeste Cantu, Executive Director, Cal. Env’tl. Prot. Agency, to Chief of Eng’rs, U.S. Army Corps S. Pacific Div. (March 12, 2002), available at <http://www.spn.usace.army.mil/regulatory/nwp/401cert.pdf>.

¹¹⁴ The State Board has conditionally approved the following permits: NWP #1 - Aids to Navigation, NWP #4 - Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities, NWP #5 - Scientific Measuring Devices, NWP #6 - Survey Activities, NWP #9 - Structures in Fleeting Anchorage Areas, NWP #10 - Mooring Buoys, NWP # 11 - Temporary Recreational Structures, NWP #20 - Oil Spill Cleanup, NWP #22 - Removal of Vessels, NWP #24 - State Administered 404 Programs, NWP #28 - Modification of Existing Marinas, NWP #29 - Single Family Homes, NWP #30 - Moist Soil Management for Wildlife, NWP #32 - Completed Enforcement Actions, NWP #34 - Cranberry Productions Activities, NWP #36 - Boat Ramps, and NWP #38 - Cleanup of Hazardous and Toxic Wastes. See Cantu, *supra* note 113.

subject to any remedies, penalties, process, or sanctions as provided for under state law.¹¹⁵

The conditionally approved NWP's must not result in more than minimal individual or cumulative impacts. Additionally, NWP's #5, #6, #11, #20, #28, #29, #30, #32, #34, #36, and #38 are certified subject to notification requirements. The Coastal Commission and the BCDC review all NWP's for coastal consistency.¹¹⁶

The SWRCB also coordinated a review among all the RWQCB's of the 2007 NWP updates and submitted a set of comments to the Corps.¹¹⁷ California's final action on these updated NWP's could not be reviewed within the reporting period.

Mitigation

The California Wetlands Conservation Policy's goal of "no net loss" of wetlands guides mitigation procedures.¹¹⁸ Compensatory mitigation for both wetlands and streams is required by the SWRCB regulations for §401 water quality certifications. Regulations state that all applications for a §401 water quality certification must include the proposed amount of waters of the state that will be restored, enhanced, or created, or for which mitigation bank credits will be purchased.¹¹⁹ There are no specific SWRCB regulations or guidelines regarding mitigation procedures;¹²⁰ however, CEQA requires that individual and cumulative impacts be mitigated.¹²¹ Each RWQCB has the authority to decide on and apply mitigation conditions to water quality certifications.¹²² Mitigation requirements are developed to fully replace the wetland functions, values and acreage of the affected habitats. Usually the RWQCB will establish the minimum acceptable ratio of mitigation to impact acres, or bank credits to debits.¹²³ For example, the Central Coast Water Board requires a three to one ratio for wetland mitigation;¹²⁴ Lahontan Regional Water Board has policy language in connection with permitting activities and follows the an avoidance/minimization/mitigation sequence to ensure no net loss of wetland function and values.¹²⁵ Other boards make mitigation decisions on a case by case basis. Boards usually apply

¹¹⁵ Cantu, *supra* note 113.

¹¹⁶ Lester, *supra* note 12; Travis, *supra* note 25.

¹¹⁷ Dagle, *supra* note 90.

¹¹⁸ Short, *supra* note 10.

¹¹⁹ CAL. CODE REGS. tit. 23, § 3856(h)(5).

¹²⁰ The SWRCB currently is drafting a Wetland and Riparian Area Protection Policy. The board has issued four alternatives for the policy scope and conducted two scoping meetings to get input about the scope of the policy. A preferred alternative will be chosen in the near future. Personal communication with Glenda Marsh, State Water Res. Control Bd. (May, 17, 2007). This Policy incorporates the Corps' §404 regulations and will have parallel processes to the Corps in regards to avoidance, minimization, and mitigation procedures. It also incorporates the proposed federal rule on compensatory mitigation. Although the Policy mirrors the Corps §404 regulations and will not result in any new procedures, it does elaborate and reflect state goals. This Policy will apply to all waters of the state including those outside of federal jurisdiction. Personal communication with Glenda Marsh, State Water Res. Control Bd. (Dec. 7, 2006).

¹²¹ SAN FRANCISCO WATER BD., FACT SHEET FOR REVIEWING WETLAND AND RIPARIAN PROJECTS BY THE SAN FRANCISCO BAY WATER BOARD (2006), available at <http://www.waterboards.ca.gov/sanfranciscobay/certs.htm> (follow "Fact Sheet for Wetland Projects" hyperlink).

¹²² CAL. CODE REGS. tit. 23, § 3859(a).

¹²³ Personal communication with Bill Orme, State Water Res. Control Bd. (Jan. 16, 2007).

¹²⁴ Roques, *supra* note 102.

¹²⁵ Personal communication with Bill Orme, State Water Res. Control Bd. (Jan. 17, 2007).

at least a 1:1 ratio. To address mitigation needs, the San Francisco Water Board requires development of a Mitigation Plan.¹²⁶ Some RWQCBs, such as the Santa Ana Regional Water Board, allow contributions to specific in-lieu fee programs.¹²⁷ The SWRCB also is in the process of drafting a dredged or fill material policy that will have mitigation guidance for all waters of the state affected by dredging or filling discharges, including wetlands and streams.¹²⁸

The CCA requires that all coastal wetland functions be maintained by minimizing impacts.¹²⁹ As such, coastal development permits issued for dredge and fill activities in coastal wetlands must include mitigation,¹³⁰ including, “at a minimum,” acquisition of wetlands that are of equal or great biological value at a 1:1 ratio or opening up an equivalent amount of areas to tidal action.¹³¹ If no adequate restoration sites are available, an in-lieu fee may be dedicated to a public agency that is sufficient to purchase a site of equal or greater biological value.¹³² However, in-lieu fees must go towards a project that has already been designed and approved.¹³³ To provide a framework for reviewing mitigation plans and evaluating mitigation projects, the Coastal Commission also published *Procedural Guidance for the Review of Wetland Projects in California’s Coastal Zone* in 1995.¹³⁴ This guidance applies CEQA’s mitigation definition, which calls for a sequence of avoidance, minimization, restoration, and compensation.¹³⁵

The San Francisco Bay Plan, which was adopted into law by the state legislature, outlines guidelines for compensatory mitigation for impacts to state waters within the BCDC’s jurisdiction. The Plan mandates that actions should be taken in the following sequence: avoidance; minimization; repairing, rehabilitating, and restoring; and compensatory mitigation.¹³⁶ The guidelines also provide that a mitigation program should include project goals, performance standards, and a monitoring plan.¹³⁷

The California Fish and Game Code requires that CDFG Lake and Streambed Alteration Agreements include requirements to avoid and minimize impacts to fish and wildlife resources. In cases where mitigation is necessary, the CDFG includes relevant requirements.¹³⁸ Additionally, the Fish and Game Commission established a Wetlands Resource Policy that

¹²⁶ SAN FRANCISCO WATER BOARD, *supra* note 121.

¹²⁷ Fisher, *supra* note 106.

¹²⁸ Marsh, *supra* note 8

¹²⁹ CAL. PUB. RES. CODE § 30231.

¹³⁰ CAL. PUB. RES. CODE § 30233(a)

¹³¹ CAL. PUB. RES. CODE § 30607.1.

¹³² *Id.*

¹³³ Hansch, *supra* note 69.

¹³⁴ CAL. COASTAL COMM’N, PROCEDURAL GUIDANCE FOR THE REVIEW OF WETLAND PROJECTS IN CALIFORNIA’S COASTAL ZONE, EXECUTIVE SUMMARY (1995), *available at* <http://www.coastal.ca.gov/web/weteval/weexecsu.html>.

¹³⁵ CALIFORNIA COASTAL COMMISSION, PROCEDURAL GUIDANCE FOR THE REVIEW OF WETLAND PROJECTS IN CALIFORNIA’S COASTAL ZONE, MITIGATION DEFINED (1995), *available at* <http://www.coastal.ca.gov/web/weteval/we3.html>.

¹³⁶ SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION, SAN FRANCISCO BAY PLAN 73 (2006), *available at* <http://www.bcdc.ca.gov/pdf/planning/plans/bayplan/bayplan.pdf>.

¹³⁷ Travis, *supra* note 25.

¹³⁸ Vouchilas, *supra* note 50.

opposes any wetland development or conversion unless mitigation will result in a minimum of no net loss of wetlands.¹³⁹

Mitigation banking is legislatively authorized in a Resource Agency policy regarding conservation and mitigation banks.¹⁴⁰ Additionally, in 1993 Governor Wilson signed Sacramento-San Joaquin Valley Wetlands Mitigation Bank Act that required the CDFG to establish mitigation banks in the Central Valley and set out requirements and procedures for the banks.¹⁴¹ The CDFG has developed policies and procedures for establishing conservation and mitigation banks, and many mitigation banks in California are approved by the CDFG and the Corps. There are 39 CDFG-approved conservation and mitigation banks in California, of which seven have sold out of credits. Additional banks approved by other agencies are also present in the state.¹⁴²

The North Coast Regional Water Board and the San Francisco Bay Regional Water Board actively participate on the Mitigation Banking Review Team (MBRT) with the Corps' San Francisco District.¹⁴³ The Coastal Commission will participate on an MBRT only when the project is relevant to their activities.¹⁴⁴

Compliance and enforcement

Each state agency is responsible for enforcing its own regulatory program. The State and Regional Water Boards have legal authority to enforce violations of §401 certifications under the WQCA. The Corps also enforces §401/404 violations.¹⁴⁵ RWQCBs may issue administrative civil liability complaints, and the State Water Board handles the claims.¹⁴⁶ State and Regional Water Boards also may issue cease and desist orders,¹⁴⁷ clean up and abatement orders,¹⁴⁸ and civil penalties that may not exceed \$10,000 for each day in which the violation occurs.¹⁴⁹ Any person may petition the SWRCB to review an act or failure to act on the part of the RWQCBs. The SWRCB took 14 enforcement actions between 2002 and 2005.¹⁵⁰

The Coastal Commission has the authority to issue cease and desist and restoration orders.¹⁵¹ Civil liabilities may be imposed by superior court for any violation of the CCA or coastal

¹³⁹ See CAL. FISH AND GAME COMM'N, POLICIES OF THE CALIFORNIA FISH AND GAME COMMISSION, available at <http://www.fgc.ca.gov/html/p4misc.html#WETLANDS> (last visited July 11, 2007).

¹⁴⁰ In 1995, the state adopted an official policy regarding conservation banks, which are used for mitigating impacts to various habitats including wetlands. See DOUGLAS P. WHEELER, & JAMES M. STROCK, OFFICIAL POLICY ON CONSERVATION BANKS (1995), available at http://ceres.ca.gov/topic/banking/banking_policy.html.

¹⁴¹ CAL. FISH & GAME CODE § 1775 *et seq.*

¹⁴² California Department of Fish and Wildlife – Habitat Conservation Planning Branch, *Conservation and Mitigation Banking*, at <http://www.dfg.ca.gov/hcpb/conplan/mitbank/catalogue/catalogue.shtml> (last revised Apr. 7, 2007).

¹⁴³ Short, *supra* note 10; Shin-Roei Lee, *supra* note 101.

¹⁴⁴ Hansch, *supra* note 69.

¹⁴⁵ Orme, *supra* note 123.

¹⁴⁶ CAL. WATER CODE §§ 13350, 13261, 13268, 13265, 13385.

¹⁴⁷ *Id.* § 13301.

¹⁴⁸ *Id.* § 13304.

¹⁴⁹ *Id.* § 13308(b).

¹⁵⁰ Personal communication with Glenda Marsh, State Water Res. Control Bd., (Dec. 18, 2006).

¹⁵¹ CAL. COASTAL COMM'N, ENFORCEMENT PROGRAM ANNUAL REPORT (2004), available at <http://www.coastal.ca.gov/legal/enforcement-2004.pdf>.

development permit, which may not exceed \$30,000 but may not be less than \$500.¹⁵² The Commission's Enforcement Program has staff in five district offices, as well as the headquarters office. Cases are brought at a district level. If they are not resolved, then they are submitted to headquarters. All cease and desist and restoration orders are issued from the headquarters office. In 2004, 13 cease and desist orders, 3 executive director cease and desist orders, and 4 restoration orders were issued by headquarters.¹⁵³ Thirteen cases were elevated from the district to headquarters level. Headquarters had 163 on-going cases, and of these, 116 were pending at the Attorney General's Office. See Table Two.

Table Two. Enforcement and Compliance Statistics for 2004, by District.							
<i>Office</i>	<i>Ongoing Cases</i>	<i>Cases Opened</i>	<i>Cases Closed</i>	<i>Cases Resolved</i>	<i>Cases Resolved and Closed</i>	<i>Elevated to HQ</i>	<i>Pending</i>
North	94	30		10		2	
North Central		15	21				62
Central		46		62		2	195
South Central		36			36		
South		27			23		
San Diego		29		23			

The BCDC also has authority to issue cease and desist orders, bring cases before the courts and the Attorney General, and issue civil penalties. In 2005, BCDC started the year with 140 on-going cases, opened 61 cases, closed 76 cases, and had 126 open cases at the end of the year. The Commission issued no cease and desist orders and did not refer any cases to the Attorney General's office. Collected civil penalties totaled approximately \$290,000.

Tracking systems

¹⁵² CAL. PUB. RES. CODE §§ 30800-30812, 30820(a)(1).

¹⁵³ California Coastal Commission, *supra* note 151.

The SWRCB tracks most §401 certifications in a stand alone Access database.¹⁵⁴ The SWRCB was working to migrate its Access database into the Wetland Tracker system,¹⁵⁵ which was developed by the San Francisco Estuary Institute; however, this action has been put on hold due to resource constraints.¹⁵⁶ The SWRCB also has the California Integrated Water Quality System Project (CIWQS).¹⁵⁷ Most regional boards have informal, electronic tracking systems to record information on §401 applications and other permits. Several regions' databases, such as San Diego Water Board, track proposed mitigation activities, although not geospatially.¹⁵⁸ The Central Coast Water Board is in the process of developing a database to track implementation conditions for its §401 certifications, which will include mitigation.¹⁵⁹ Although there is no statewide mitigation tracking system for §401 certifications, the SWRCB contracted the University of California, Los Angeles to conduct a study to evaluate an applicant's compliance with §401 certification compensatory mitigation projects and wetland condition to determine how to improve regulatory and administrative procedures to help monitor and track compensatory mitigation.¹⁶⁰

The Coastal Commission, BCDC, and CDFG have permit tracking systems for the permits/agreements they issue, but have no formal system for tracking mitigation.¹⁶¹ Their permit tracking systems primarily record administrative-related information such as information recorded on an application, permit conditions, and review process. Although the Coastal Commission has no wetland mitigation tracking system, it keeps track of mitigation through individual permit condition compliance review.¹⁶² The BCDC's tracking system is tied to a Bay Resource Assessment Tool, and it is working to develop a mitigation tracking system in coordination with the San Francisco Regional Water Board and San Francisco Estuary Institute.¹⁶³

III. Water Quality Standards

¹⁵⁴ Personal communication with Jenny Chen, State Water Res. Control Bd. (Jan. 8, 2007).

¹⁵⁵ The Wetland Tracker System for the San Francisco Bay Area "provides free public access to information about the location, size, sponsors, habitats, contact persons, and status of wetland restoration, mitigation, creation, and enhancement projects in the San Francisco Bay Area." See Bay Area Tracker, at <http://www.wetlandtracker.org/> (last visited Jul. 20, 2007).

¹⁵⁶ Chen, *supra* note 154; Personal communication with Jenny Chen, State Water Res. Control Bd. (Apr. 18, 2007).

¹⁵⁷ The SWRCB operates the California Integrated Water Quality System Project, which is designed to manage all permits and track inspections and enforcement actions. See California Environmental Protection Agency, State Water Resources Control Board, *California Integrated Water Quality System Project*, at <http://www.swrcb.ca.gov/ciwqs/index.html> (last updated June 5, 2007).

¹⁵⁸ Clemente, *supra* note 11.

¹⁵⁹ Roques, *supra* note 102.

¹⁶⁰ Dagle, *supra* note 90. The report is not finalized but is available online. See RICHARD F. AMBROSE ET AL., AN EVALUATION OF COMPENSATORY MITIGATION PROJECTS PERMITTED UNDER THE CLEAN WATER ACT SECTION 401 BY THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD, 1991- 2002 (Aug. 2006), available at http://www.waterboards.ca.gov/cwa401/docs/wetlandmitstudy_rpt.pdf.

¹⁶¹ Lester, *supra* note 12; Travis, *supra* note 25; Vouchilas, *supra* note 50.

¹⁶² Lester, *supra* note 12.

¹⁶³ Travis, *supra* note 25.

The SWRCB sets the antidegradation policy for all “waters of the state,” which include wetlands.¹⁶⁴ The board also sets statewide water quality standards that must be applied in each region.¹⁶⁵ Each RWQCB adopts and implements Water Quality Control Plans (Basin Plans). These plans are approved by the SWRCB, are adopted as “Resolutions” of the RWQCBs, and are legally binding. They also are approved by the Office of Administrative Law and the U. S. Environmental Protection Agency (EPA). Basin Plans include beneficial uses and numeric and narrative water quality objectives (standards) to protect these uses.¹⁶⁶ Water Boards for Region 2 (San Francisco), Region 4 (Los Angeles), Region 6 (Lahontan) and Region 8 (Santa Ana) use Basin Plans that assign water quality objectives to wetlands. San Francisco’s Basin Plan assigns water quality objectives for the San Francisco Bay and Delta and the Suisan Marsh;¹⁶⁷ Los Angeles’ Basin Plan assigns narrative water quality objectives to all wetlands;¹⁶⁸ Lahontan explicitly recognizes wetlands as surface water bodies in its Basin Plan and has a number of beneficial uses related to wetland functions including Water Quality Enhancement and Flood Peak Attenuation/Flood Water Storage, which are assigned to wetlands in each hydrologic area;¹⁶⁹ and Santa Ana’s Basin Plan includes water quality objectives for the San Joaquin Freshwater marsh.¹⁷⁰ Both the San Francisco and North Coast Water Boards are proposing to amend their Basin Plans to include a Stream and Wetlands Protection Policy.¹⁷¹ Regions 1, 3, 5, 7, and 9 have no water quality objectives or beneficial uses specific to wetlands; however, wetlands are addressed via other beneficial uses (i.e., Saline, Estuarine, and Marine Habitats, and Warm and Cold Freshwater Habitats), and water quality objectives are set for protection of inland surface waters, enclosed bays and estuaries, and coastal lagoons.¹⁷²

IV. Monitoring and Assessment

¹⁶⁴ STATE WATER RES. CONTROL BD., RESOLUTION 68-16: STATEMENT OF POLICY WITH RESPECT TO MAINTAINING HIGH WATER QUALITY OF WATERS IN THE STATE (1968), *available at* <http://www.waterboards.ca.gov/plnspols/docs/wqplans/res68-16.pdf>.

¹⁶⁵ Marsh, *supra* note 8.

¹⁶⁶ Basin Plans must be approved by the SWRCB prior to Regional Board adoption. The California Office of Administrative Law and the EPA also approve the plans, but Regional Boards may adopt the plans prior to this approval. *See* CAL. WATER CODE §§ 13240, 13245.5; Dagle, *supra* note 90.

¹⁶⁷ SAN FRANCISCO REGION WATER QUALITY CONTROL BD., WATER QUALITY CONTROL PLAN, CHAPTER 3 WATER QUALITY OBJECTIVES, *available at* http://www.swrcb.ca.gov/rwqcb2/basinplan/web/BP_CH3.html (last visited July 11, 2007).

¹⁶⁸ LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD, WATER QUALITY CONTROL PLAN: LOS ANGELES REGION, CHAPTER 2: BENEFICIAL USES (1994), *available at* http://www.swrcb.ca.gov/rwqcb4/html/meetings/tmdl/Basin_plan/el_doc/BP2%20Beneficial%20Uses_text.pdf.

¹⁶⁹ Orme, *supra* note 123.

¹⁷⁰ SANTA ANA REG’L WATER QUALITY CONTROL BD., RESOLUTION NUMBER 94-1: WATER QUALITY CONTROL Plan (1995), *available at* <http://www.waterboards.ca.gov/santaana/pdf/R8BPlan.pdf>.

¹⁷¹ The Stream and Wetlands System Protection Policy will recognize that “it is necessary to protect and restore the physical characteristics of stream and wetlands systems—stream channels, wetlands, riparian areas, and floodplains—including their connectivity and natural hydrologic regimes, to achieve water quality standards and protect beneficial uses.” It calls for integrating stream and wetlands protection with pollution prevention strategies. The policy also will promote regulatory consistency and efficiency. *See* San Francisco Water Board, *Streams and Wetlands Protection Policy*, *at* <http://www.waterboards.ca.gov/sanfranciscobay/streamandwetlands.htm> (last updated Apr. 13, 2007).

¹⁷² Personal communication with Chiara Clemente, San Diego Water Quality Control Bd., (Region 9) (Dec. 18, 2006).

California Rapid Assessment Method

A variety of assessment methodologies are used in wetlands management and protection in California;¹⁷³ however, these methods cannot be applied to all California wetland types equally.¹⁷⁴ To fill gaps and standardize practices, state and federal agency representatives and scientists from the South, Central, and North Coasts and Bay Area developed the California Rapid Assessment Method (CRAM) to evaluate physical wetland conditions across a range of wetland types and geographic areas. Mainly intended as a cost-effective, science-based monitoring and assessment tool, it can be used as a part of a probabilistic sampling program (like that used by EPA's Environmental Monitoring and Assessment Program [EMAP]) to develop a landscape level profile of the condition of different wetlands within a watershed. This information can, in turn, be used to help plan, monitor, and assess restoration activities. The tool provides a preliminary determination of the need for additional analysis or monitoring and supplementary regulatory information and can be used in §401 certification, §404 permitting, and coastal development permit decision-making by providing information for permit evaluation, site selection, and evaluation of mitigation success.¹⁷⁵ Although the CRAM project currently focuses on wetlands located in coastal watersheds, calibration for the remaining classes of wetlands is planned.¹⁷⁶ Validation is almost complete, and the focus will turn to operational use of CRAM, integration of CRAM with the state's Surface Water Ambient Monitoring Program (SWAMP), and training for CRAM users. The Corps also has agreed to use the CRAM for §404 permit purposes.¹⁷⁷ CRAM Version 4.0 has been released for public distribution; however, the methodology is still in the pilot phase.

Surface Water Ambient Monitoring Program

The SWRCB administers the SWAMP,¹⁷⁸ a program that provides a statewide framework to “coordinate comparable, consistent, and scientifically defensible methods and strategies to

¹⁷³ Assessment methodologies include a method used by the San Francisco Bay Water Board called Wetland Ecological Assessments. See ANDREE BREAUX & MOLLY MARTINDALE, WETLAND ECOLOGICAL AND COMPLIANCE ASSESSMENTS IN THE SAN FRANCISCO BAY REGION, CALIFORNIA (Jul. 2003) available at <http://www.waterboards.ca.gov/sanfranciscobay/download/wecareport0803.pdf>. See also A .Breaux et al. *Wetland Ecological and Compliance Assessments in the San Francisco Bay Region, California*, 74 JOURNAL OF ENVTL. MGMT. (2005), or by request from abreaux@waterboards.ca.gov. Other assessment types include: Wetland Rapid Assessment Method (Miller & Gunsalus 1999), Rapid Impact Assessment Method (Stein & Ambrose 1998), the UCLA-CRAM method (Ambrose & Lee 2004) and various others in Bartoldus 1999 or Fennessy et al. 2004. See SAN FRANCISCO WATER BD., FACT SHEET FOR REVIEWING WETLAND AND RIPARIAN PROJECTS BY THE SAN FRANCISCO BAY WATER BOARD 9, 16-17 (2006), available at <http://www.waterboards.ca.gov/sanfranciscobay/certs/ab111506/Fact%20Sheet%20for%20Wetland%20Projects%2012-1-06.doc>.

¹⁷⁴ JOSHUA N. COLLINS, ERIC STEIN, AND MARTHA SUTULA, DRAFT: CALIFORNIA RAPID ASSESSMENT METHOD (CRAM) FOR WETLANDS, v 3.0. USER'S MANUAL AND SCORING FORMS (2004), available at http://www.wrmp.org/docs/cram/DRAFT_CRAMv3.pdf.

¹⁷⁵ ENVIRONMENTAL LAW INSTITUTE, NATIONAL SYMPOSIUM ON COMPENSATORY MITIGATION AND THE WATERSHED APPROACH: SYMPOSIUM MATERIALS (2004) (on file with author).

¹⁷⁶ SAN FRANCISCO BAY AREA WETLANDS REG'L MONITORING PROGRAM, CALIFORNIA RAPID ASSESSMENT METHOD FOR WETLANDS, available at <http://www.wrmp.org/docs/cram4/CRAM%20Prospectus%205-18-2006.pdf> (last visited July 11, 2007).

¹⁷⁷ Personal communication with David Smith, U.S. Env'tl. Prot. Agency, Region 9 (May 23, 2007).

¹⁷⁸ For this program, ambient monitoring includes collection of biological, chemical, and physical characteristics of surface waters to determine the status and trends of these factors in relation to water quality. See State Water Resources Control Board, *Surface Water Ambient Monitoring Program*, at <http://www.swrcb.ca.gov/swamp/> (last updated June 28, 2007).

improve surface water monitoring, assessment and reporting.”¹⁷⁹ SWAMP, developed in response to the California State Assembly Bill AB 982 which required the SWRCB to propose a comprehensive water quality monitoring program, was designed to integrate the different monitoring programs among and within Regions and to ensure collection of comparable ambient data.¹⁸⁰ The program is designed around beneficial use assessment and regulatory requirements. There are two statewide monitoring programs currently being developed – one to assess the fishable beneficial use in lakes and reservoirs and the other to assess aquatic life use in perennial streams.

SWAMP also has a regional monitoring component.¹⁸¹ Most regional monitoring programs involve water and sediment chemistry and toxicity testing and habitat and biological assessments. For example, the North Coast Regional Board uses bioassessments methods that were developed by the CDFG on its streams.¹⁸² The Lahontan Regional Board has conducted baseline and effectiveness monitoring at wetlands restoration sites. It also monitors in-stream biological integrity. Part of this process may involve some wetlands monitoring to better assess the state of in-stream waters, but wetlands do not receive a separate “score.”¹⁸³ In many cases, little funding exists for implementation of SWAMP at regional levels; thus, some regions focus on high quality waters and priority watersheds, and monitoring is primarily conducted through contracts.

SWAMP also recently has issued its official procedures for collecting bioassessment samples and associated physical habitat data. The new guidance document has two complementary procedures for sampling benthic macroinvertebrate assemblages and a suite of procedures for measuring physical habitat and chemical conditions associated with these samples. Collectively, these new procedures are designed to produce repeatable quantitative measures of a stream’s physical/habitat condition and benthic invertebrate assemblages. The protocol development was completed in collaboration with interested parties, including the CDFG’s Aquatic Bioassessment Laboratory.¹⁸⁴

SWAMP data also is used by the Board’s Water Quality Assessment Unit for developing 303(d) lists and 305(b) reports.¹⁸⁵ SWAMP officials hope to include monitoring data from other programs such as Nonpoint Source and Watershed Project Support Programs.¹⁸⁶ SWAMP also is coordinating to test CRAM as a core indicator for wetland condition, which will provide an

¹⁷⁹ STATE WATER RES. CONTROL BD. AND REG’L WATER QUALITY CONTROL BDS., COMPREHENSIVE MONITORING AND ASSESSMENT STRATEGY TO PROTECT AND RESTORE CALIFORNIA’S WATER QUALITY (Oct. 2005), *available at* <http://www.swrcb.ca.gov/swamp/docs/cw102swampcmas.pdf>.

¹⁸⁰ State Water Resources Control Board, *Surface Water Ambient Monitoring Program*, at <http://www.swrcb.ca.gov/swamp/> (last updated Mar. 19, 2007).

¹⁸¹ Personal communication with Emilie Reyes, State Water Res. Control Bd. (Dec. 14, 2006).

¹⁸² Short, *supra* note 10.

¹⁸³ Personal communication with Tom Suk, Lahontan Reg’l Water Quality Control Bd. Region (Dec. 15, 2006).

¹⁸⁴ Personal communication with Emilie Reyes, State Water Res. Control Bd. (Apr. 16, 2007). *See* STATE WATER RES. CONTROL BD., STANDARD OPERATING PROCEDURES FOR COLLECTING BENTHIC MACROINVERTEBRATE SAMPLES AND ASSOCIATED PHYSICAL AND CHEMICAL DATA FOR AMBIENT BIOASSESSMENTS IN CALIFORNIA (Feb. 2007), *available at* http://www.waterboards.ca.gov/swamp/docs/phab_sopr6.pdf.

¹⁸⁵ Reyes, *supra* note 181.

¹⁸⁶ State Water Resources Control Board, *supra* note 180.

“unbiased” estimate of the condition of estuarine wetlands. This work will be completed in 2008.¹⁸⁷

Additional efforts

The San Francisco Estuary Institute, in collaboration with the San Francisco Regional Water Board and the regulated community, has developed a Regional Monitoring Program (RMP) that collects monitoring data on “spatial patterns and long term trends in contamination through sampling of water, sediment, bivalves, and fish, and evaluates toxic effects on sensitive organisms and chemical loading to the Bay.” The RMP combines this data with data from various other programs to provide for a “comprehensive assessment of chemical contamination in the Bay.”¹⁸⁸

Volunteer monitoring is also an important program within the SWRCB. The Clean Water Team is a volunteer water quality monitoring program that focuses on non-point source pollution, which can have significant impacts to state wetlands.¹⁸⁹

The CDWR and the CDFG signed the Suisun Marsh Preservation Agreement in 1987 along with Suisun Marsh Conservation District and the Bureau of Reclamation. The agreement included a provision to develop a monitoring program for the marsh.¹⁹⁰ As a result, the CDWR developed a monitoring program based on the parameters in the Suisun Marsh Preservation Plan.

CDFG’s Aquatic Bioassessment Laboratory established a standardized protocol for wadeable streams and rivers based on EPA’s EMAP. The protocol contains methods for sampling invertebrates, fish, and periphyton and for assessing physical/habitat and biotic integrity.¹⁹¹

V. Restoration and Partnerships

The California Wetlands Conservation Policy makes restoration a priority for the state and calls for the identification of “regional and [s]tatewide goals for conserving, restoring, and enhancing wetlands.” The policy goes on to state that “[a]chievement of these goals will emphasize maintaining economic uses (e.g., agriculture) of restored and enhanced lands and be achieved through the voluntary participation of landowners.” The policy also calls for no net loss of wetlands. To achieve this goal, several state agencies administer various restoration programs including landowner incentive programs, easements, technical and cost-share assistance, and grant programs.

¹⁸⁷ STATE WATER RES. CONTROL BD. AND REG’L WATER QUALITY CONTROL BDS., *supra* note 179; Personal communication with Terry Fleming, U.S. Envtl. Prot. Agency, Region 9 (May 23, 2007).

¹⁸⁸ San Francisco Estuary Institute, *Regional Monitoring Program*, at <http://www.sfei.org/rmp/> (last visited July 11, 2007).

¹⁸⁹ State Water Resources Control Board, *Clean Water Team: Citizen Monitoring Program*, at <http://www.swrcb.ca.gov/nps/volunteer.html#highlights> (last updated July 5, 2007).

¹⁹⁰ STATE OF CAL. ET AL., SUISUN MARSH MONITORING PROGRAM REFERENCE GUIDE, VERSION 1 (1999), *available at* <http://www.iep.water.ca.gov/suisun/dataReports/referenceGuide/SuisunMarshMonitoringProgramReferenceGuideVersion1.pdf>.

¹⁹¹ Personal communication with James Harrington, Cal. Dep’t of Fish and Game (Jan. 5, 2007).

State and Regional Water Boards

The SWRCB and most Regional Water Boards have no direct involvement in formal restoration programs other than issuing grants for wetland-related restoration projects. The San Francisco Bay Water Board, however, worked with EPA, the San Francisco Estuary Institute, and many other agencies and organizations in the San Francisco Bay Area to produce habitat goals for wetlands and related habitats. The San Francisco Bay Area Wetlands Ecosystem Goals Project (Goals Project) published *Baylands Ecosystem Habitat Goals*,¹⁹² which provides recommendations for extensive wetland restoration throughout San Francisco Bay that have been followed by partners and stakeholders interested in ecosystem restoration.¹⁹³

California Department of Parks and Recreation

The CDPR provides grants for wetland-related restoration projects. CDPR's Office of Grants and Local Services administers the Federal Land and Water Conservation Fund and Habitat Conservation Fund Grant Programs. The Land and Water Conservation Fund Program does not include wetlands as a funding category; however, occasionally an applicant has requested funding for an acquisition that has a wetlands component. The Habitat Conservation Fund Program does include wetlands as one of six funding categories. Habitat Conservation Fund Program grant applicants can apply for funds for projects to either acquire wetlands property or to enhance or restore properties. The program provides \$2 million per year, including both wetland- and non-wetland-related projects. Applicants must meet a one to one non-state match requirement.¹⁹⁴ Since the program's inception, CDPR has funded 42 wetland projects throughout California, most of which have involved enhancement/restoration of existing wetlands.¹⁹⁵ CDPR also conducts restoration activities on state parks lands.¹⁹⁶

California Coastal Conservancy

The Coastal Conservancy provides grants for wetland acquisition and restoration, and conducts restoration and provides technical and planning guidance as well. Through its Resource Enhancement Program, the Coastal Conservancy has restored over 40,000 acres in the San Francisco Bay Area and 5,000 to 6,000 acres in Southern California.¹⁹⁷ The Conservancy works cooperatively with many agencies, organizations, and private partners to achieve its restoration

¹⁹² See SAN FRANCISCO BAY AREA WETLANDS ECOSYSTEM GOALS PROJECT, BAYLANDS ECOSYSTEM HABITAT GOALS: A REPORT OF HABITAT RECOMMENDATIONS (1999), available at http://sfep.abag.ca.gov/pdf/habitat_goals/Habitat_Goals.pdf.

¹⁹³ Personal communication with Andree Breaux, San Francisco Reg'l Water Quality Control Bd. (Region 2) (Jan. 11, 2007).

¹⁹⁴ CENTRAL VALLEY JOINT VENTURE, CONSERVATION PROGRAMS PUBLIC FUNDING INFORMATION, available at http://www.centralvalleyjointventure.org/materials/cvjb_funding.pdf (last visited July 11, 2007).

¹⁹⁵ Viney, *supra* note 85.

¹⁹⁶ Restoration projects in state parks include: coastal wetlands projects at Pescadero Marsh Natural Preserve in San Mateo County, Wilder Beach Natural Preserve in Santa Cruz County, San Simeon State Park in San Luis Obispo County, Gaviota State Park in Santa Barbara County, and Tijuana Estuary Natural Preserve in San Diego County. See California Resources Agency – California Wetlands Information System, *Department of Parks and Recreation*, at http://ceres.ca.gov/wetlands/agencies/dept_parks_recreation.html (last modified Jan. 24, 2002).

¹⁹⁷ Major projects include restoration of Napa Salt Marsh and South Bay Salt Ponds with the California Department of Fish and Game (CDFG) and the BCDC, the Southern California Wetlands Restoration Project (see below), and Bolsa Chica Restoration Project as well as many smaller projects. Schuchat, *supra* note 86.

goals.¹⁹⁸ It also has published *Options for Wetland Conservation: A Guide for California Landowners*.¹⁹⁹

California Department of Fish and Game

CDFG administers a Landowner Incentive Program in the Central Valley, which provides landowners with incentive payments for implementing a habitat conservation plan for threatened and endangered species on restored wetlands, riparian lands, and native grasslands.²⁰⁰ The program is funded by FWS and the California State Wetland Fund. CDFG works with FWS and the Natural Resources Conservation Service (NRCS) to select projects. The CDFG also administers the California Waterfowl Habitat Program, under which the agency enters into agreements with landowners to protect waterfowl habitat. Through the agreement, landowners receive \$20 for each acre of waterfowl habitat protected per year. The landowners must abide by specific agreement terms for wetlands. The CDFG ensures that compliance takes place and that payments are issued.²⁰¹

Wildlife Conservation Board

The Wildlife Conservation Board (WCB) operates as an arm of the CDFG but retains independent authority. The WCB created the Inland Wetland Conservation Program in 1990 to increase waterfowl populations by protecting and restoring wetland habitat in the Central Valley and to advance the goals of the Central Valley Joint Venture. Through this program, the WCB administers a cost-sharing program. It awards grants to non-profit organizations, state and local governments, Resource Conservation Districts, and Special Districts for projects that will restore and enhance lands or that will place wetlands into easements.²⁰² The WCB also may purchase degraded wetlands, restore them, and sell them to a public agency or private entity.²⁰³

Department of Water Resources

The CDWR has authority from Proposition 84 to allocate \$1 billion in grants to local agencies to meet long-term water resource needs including protection of water quality and the environment.²⁰⁴ Although projects are not required to be specific to wetlands, they must have multiple benefits. One of the eleven possible benefits includes “[r]emoval of invasive non-native species, the creation and enhancement of wetlands, and the acquisition, protection, and restoration of open space and watershed lands.”²⁰⁵

Regional and local efforts

¹⁹⁸ *Id.*

¹⁹⁹ For an excerpt and information on how to obtain the California Coastal Conservancy’s “Options for Wetland Conservation: A Guide for California Landowners,” see California Wetlands Information System, *Voluntary Landowner Incentive Programs*, at <http://ceres.ca.gov/wetlands/introduction/management.html> (last modified Aug. 13, 1998).

²⁰⁰ California Department of Fish and Game, *Landowner Incentive Program*, at <http://www.dfg.ca.gov/lands/lip/> (last visited July 11, 2007); Email from Marc Kenyon, Ducks Unlimited (Dec. 11, 2006).

²⁰¹ California Wetlands Information System, *supra* note 63.

²⁰² California Wildlife Conservation Board, *Inland Wetlands Conservation Program*, at http://www.wcb.ca.gov/Pages/inland_wetlands_conservation_program.htm (last visited July 11, 2007).

²⁰³ California Wetlands Information System, *Wildlife Conservation Board*, at <http://ceres.ca.gov/wetlands/agencies/wcb.html> (last modified Jan. 24, 2002).

²⁰⁴ CAL. PUB. RES. CODE § 75026(a).

²⁰⁵ *Id.* § 75026(a)(3).

There also are numerous restoration projects taking place throughout California at regional and local levels involving many partners, including various state agencies. A prominent example is the Southern California Wetlands Recovery Project (SCWRP). The SCWRP was initiated “to accelerate the pace, the extent, and the effectiveness of coastal wetland restoration” and to increase the quality and quantity of wetlands in the state over the long-term. The SCWRP is chaired by the Resources Agency and supported by the Coastal Conservancy. The Project is a partnership that includes public agencies,²⁰⁶ nongovernmental organizations, communities, and scientists. The partners work together to acquire and restore wetlands, rivers, and streams in Southern California. Using an ecosystem framework and a non-regulatory approach, the SCWRP prioritizes wetlands for acquisition and restoration from Point Conception in Santa Barbara County to the border with Mexico. The SCWRP also develops and implements plans for these priority wetlands, combines funding to implement the projects, and maintains and monitors projects.²⁰⁷ The program also manages a database which includes an inventory and profile of the wetlands within the project area.²⁰⁸ Initial funding from the state derived from an interagency grant from the CDFG. Several partner agencies also contributed funds and services for SCWRP development.

Additional major restoration efforts that involve state agencies as partners include the Bolsa Chica Restoration Project,²⁰⁹ Ballona Wetlands Restoration Project,²¹⁰ and the San Francisco Bay Area Wetlands Restoration Program,²¹¹ and the CALFED Bay-Delta Program.²¹²

Tracking restoration

²⁰⁶ State agencies involved include: the State Coastal Conservancy, the Resources Agency, the Coastal Commission, the CDFG, the California Department of Parks and Recreation (CDPR), the California State Lands Commission (CSLC), the California Environmental Protection Agency (CAL-EPA), the Wildlife Conservation Board (WCB), the SWRCB, and the Central Coast, Los Angeles, Santa Ana, and San Diego Regional Boards. See Southern California Wetlands Restoration Project, *Background*, at http://scwrp.org/governing_board.htm (last visited July 11, 2007).

²⁰⁷ Southern California Wetlands Restoration Project, *Southern California Wetlands Restoration Project*, at <http://scwrp.org> (last visited July 11, 2007).

²⁰⁸ California Coastal Conservancy, *Southern California Wetlands Recovery Project Information System*, at <http://www.wrpinfo.scc.ca.gov/> (last visited July 11, 2007).

²⁰⁹ State agencies involved include: CSLC, California Coastal Conservancy, and the Resources Agency. See National Oceanic and Atmospheric Administration – National Marine Fisheries, Southwest Regional Office, *Bolsa Chica Wetlands Steering Committee*, at <http://swr.nmfs.noaa.gov/hcd/bolsa.htm> (last visited July 11, 2007).

²¹⁰ State agencies involved include: CDFG, California Coastal Conservancy, and CSLC. See California Coastal Conservancy, *Ballona Wetlands Restoration Project-Project Organization*, at <http://www.scc.ca.gov/Ballona/images/project-org-chart3.jpg> (last visited July 11, 2007).

²¹¹ The Executive Council is made up of the following state agencies: CALFED Bay-Delta Authority, CDFG, CAL-EPA, Resources Agency, BCDC, San Francisco Bay Regional Water Quality Control Board, California Coastal Conservancy, CSLC, SWRCB, and WCB. See San Francisco Bay Area Wetlands Restoration Program, *Objectives and Benefits*, at <http://www.sfwetlands.ca.gov/objectivesbenefits.html> (last visited July 11, 2007).

²¹² CALFED is a program that involves the collaboration of 25 state and federal agencies. It was established in 1994 through a Framework Agreement to “improve water supplies in California and the health of the San Francisco Bay/Sacramento-San Joaquin River Delta.” The Bay-Delta Authority was established to oversee CALFED’s 30 year plan, which was developed to guide the goals and development programs for the area. CALFED provides grants for various projects including wetlands restoration projects through its Ecosystem Restoration Program. See California Bay-Delta Authority, *About CALFED*, at <http://calwater.ca.gov/AboutCalfed/AboutCALFED.shtml> (last visited July 11, 2007). See also California Bay-Delta Authority, *Ecosystem Restoration Project, ERP Project Locator*, at <http://www.delta.dfg.ca.gov/erpin/displaymap.asp> (last visited July 11, 2007).

The Natural Resource Project Inventory (a collaborative effort between the California Biodiversity Council and the University of California at Davis) tracks a range of information on many types of projects including wetlands restoration projects. Tracked information includes funding, partners/participants, contact information, and any technical data available.²¹³ Used by both the general public and government agency staff, the goal of the inventory is to assist with conservation planning and local restoration needs.²¹⁴ As of June 2007, 80 percent of the state's wetlands have been mapped.²¹⁵ The Resources Agency plans to map the remaining wetlands in the state and re-map wetlands that were mapped in the 1980s to ensure their accuracy. Primary partners include the Coastal Conservancy, CDFG, FWS, and EPA Region IX.²¹⁶

VI. Education and Outreach

RWQCBs conduct some education through watershed or stormwater programs or specific grants. For example, the Lahontan Regional Water Board received an EPA grant to develop a teacher's wetland curriculum for K-5 students in the Lake Tahoe area.²¹⁷ Additionally, the San Francisco Bay Regional Board included dredge and fill permitting as part of its construction site management workshops for developers and consultants.²¹⁸ However, most of the RWQCBs efforts are not formalized and are not specific to wetlands. The CDWR works with the Central Valley Joint Venture to produce a junior duck stamp calendar. Calendars contain pictures painted by children, include captions regarding wetlands information, and are distributed to schools throughout the state.²¹⁹ The Coastal Conservancy often adds interpretive signs to completed restoration projects. It also funds nature centers that are working to restore wetlands and provide wetlands education programs.²²⁰

The Resource Agency administers and maintains a major education and outreach effort through its California Environmental Resources Evaluation System (CERES). The system is designed to provide a variety of environmental information and data to the public, government agencies, and scientists. The information can be used for environmental planning and analysis.²²¹ Part of the CERES, the California Wetlands Information System (CWIS) is another important educational tool. This system provides information on wetlands including maps, environmental documents, agency roles in wetlands management, and restoration and mitigation. All information is accessible online and is intended for the general public and government agencies.²²²

²¹³ NATURAL RESOURCES PROJECT INVENTORY, CELEBRATING 10 YEARS OF SUCCESS: CONSERVATION & RESTORATION PROJECTS IN CALIFORNIA at i-ii, available at <http://www.ice.ucdavis.edu/nrpi/Brochure/Foreword.pdf> (last visited July 11, 2007).

²¹⁴ California Resources Agency, *supra* note 197.

²¹⁵ Potter, *supra* note 64.

²¹⁶ *Id.*

²¹⁷ Personal communication with Cindy Wise, Lahontan Reg'l Water Quality Control Bd. (Region 6) (Dec. 13, 2006).

²¹⁸ Lee, *supra* note 101.

²¹⁹ Martin, *supra* note 88.

²²⁰ Schuchat, *supra* note 86.

²²¹ California Resources Agency, *California Environmental Resources Evaluation System*, at <http://www.ceres.ca.gov/> (last visited July 11, 2007)

²²² California Resources Agency, *California Wetland Information System*, at <http://ceres.ca.gov/wetlands> (last modified Jan. 17, 2003).

The Coastal Commission has an extensive wetlands education program. One of its foremost programs is a community-based restoration program in upper Newport Bay in Orange County.

²²³ Through the program, the Commission recruits volunteers to conduct coastal wetland restoration work on a monthly basis and conducts outreach on wetlands issues. In conjunction with this program, the Commission has developed a curriculum called *Our Wetlands, Our World* for teachers. Commission staff conduct workshops for teachers using this curriculum and provide school bus scholarships for student field trips. Another important Commission education effort is *Waves, Wetlands, and Watersheds*, a statewide education program for third through eighth grade students that is aligned with state education standards. Each grade focuses on a coastal topic. Wetlands are addressed throughout, but are the specific focus for grade three. Finally, the Commission also has a grants program through which it awards funding for wetland educational programs that also may involve restoration. All the Commission's education programs are funded by the sale of whale tail license plates.²²⁴

VII. Coordination with State and Federal Agencies

As prescribed in the California Wetlands Conservation Policy, California's state agencies cooperate extensively on wetlands issues. For example, the BCDC has a Memorandum of Understanding (MOU) with the San Francisco Water Board that states that a §401 certification may not be issued until a BCDC permit has been issued. Commissioners of the BCDC are appointed from various state agencies, including the Resources Agency and SWRCB. The BCDC also works under MOUs with the Coastal Commission and the Coastal Conservancy on various projects.²²⁵ The Coastal Commission works closely with the CDFG on wetlands and sensitive habitat issues when preparing permits.²²⁶ The CDWR coordinates with the CDPR and CDFG to carry out its compensatory mitigation on state-owned lands. RWQCBs work together and meet bimonthly on §401 water quality certification related issues.²²⁷

State agencies also work regularly with federal agencies. State and Regional Water Boards may coordinate with FWS and the Corps on §401/404,²²⁸ although the degree of cooperation varies by region. The BCDC also coordinates closely with the Corps, because the Corps may not issue a §404 permit for a project in the BCDC jurisdiction before an applicant has received its BCDC permit.²²⁹ The Coastal Commission works closely with the FWS and National Oceanic and Atmospheric Administration when issuing permits to ensure there are no impacts to threatened and endangered species.²³⁰ The CDFG and WCB work closely with the National Resources

²²³ As a spin-off to this community-based program in Newport Bay, the Commission is developing a guide to assist grassroots initiatives interested in establishing their own restoration programs. The guide is due out for review in February 2007. Personal communication with Christiane Parry, Cal. Coastal Comm'n (Dec. 12, 2006).

²²⁴ *Id.*

²²⁵ Travis, *supra* note 25.

²²⁶ Lester, *supra* note 12.

²²⁷ Short, *supra* note 10.

²²⁸ Tyler, *supra* note 104; Personal communication with Greg Vaughn, Cent. Valley Water Quality Control Bd. (Region 5) (Dec. 27, 2006)

²²⁹ Travis, *supra* note 25.

²³⁰ Lester, *supra* note 13.

Conservation Service (NRCS) on its Wetlands Preserve Program and on other mitigation and restoration initiatives.²³¹ Finally, extensive coordination takes place between state and federal agencies on the state's numerous restoration efforts (see *V. Restoration and Partnerships*).

VIII. Acronyms and Abbreviations

BCDC – San Francisco Bay Conservation and Development Commission
CCA – California Coastal Act
CAL-EPA – California Environmental Protection Agency
CERES – California Environmental Resources Evaluation System
CEQA – California Environmental Quality Act
Corps – U.S. Army Corps of Engineers
CRAM – California Rapid Assessment Methodology
CWA – Clean Water Act
CWIS – California Wetlands Information System
CDFG – California Department of Fish and Game
CDPR – California Department of Parks and Recreation
CDWR – California Department of Water Resources
EPA – U.S. Environmental Protection Agency
FTE – Full-time Equivalent
FWS – U.S. Fish and Wildlife Service
MBRT – Mitigation Banking Review Team
MOU – Memorandum of Understanding
NRCS – Natural Resources Conservation Service
NWPs – Nationwide Permits
RMP – Regional Monitoring Program
RWQCB – Regional Water Quality Control Board
SCWRP – Southern California Wetlands Restoration Project
SWAMP – Surface Water Ambient Monitoring Program
SWRCB – State Water Resources Control Board
WCB – Wildlife Conservation Board
WPA – Wetlands Protection Act
WQCA – Water Quality Control Act

²³¹ Personal communication with Alan Forkey, Natural Res. Conservation Serv. (Dec. 12, 2006).