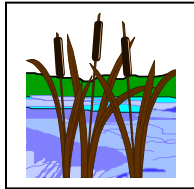


## Wetlands, Riparian Areas, & Vegetated Treatment Systems Management Measures



The SWRCB, CCC, and other State agencies have identified four management measures (MMs) to promote the protection and restoration of wetlands and riparian areas and the use of vegetated treatment systems as means to control nonpoint sources of pollution. Wetlands and riparian areas reduce polluted runoff by filtering out runoff-related contaminants such as sediment, nitrogen and phosphorus; thus maintaining the water quality benefits of these areas is important. These areas also help to attenuate flows from higher-than-average storm events. This protects downstream areas from adverse impacts such as channel scour, erosion and temperature and chemical fluctuations. Changes in hydrology, substrate, geochemistry, or species composition can impair the ability of wetland or riparian areas to filter out excess sediment and nutrients, and so can result in deteriorated water quality. The following activities can cause such impairment: drainage of wetlands for cropland, overgrazing, hydromodification, highway construction, deposition of dredged material, and excavation for ports and marinas.

### California's MMs to protect and restore wetlands and riparian areas and use vegetated treatment systems as means to control pollution from nonpoint sources:

#### 6A. Protection of Wetlands & Riparian Areas

#### 6B. Restoration of Wetlands & Riparian Areas

#### 6C. Vegetated Treatment Systems

#### 6D. Education/Outreach

### Management Measures:

**Wetlands/Riparian Areas Protection.** Implementation of MM 6A is intended to protect the existing water quality improvement functions of wetlands and riparian areas as a component of NPS programs.

**Wetlands/Riparian Areas Restoration.** Restoration of wetlands and riparian areas (MM 6B) refers to the recovery of a range of functions that existed previously by reestablishing hydrology, vegetation, and structure characteristics. Damaged or destroyed wetland and riparian areas should be restored where restoration of such systems will significantly abate polluted runoff.

**Vegetated Treatment Systems.** MM 6C promotes the installation of vegetated treatment systems (e.g., artificial or constructed wetlands) in areas where these systems will serve a polluted runoff-abatement function. Vegetated filter strips and engineered wetlands remove sediment and other pollutants from runoff and wastewater, and prevent pollutants from entering adjacent waterbodies. Removal typically occurs through filtration, deposition, infiltration, absorption, adsorption, decomposition and volatilization.

**Education/Outreach.** MM 6D promotes the establishment of programs to develop and disseminate scientific information on wetlands and riparian areas and to develop greater public and agency staff understanding of natural hydrologic systems—including their functions and values, how they are lost, and the choices associated with their protection and restoration.

## **6.0 WETLANDS, RIPARIAN AREAS, AND VEGETATED TREATMENT SYSTEMS**

### **IMPLEMENTATION AUTHORITIES**

#### **Management Measures**

- 6A. Protection of Wetlands and Riparian Areas
- 6B. Restoration of Wetlands and Riparian Areas
- 6C. Vegetated Treatment Systems
- 6D. Education/Outreach

**Management Measure 6A — Protection of Wetlands and Riparian Areas**

Protect from adverse effects wetlands and riparian areas that serve to reduce NPS pollution; maintain this function while protecting the other existing functions of these wetlands and riparian areas as measured by characteristics such as vegetative species composition, diversity, and cover, hydrology and quality of surface water and ground water, geochemistry of the substrate, and fauna species composition, diversity, and abundance.

**Management Measure 6B — Restoration of Wetlands and Riparian Areas**

Promote the restoration of the pre-existing functions in damaged and destroyed wetlands and riparian systems in areas where the systems will serve to reduce NPS pollution.

**Management Measure 6C — Vegetated Treatment Systems**

Promote the use of engineered vegetated treatment systems such as constructed wetlands or vegetated filter strips where these systems will serve to reduce NPS pollution.

Agency	Authority	Programs	Implementing Area	Notes
<b>Various State and Local</b>	<ul style="list-style-type: none"> <li>• CEQA (PRC §§ 21000 et seq.)</li> <li>• CEQA Guidelines (Title 14 CCR §§ 15000 et seq.)</li> </ul>	Environmental review of “projects” using Initial Study (Environmental Checklists), EIR, or Negative Declaration	Statewide	<ul style="list-style-type: none"> <li>• Environmental Checklists help to identify potential NPS impacts.</li> <li>• EIR or Negative Declaration may identify mitigation measures to protect/restore wetlands or use vegetated treatment systems.</li> </ul>
<b>Cities/Counties</b> (CA contains 58 counties and approximately 468 incorporated cities.)	<ul style="list-style-type: none"> <li>• PZL (Gov. Code §§ 65000 et seq.)</li> <li>• SbMA (Gov. Code §§ 66410 et seq.)</li> <li>• CCA § 30500</li> </ul>	<ul style="list-style-type: none"> <li>• General Plans/GP updates</li> <li>• LCPs/LCP amendments</li> <li>• Zoning ordinances</li> <li>• Subdivision ordinances</li> <li>• Permits pursuant to above</li> <li>• Enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Statewide</li> <li>• LCP policies/ordinances apply in coastal zone</li> </ul>	<ul style="list-style-type: none"> <li>• Cities/counties adopt policies/ordinances; make land-use decisions consistent with State law.</li> <li>• Enforcement tools include: inspections; fines; infractions; misdemeanors; stop work orders; and general police powers to protect public health, safety and welfare and declare, prohibit, and abate nuisances.</li> </ul>
<b>SWRCB/RWQCB</b>	<ul style="list-style-type: none"> <li>• CWA (33 USC § 1251 et seq.)</li> <li>• PCWQCA (WC §§ 13000 et seq.)</li> </ul>	• CWA § 401 Certification Program	Statewide at local level	<ul style="list-style-type: none"> <li>• Regulate impacts to wetland/riparian areas</li> <li>• Develop CEQA guidance</li> <li>• Establish interagency agreements</li> <li>• Develop technical assistance/guidance</li> <li>• Alternatives to flood management approaches</li> </ul>
<b>RWQCB</b>	CEQA (PRC §§21000 to 21177)	Environmental Review	Statewide	Comments on watershed scale and project-specific impacts to riparian/wetland areas

<b>CCC</b>	<ul style="list-style-type: none"> <li>• CCA (PRC §§ 30000 et seq.)</li> <li>• CCC's Administrative Regulations (Title 14 CCR §§ 13000 et seq.)</li> <li>• CCMP pursuant to CZMA (16 USC §§ 1451 et seq.)</li> </ul>	<ul style="list-style-type: none"> <li>• Coastal development permits</li> <li>• LCP certification/ amendments</li> <li>• Federal consistency: review of federal actions affecting land or water uses or natural resources of the coastal zone</li> <li>• Enforcement</li> </ul>	Coastal zone (includes tidelands, submerged lands, public trust lands).	<ul style="list-style-type: none"> <li>• CCC certifies LCPs prepared by coastal cities/counties.</li> <li>• Federal projects, permits and licenses must be found consistent with the CCMP before they are implemented.</li> <li>• Enforcement tools include: file complaint for civil penalties; issue cease and desist orders; and issue restoration orders.</li> </ul>
<b>SFBCDC</b>	<ul style="list-style-type: none"> <li>• MPA (Gov. Code §§ 66600 et seq.), including SFB Plan</li> <li>• SMPA (PRC §§ 29000 et seq.)</li> <li>• CCMP pursuant to CZMA (16 USC §§ 1451 et seq.)</li> </ul>	<ul style="list-style-type: none"> <li>• Designation of priority uses adjacent to Bay</li> <li>• Permitting: development permits and marsh development permits</li> <li>• Federal consistency</li> <li>• Enforcement</li> </ul>	SFB (shoreline areas within 100 ft. of SFB; tidal areas and specified tributaries; Suisun Marsh)	<ul style="list-style-type: none"> <li>• Federal projects, permits and licenses must be found consistent with the CCMP, before they are implemented.</li> <li>• Enforcement/federal consistency authorities similar to CCC.</li> </ul>
<b>DFG</b>	<ul style="list-style-type: none"> <li>• FGC § 1 et seq. <ul style="list-style-type: none"> <li>◆ FGC §§ 1600-1603</li> <li>◆ California Endangered Species Act (CESA)</li> </ul> </li> <li>• California Wetlands Conservation Policy, 1993 (CWCP)</li> </ul>	<ul style="list-style-type: none"> <li>• Streambed alteration permits for grading, filling, dredging activities in State waters or stream beds</li> <li>• MOU between DFG, DWR, Cal/RA, and SRB to implement habitat protection provisions</li> </ul>	Statewide: State waters or stream beds (including wetlands)	<ul style="list-style-type: none"> <li>• In streambed alteration agreements, DFG suggests fish and wildlife protection measures; measures accepted by project proponent become part of an enforceable agreement.</li> <li>• FGC focus includes control of erosion and sedimentation.</li> <li>• CWCP calls for no net wetlands loss and a long-term net gain in the quantity/quality/permanence of wetland acreage and values.</li> </ul>
<b>WCB</b>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Wetland purchase and riparian purchase/restoration programs (e.g., Riparian Habitat Conservation Program [RHCP], CVJV)</li> </ul>	<ul style="list-style-type: none"> <li>• Statewide</li> <li>• Central Valley</li> </ul>	Acquires, restores, and enhances wetlands and riparian areas

<b>SLC</b>	<ul style="list-style-type: none"> <li>• PRC §§ 6000 et seq. (includes lease authority)</li> <li>• Kapiloff Land Bank Act (PRC §§8600 et seq.)</li> </ul>	<ul style="list-style-type: none"> <li>• SLC leases (PRC §6501.1)</li> <li>• Kapiloff Land Bank Fund</li> </ul>	<ul style="list-style-type: none"> <li>• Ungranted State sovereign lands</li> <li>• Statewide</li> </ul>	<ul style="list-style-type: none"> <li>• SLC may lease sovereign lands for wetlands habitat preservation and/or restoration.</li> <li>• As trustee of the Kapiloff Land Bank Fund, SLC acquires lands for wetlands restoration and preservation. These lands then take on the characteristics of sovereign tide and submerged lands.</li> <li>• Granted lands are monitored to ensure compliance with the Public Trust.</li> <li>• Enforcement tools include: insurance, indemnity, bonding, remediation, inspections, fines, stop work orders, termination of lease, etc</li> </ul>
<b>SCC</b>	CPRC Chapter 6, Div 21	CREP	Coastal zone and coastal watersheds, statewide	<ul style="list-style-type: none"> <li>• The SCC implements many projects to protect wetlands and riparian areas through acquisition of fee or less-than-fee interests in land.</li> <li>• SCC implements many projects that restore wetlands and riparian areas through the development of enhancement plans and undertaking efforts to alter hydrology, replant vegetation, and restore fisheries habitat.</li> <li>• SCC has helped on a few occasions to actually construct wetlands that serve as vegetated treatment systems to reduce NPS pollution.</li> </ul>

The following BACKUP AUTHORITIES pertain to Urban Management Measures 6A, 6B, and 6C				
Agency	Authority	Programs	Implementing Area	Notes
<b>SWRCB/RWQCBs</b>	PCWQCA (WC §§ 13000 et seq.)	<ul style="list-style-type: none"> <li>• WQCP (Basin Plans)</li> <li>• WDRs</li> <li>• NPSMP</li> <li>• WMI</li> </ul>	Statewide	<ul style="list-style-type: none"> <li>• Enforcement tools: Cleanup and Abatement Orders; Cease and Desist Orders; Administrative Civil Liability</li> <li>• RWQCBs have primary responsibility for individual permitting, inspection and enforcement.</li> </ul>
<b>DFG</b>	FGC § 1 et seq.	<ul style="list-style-type: none"> <li>• Enforcement</li> <li>• Reporting</li> </ul>	Statewide	<ul style="list-style-type: none"> <li>• Enforcement: DFG wardens enforce water pollution control sections of FGC (e.g., §§ 5650)</li> <li>• Reporting: DFG staff report chronic (sublethal, long-term) water pollution conditions to RWQCBs and cooperate in obtaining corrections or abatements to the condition.</li> </ul>
<b>DPR</b>	Div. 1, Chapter 1.25, Div. V, PRC §5000 et seq.		SPS	DPR operates and maintains units of the SPS in and around wetlands.
<b>DHS</b>	HSC § 116275 et seq.	Drinking water source assessment and protection, drinking water sampling and analysis regulation of public drinking water systems	Watersheds associated with drinking water sources	Assessment of potential contaminating activities in watershed; self-determined protection programs by drinking water systems and communities; collection of data on contaminants in drinking water supplies for the evaluation of water quality.

Other Efforts that pertain to Management Measure 6A, 6B, and 6C				
Agency	Authority	Programs	Implementing Area	Notes
<b>DWR</b>	<ul style="list-style-type: none"> <li>California Urban Creeks Restoration and Flood Control Act of 1984 (CUCRFCA)</li> <li>DFPP</li> </ul>	<ul style="list-style-type: none"> <li>Technical Assistance</li> <li>MOU between DWR, DFG, Cal/RA, and SRB to implement habitat protection provisions</li> </ul>	<ul style="list-style-type: none"> <li>Statewide</li> <li>SFB Delta</li> </ul>	<ul style="list-style-type: none"> <li>DWR works with citizens and local agencies to address bank erosion and flooding problems of urban streams.</li> </ul>
<b>CARCDs and NRCS</b>		<ul style="list-style-type: none"> <li>Technical Assistance</li> <li>Financial (assistance with grants to farmers)</li> </ul>	<ul style="list-style-type: none"> <li>Statewide</li> </ul>	RCDs/NRCS assist farmers in making wetland determinations of agricultural lands.
<b>State/local/federal agency participation in CA's</b> <ul style="list-style-type: none"> <li>NMSs</li> <li>NERRs</li> <li>NEPs</li> </ul>	<ul style="list-style-type: none"> <li>MPRSA (16 USC § 1431 et seq.)</li> <li>CZMA § 315</li> <li>CWA § 320 (33 USC § 1330)</li> </ul>	<ul style="list-style-type: none"> <li>MBNMS WQPP</li> <li>SMBRP</li> <li>SFB</li> </ul>	<u>NMSs:</u> <ul style="list-style-type: none"> <li>Monterey Bay</li> <li>Channel Islands</li> <li>Cordell Bank/ Gulf of the Farallones</li> </ul> <u>NERRs:</u> <ul style="list-style-type: none"> <li>Elkhorn Slough</li> <li>Tijuana River</li> </ul> <u>NEPs:</u> <ul style="list-style-type: none"> <li>SMB, SFB and Morro Bay</li> </ul>	The MBNMS WQPP is a collaborative effort of federal, State and local agencies and public and private groups to address NPS pollution in the region's watersheds. An MOA has been signed by: NOAA; USEPA, Region 9; Cal/EPA; SWRCB; RWQCB 2 (SFB); RWQCB 3 (Central Coast); CCC; and AMBAG.
<b>Wetlands Research Project (WRP) (partnership of State and federal agencies with wetland responsibilities)</b>		<ul style="list-style-type: none"> <li>Southern CA Wetlands Inventory (Carpenteria Salt Marsh, Mugu Lagoon, Malibu Lagoon, Ballona Wetlands, Bolsa Chica Wetlands, Upper Newport Bay, N. San Diego County Lagoons, Tijuana Estuary)</li> </ul>	So. California	WRP designed as a vehicle "to accelerate the pace, the extent and the effectiveness of coastal wetland restoration in the Southern California Bight. Includes Planning and Public Education programs

**Management Measure 6D — Education/Outreach**

Implement educational programs to provide greater understanding of watersheds, to raise awareness and increase the use of applicable management measures and practices for wetlands and riparian areas, and to promote projects which retain or re-establish natural hydrologic functions. Public education, outreach, and training programs should involve applicable user groups and the community.

[Refer to the Wetlands, Riparian Areas, and Vegetated Treatment Systems Management Measures 6A – 6C listed in this document.]

Agency	Authority	Programs	Implementing Area	Notes
<b>SWRCB/ RWQCBs</b>	<ul style="list-style-type: none"> <li>PCWQCA [WC §§ 13000 et seq.]</li> </ul>	<ul style="list-style-type: none"> <li>Basin Plans</li> <li>Education</li> </ul>	<ul style="list-style-type: none"> <li>Statewide</li> </ul>	
<b>CCC</b>	<ul style="list-style-type: none"> <li>CCA (PRC §§ 30000 et seq.), particularly §§ 30012 and 30006.5</li> </ul>	<ul style="list-style-type: none"> <li>Education</li> <li>Guidance Manuals (Polluted Runoff, Wetlands, Wetlands Mitigation Banking, LCP Periodic Reviews)</li> </ul>	<ul style="list-style-type: none"> <li>coastal zone</li> </ul>	
<b>SFBCDC</b>	<ul style="list-style-type: none"> <li>MPA (Gov. Code §§ 66600 et seq.), including SFB Plan</li> <li>SMPA (PRC §§ 29000 et seq.)</li> </ul>	<ul style="list-style-type: none"> <li>Education</li> </ul>	SFB (shoreline areas within 100 ft. of SFB; tidal areas and specified tributaries; Suisun Marsh)	
<b>DFG</b>	<ul style="list-style-type: none"> <li>FGC §§ 1600 et seq.</li> </ul>	<ul style="list-style-type: none"> <li>Education and Technical/ Financial Assistance</li> <li>MOU between DFG, DWR Cal/RA, and SRB to implement habitat protection provisions</li> </ul>	<ul style="list-style-type: none"> <li>Statewide</li> </ul>	MOU among DRF, DWR, Cal/RA, and SRB to implement habitat protection provisions.
<b>DHS</b>	HSC § 116275 et seq.	Drinking water source assessment and protection, drinking water sampling and analysis; regulation of public drinking water systems	Watersheds associated with drinking water sources	Assessment of potential contaminating activities in watershed; self-determined protection programs by drinking water systems and communities; collection of data on contaminants in drinking water supplies for the evaluation of water quality.
<b>DPR</b>	Div. 1, Chapter 1.25, Div. V, PRC §5000 et seq.		SPS	DPR has an extensive educational program that includes displays, talks, curriculum development and special programs.

<b>DWR</b>	<ul style="list-style-type: none"> <li>• CUCRFCA</li> </ul>	<ul style="list-style-type: none"> <li>• Urban Streams Restoration Program</li> <li>• Technical Assistance</li> <li>• MOU between DWR, DFG, Cal/RA, and SRB to implement habitat protection provisions</li> </ul>	<ul style="list-style-type: none"> <li>• Statewide</li> </ul>	DWR works with citizens and local agencies to address bank erosion and flooding problems of urban streams.
<b>SCC</b>	PRC Chapter 6, Div 21	CREP; Coastal Access Program; Education and Technical/Financial Assistance	Coastal zone and coastal watersheds, statewide	SCC can provide interpretive signs as part of its coastal resource or access projects to educate the public about a multitude of coastal issues, including NPS pollution, wetland and other habitat values, functions and processes.
<b>SLC</b>	<ul style="list-style-type: none"> <li>• PRC §§ 6000 et seq.</li> </ul>	<ul style="list-style-type: none"> <li>• Education</li> </ul>	Ungranted tide- and submerged lands owned by State (PRC § 6301)	
<b>CARCDs and NRCS</b>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Technical Assistance</li> <li>• Financial (assistance with grants to farmers)</li> </ul>	<ul style="list-style-type: none"> <li>• Statewide</li> </ul>	RCDs/NRCS assist farmers in making wetland determinations of agricultural lands.
<b>State/local/federal agency participation in CA's</b>	<ul style="list-style-type: none"> <li>• MPRSA (16 USC § 1431 et seq.)</li> <li>• CZMA § 315</li> <li>• CWA § 320 (33 USC § 1330)</li> </ul>	<ul style="list-style-type: none"> <li>• MBNMSWQPP</li> <li>• SMBRP</li> <li>• SFEP</li> </ul>	<u>NMSs:</u> <ul style="list-style-type: none"> <li>• Monterey Bay</li> <li>• Channel Islands</li> <li>• Cordell Bank/ Gulf of the Farallones</li> </ul> <u>NERRs:</u> <ul style="list-style-type: none"> <li>• Elkhorn Slough</li> <li>• Tijuana River</li> </ul> <u>NEPs:</u> <ul style="list-style-type: none"> <li>• SMB, SFB and Morro Bay</li> </ul>	Includes numerous education efforts/actions.