

## **Introduction**

The primary purpose of these protocols is to provide the standardization in data collection that is needed to compare wetland projects to one another and over time, within the context of ambient variability.

The rationale for these protocols is provided in the accompanying Part 1 of the version 1 WRMP plan. These protocols are designed to address common wetland management questions and to be consistent with the conceptual models of wetland form and function that are summarized in the Science Framework of the WRMP.

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These protocols vary in their requirements for professional oversight during their use. All of the protocols require experienced personnel to locate sample plots and stations, and to interpret the monitoring data. However, for most of these protocols, trained volunteers can assist in data collection. In some cases, volunteers are needed to get all the data collected within the prescribed sampling period.

Personnel with much experience in wetland science and monitoring are also needed to determine which protocols to use. Although these protocols are for collecting basic data, they might not all be used at any given sampling site.

To maximize the information content of the data that are collected with these protocols, the data authors will need to collaborate closely during data collection and during analysis. Where and when the data are collected can be as important as the methods of data collection for integrating across the data types.

Copies of any data collected using these protocols should be sent to the WRMP for archival storage and public sharing.

The WRMP would be thankful for any comments on these protocols.

## **Permit Requirements**

Permits are necessary for collecting data in some tidal marshes and for any monitoring of special status species. Monitoring special status species requires a Section 10A permit issued by the US Fish and Wildlife Service (USFWS), a current Memorandum of Understanding (MOU) with the California Department of Fish and Game (CDFG), and a current Scientific Collecting Permit also issued by CDFG which reflects the conditions of the 10A permit. Some agencies, such as the USFWS, the East Bay Regional Park District, and the CA Department of Parks and Recreation require access permits for their properties.

## Selected Indicators

The WRMP has focused on tier-3 pressure and state indicators that could be used for either wetland tracking or project monitoring. Tier-1 and tier-2 indicators will be developed during FY 2002-03. The Focus Teams have nominated a broad range of tier-3 indicators. The nominations followed from a review of indicators that are used in other monitoring efforts in this region and elsewhere (see Part 1). The indicators that were nominated by the Focus Teams have been arrayed in a matrix that shows their relationships to each other and to the major compartments of the tidal marsh ecosystem (see Appendix D of Part 1).

### Indicators Selected for Protocol Development in FY 2001-03

*Based on the priority management questions and the conceptual models, the most important protocols for monitoring tidal marshes at this time are for project mapping, tidal elevation, sedimentation, contamination, plant community structure, status of protected species, and avian support.*

Monitoring Activity	Indicators Selected for Protocol Development In FY 2002-03	Schedule of Protocol Development
Landscape Characterization	Wetland mapping and characterization for tracking projects	Winter 2002-03
	Watershed-based human population demographics	Winter 2002-03
	Wetland habitat fragmentation and connectivity	Winter 2002-03
	Wetland buffer structure and composition	Winter 2002-03
	Wetland habitat patch size-frequency	Winter 2002-03
	Tidal marsh channel density	Winter 2002-03
Rapid Assessment of Projects or Ambient Status and Trends	Wetland size	Summer 2003
	Buffer condition	Summer 2003
	Hydrology	Summer 2003
	Habitat abiotic structure	Summer 2003
	Habitat biotic structure	Summer 2003
	Living resources	Summer 2003
	Special habitats	Summer 2003
Intensive Assessment of Projects or Ambient Status and Trends	Datum reckoning and tidal elevation	Winter 2002-03
	Sedimentation-erosion tables	Available
	Tidal marsh contaminants	Available
	Plant community structure	Available
	Benthic macroinvertebrate community	Available
	California red-legged frog	Available
	Salt marsh harvest mouse	Available
	River otter	Available
	Yuma bat	Available
	Hérons and Egrets	Available
	Gulls and Terns	Available
	Passerine birds	Available
	Rails	Available
	Shorebirds	Available
	Waterfowl	Available
Regional Survey of Invasive Cordgrass	Available	