

## **Improving monitoring and assessment of wetland and riparian areas in California through implementation of a Level 1, 2, 3 Framework**

Produced by:

Eric D. Stein<sup>1</sup>, Martha Sutula<sup>1</sup>, Ross Clark<sup>2</sup>, Adam Wiskind<sup>3</sup> and Joshua N. Collins<sup>4</sup>

<sup>1</sup>*Southern California Coastal Water Research Project, Costa Mesa, CA*

<sup>2</sup>*California Coastal Commission, Santa Cruz, CA*

<sup>3</sup>*Moss Landing Marine Biology, Moss Landing, CA*

<sup>4</sup>*San Francisco Estuary Institute, Oakland, CA*

### **EXECUTIVE SUMMARY**

California wetlands, streams, and watersheds have been dramatically altered by human activities over the past 150 years. The primary threats to wetlands are discharges of dredge or fill material, excavation, and habitat degradation from external stressors such as point and non-point source (NPS) pollution. Protecting and managing wetlands and streams are complicated by the fact that no single agency has authority over aquatic resources and multiple programs within an agency may have authority or regulatory control over wetlands. A comprehensive wetlands and riparian monitoring program is needed to in order to improve program coordination to sustainably manage wetland resources and the stressors that affect them.

The purpose of this paper is to describe the basic components of a comprehensive wetlands and riparian assessment program, based on USEPA's recommended framework and provide recommendations on incorporation of existing wetland assessment tools into agency programs. This paper will: 1) present an overview of the existing tools; 2) discuss how these tools can be used to inform decisions regarding wetland and riparian resources, and improve coordination and efficiency of various State and Federal wetland programs; and 3) identify key technical and administrative actions necessary to achieve these goals.

The conceptual approach and collection of existing wetland and riparian assessment tools is modeled after USEPA's Level 1-2-3 framework for monitoring and assessment of wetland resources (USEPA 2006). The fundamental elements of this framework are:

- Level 1: consists of wetland and riparian inventories, landscape profiles, and assessment of stressors from upstream and surrounding land uses.
- Level 2: consists of rapid assessment, which uses cost-effective field-based diagnostic tools to assess the condition of wetland and riparian areas.
- Level 3: consists of intensive assessment to provide data to validate rapid methods, characterize reference condition, and diagnose the causes of wetland condition.

Existing tools that support the Level 1-2-3 framework include: 1) standardized wetland and riparian mapping methodologies; 2) tools to assess landscape scale stressors; 3) California Rapid Assessment Method (CRAM) for routine, cost-effective assessments of wetlands and riparian condition; and 4)

Project Tracking, which is an online data management system consisting of data and maps collected and shared among agencies and the public on projects that impact wetland and riparian areas.

Implementation of a standardized wetland and riparian assessment toolkit, recently initiated through an EPA grant to the Resources Agency, can address several key needs presented by the diversity of state and federal programs in California. These needs include:

- o *Providing data to better inform management decisions, including the analysis of cumulative impacts.*

Implementation of the monitoring toolkit within the Level 1-2-3 framework provides the means for a cost-effective, holistic assessment of ambient extent and condition of aquatic resources and other beneficial uses. These tools can be applied at the state, region, or watershed scale to inform management actions and prioritize recovery efforts. CRAM can be seamlessly integrated with other bioassessment tools to more comprehensively assess the status of aquatic life use and other beneficial uses in waters of the State. CRAM can also be used as screening tool to identify when more detailed assessments are necessary. Inventories and probability-based surveys using CRAM allow a cost-effective estimate of general baseline conditions of wetlands and riparian areas in a watershed or across the state as a whole. These data can then be used to identify specific stressors that need to be managed and used as mechanism to prioritize areas for recovery or conservation. The combination of inventories, CRAM and project tracking will allow agencies and the general public to spatially display the locations of projects, including restoration projects, impact sites, and mitigation sites. This will protect against impacting past mitigation or restoration areas, and will promote watershed-scale planning and management activities. Probability-based surveys and consistent protocols also provide context to interpret data obtained from site-specific assessments. Such watershed scale perspectives are consistent with pending Federal mitigation policies, which emphasize a watershed approach. Finally, use of CRAM and Project Tracking would make it easier to track and assess cumulative impact issues.

- o *Standardizing data protocols to improve coordination between agencies and programs.* This includes common definitions of wetlands and riparian areas, approaches for classification, consistent assessment tools, and common data management platforms and standardized data transfer formats. Wetland and riparian inventories, CRAM, and project tracking provide a common set of tools and assessment language that all agencies can use to articulate wetland change on an ongoing basis due to permitted impacts, compensatory mitigation, and non-regulatory restoration and provide public access to this information.

- o *Generating information that can be used to assess the effectiveness of wetland programs and funding, including common performance measures for restoration and mitigation projects.* Information on the effectiveness of extensive public investments in wetland and riparian resource conservation, recovery and management is not readily available to resource managers, regulators, elected officials, NGO's, and the public because the condition of wetlands and riparian habitat is not being monitored systematically. Incorporation of the level 1-2-3 framework into agency programs will provide an opportunity to evaluate the effectiveness of public investment in conservation and restoration of these resources. Recent reviews of both the State and Regional Water Board water quality certification programs have identified poor record keeping and data inaccessibility as barriers to program review and evaluation, and to compliance assessments. Use of Project Tracking would help remedy this situation by providing a central repository of data on impact, mitigation, and restoration sites in a format that is easy to update and query, and is accessible to all agencies.

Substantial progress has been made toward implementation of standardized wetland and riparian inventories, landscape assessment tools, CRAM, and Project Tracking into various agency programs. To achieve broader success in implementing all elements of the Level 1-2-3 framework in agencies across

the State of California, funding should be secured to address outstanding technical needs and the following programmatic needs should be addressed:

1. Strengthen agency participation and leadership in Statewide Steering Committee created through EPA-funded WDP grant to provide ongoing mechanism for coordination and identification of common assessment needs and priorities. This workgroup, which could work under the auspices of the newly formed Monitoring Council, should include representation of major regulatory and management agencies and key technical partners.
2. Develop a long-term strategy for the implementation of a statewide wetlands and riparian assessment program, including identification of short- and near-term priorities and an action plan to address these priorities.
3. Develop guidance for implementation of CRAM and Project Tracking in respective agency programs.
4. Develop regional teams for areas of the State currently underserved by the implementation effort. In particular, additional staff support for the Regional Boards outside the coastal zone is needed. This would include the Central Valley, Lahontan, and Colorado River Basin Regional Boards.
5. Develop and implement a training program for both agency staff and environmental consultants on an ongoing basis.
6. Incorporate wetlands monitoring into the Surface Water Ambient Monitoring Program (SWAMP).
7. Develop a Quality Assurance (QA) process for using Project Tracking and CRAM for permit and/or project specific monitoring. This should include routine audits of data and a process for field verification of CRAM assessments at a subset of sites.
8. Many agencies already have databases they use for project tracking. Ultimately, a process should be developed to allow sharing of data between existing agency databases and harvesting of data between Project Tracking and other agency databases. This would prevent the need for duplicate data entry, while still allowing agencies to maintain their own databases.
9. Identify a single agency or agencies to manage Project Tracking and CRAM data. This may be a State Agency or via a “data center” concept, such as that being proposed by the SWAMP program.
10. Secure a sustained source of funding for data management, QA, ongoing tool refinement and development, training and technical support, and ongoing coordination.

## **Full Text**

[ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/555\\_SWAMP\\_Level\\_1\\_2\\_3\\_whitepaper.pdf](ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/555_SWAMP_Level_1_2_3_whitepaper.pdf)