

**Progress Report
California Wetland Monitoring Workgroup
November 15, 2011**

Mission of the CWMW

To improve the monitoring and assessment of wetland and riparian resources by developing a comprehensive wetland monitoring plan for California and increasing coordination and cooperation among local, state, and federal agencies, tribes, and non-governmental organizations.

Recommendations to the Council

The CWMW mission will allow California to implement recommendations of the 2010 State of the State's Wetland Report and will position the State to be able to more accurately assess wetland program activities in the next statewide report. The following recommendations support this overall goal:

Recommendation 1: Agency secretaries should direct their boards, departments, and commissions to implement the Wetland Tenets document through regulatory, grant funded, and assessment programs involving wetlands or streams.

Recommendation 2: The Council should identify the Department of Water Resources (DWR) and the Department of Fish and Game (CDFG) to act as state level stewards the stream network, using the California version of the National Hydrography Dataset (NHD) and the California version of the National Wetlands Inventory (NWI), respectively. The DWR and CDFG should work together to integrate NHD and NWI into the overall California Aquatic Resources Inventory (CARI) and provide public access to the data layers through the Wetlands Portal.

Recommendation 3: The Council should identify agency or program resources for implementing training, quality control, and data management for the standard tools identified in the Wetland Tenets document, including the California Rapid Assessment Method (CRAM), and wetland and stream mapping.

California in Context of the United States

On October 7th, 2011, the U.S. Fish and Wildlife Service released its 5th report on status and trends of wetland extent in the coterminous United States, covering the period of 2004-2009 (<http://www.fws.gov/wetlands/StatusAndTrends/>). An important finding of this report is that over the last five years, national wetland losses have outpaced wetland gains, reversing the trend of improving wetland protection dating back to the 1950s. The reasons for this change are complex and the report cites national economics, land use trends, resource extraction, climate change, and changing regulatory and enforcement practices as contributing factors. Several findings of note for California are that California experienced some of most prevalent conversion of wetlands to open water ponds in the Western United States, and that outside of the Great Lakes, Southeast and Northeast, the Bay-Delta region was highlighted as a "high loss" region of the Country. The report concludes that State programs are critical to overall wetland protection efforts.

Overall Assessment of Success of the CWMW

The CWMW transitioned over the past year from planning to implementation. Following development of the Wetland and Riparian Area Monitoring Program (WRAMP) and its endorsement by the California Water Quality Monitoring Council, the CWMW worked with several large infrastructure projects on initial WRAMP implementation. These projects will serve as case studies for how to implement WRAMP and will help build institutional capacity among both regulated entities and regulators for program implementation. The CWMW also continued to coordinate ongoing development of new and updated monitoring and assessment tools. A substantial challenge for CWMW continues to be allocation support agency staff time for coordination activities. Also, as WRAMP begins to be implemented, data management capacity and coordination with CEDEN will need to be directly addressed.

Early Implementation of the Wetland and Riparian Area Monitoring Program (WRAMP)

The goals of the WRAMP are to produce regular reports on trends in wetland, riparian and surface water extent and condition, and then to relate these trends to management actions, climate change, and other natural and anthropogenic factors in ways that inform future decisions. The WRAMP is a plan that is designed to be implemented through existing agency programs in a manner that supports decision making and information sharing between programs and agencies.

Over the past year, elements of WRAMP have been implemented in the following programs:

- Santa Clara Valley Water District
- Central Valley Flood Protection Program – Department of Water Resources
- High Speed Rail
- Willits Bypass
- California Energy Commission solar array projects

The CWMW also accomplished the following over the past year:

- Served as the forum for statewide coordination of wetland and riparian monitoring and assessment.
- Provided oversight for the further development and implementation of CRAM and other rapid assessment methods through its Level 2 Assessments Committee. This “L2” committee meets at least quarterly and serves as the primary technical coordination entity for rapid assessment program development and implementation.
- Served as an inter-agency review body for technical memoranda produced by the Technical Advisory Team (TAT) for the Wetland and Riparian Area Protection Policy WRAPP.
- Produced a draft interagency technical bulletin on process for WRAMP implementation.
- Supported USEPA National Wetland Condition Assessment Program by coordinating the sampling of USEPA’s California sites.
- Initiated development of a state ambient monitoring and assessment program for depressional wetlands. This builds on past success in assessment of riverine and estuarine wetlands.
- Continued to refine and improve the Wetlands Portal and initiated coordination with other “Are our Ecosystems Healthy” Portals, such as the Healthy Streams Portal and the Estuary Portal.

Key activities toward implementation of the WRAMP are occurring in the following areas:

Level 1 (Mapping) is the Foundation of the Program

Progress was made over the past year on one of the main CWMW goals of development of the California Aquatic Resources Inventory (CARI) as a standard base layer for all map-based data management and query tools. Standard methods to map wetlands, streams, other aquatic areas, and the associated riparian areas have been developed and favorably reviewed by The National Wetland Inventory (NWI) of the USFWS, the National Hydrography Dataset (NHD) of the USGS, and the California Riparian Habitat Joint Venture. The methods have been implemented over the past year in by SFEI in the Bay Area, by SCCWRP along the Southern California coast, and by the Lahontan Regional Water Board, in cooperation with other regional stakeholders, in the Tahoe Basin. Additional work is underway with the State Water Board and DWR to develop high resolution wetland, stream, and riparian maps in other regions of the State such as the Central Valley. One continuing challenge has been the lack of a statewide steward for NHD, a role currently being considered by the Department of Water Resources.

Development of a wetland status and trends program was also initiated this year using funds provided by USEPA. This program will allow that state to assess extent and distribution of wetlands throughout the state and the change over time using probabilistic sampling design, similar to the one used by the National Status and Trends program. This effort will fulfill one of the primary recommendations from the State of the State's Wetlands report.

Level 2 (Rapid Assessment of Overall Condition and Stressors of Aquatic Areas) is the Key to Coordination

The CWMW has established a Statewide Level 2 Committee to guide the training, use, and further development of the California Rapid Assessment Method (CRAM). The L2 Committee operates under a work plan that is subject to routine review and approval by CWMW. Since 2008 CRAM has been included in the State Water Board's Perennial Stream Assessment (PSA), as administered by the Surface Water Ambient Monitoring Program (SWAMP). The State Water Board is finishing the final steps of the peer review of CRAM, a necessary step for integrating CRAM into policy and regulation.

The current work plan reflects the fact that the L2 Committee is the only existing technical committee of the CWMW and therefore does some of the L1 and other technical work of the CWMW, beyond its primary L2 concerns. Key products and accomplishments in 2011 include:

1. Conducted seven three-day practitioner training courses and four two-day agency courses. Since 2008, approximately 25 CRAM trainings for over 400 individuals have been conducted at Central Coast, North Coast, San Francisco, Sacramento, South Coast and Lake Tahoe/Sierra locations. The CRAM team has also run training courses in Texas, Oklahoma, Montana, and New Mexico. A total of 37 training requests were received in 2011, of 102 received to date. An average of 3-4 training requests per month is received.
2. Uploaded at least 351 CRAM assessments into the CRAM database. This brings the database up to a total of 1,986 assessments on record.
3. Made substantial progress on new modules for vernal pools, depressional wetlands, seasonal tidal estuaries, wet meadows, and arid-episodic streams through the efforts of regional teams comprised of a broad range of agency and academic staff.
4. Prepared a "Five Year Wetland Work Plan and Implementation Strategy" for CWMW. This work plan is consistent with USEPA guidance, and is a key qualification for many federal funding programs. The work plan was signed-off by both the State Water Board and the Department of Fish and Game.
5. Developed and began implementation of an outreach strategy that includes standard presentations and factsheets about the Monitoring Council, CWMW, WRAMP and funding strategies. The plan calls for outreach to the habitat joint ventures and other potential WRAMP partners.

6. Completed Phase 1 development of a regionally-based network of reference wetlands in California. This project, which compiles information on 95 wetland reference standard sites from seven regions of California, is intended to support the efforts of various state and federal agency-specific programs that require the use of reference wetland sites. The data gathered at these sites will be available to a wide range of users via the California wetlands web portal.

Level 3 (Intensive Assessment of Condition or Stress of Aquatic Areas Provides Additional Information

SWAMP's Perennial Stream Assessment has incorporated CRAM, providing an opportunity to concurrently evaluate wadeable streams using Level 2 (CRAM) and Level 3 (benthic invertebrates, stream algae, and physical habitat or PHab) protocols. In addition, the San Diego, Santa Ana, and Los Angeles Regional Water Boards have recently initiated an ambient assessment program for depressional wetlands (funded and coordinated through the SWRCB's Surface Water Ambient Monitoring Program). This program will include refinement and, if feasible, validation studies of the depressional module of CRAM and development of new Level 3 indicators for depressional wetlands. Level 3 protocols have also been developed for vernal pools in association with the ongoing vernal pool CRAM module development and validation process. Finally, the USEPA recently awarded a grant to the Santa Monica Bay Restoration Commission (SMBRC) to develop and test Level 3 protocols for estuaries.

Data and Information Management

The CWMW continues to work with the California Environmental Data Exchange Network (CEDEN) to support and enhance the Regional Data Centers of the State Water Board's Surface Water Ambient Monitoring Program, including their relationship to the My Water Quality Portals of the Monitoring Council. Over the past year the CWMW initiated coordination with the Healthy Streams Partnership toward developing linkages between the wetlands and healthy streams portals, including using CARI as a common base layer. New habitats are now viewable. These include a map of eelgrass habitat for the South Coast and the Bay Area Aquatic Resources Inventory (BAARI). Reporting functionality was also improved for the San Francisco Bay Region Water Board. These improvements are expected to be available for transfer to other Regional Water Boards in 2012.

New Funding Acquired to Support CWMW Project

The CWMW continues to be successful at attracting contracts and grants to support priorities in the long-term strategy document. Over the past year, the following projects were funded.

- Development of a program for assessing status and trends in the extent and distribution of California wetlands and other aquatic areas (USEPA 104(b)(3) program);
- Updating the CRAM manual, field books and training materials (USEPA 104(b)(3) program);
- Calibration and refinement of a depressional wetland CRAM module (DOI Coastal Impact Assistance Program);
- Development and initial implementation of an ambient monitoring and assessment program for depressional wetlands (Regional Water Board applications of the State Water Board's Surface Water Ambient Monitoring Program (SWAMP) funds);
- Development of an arid and episodic stream CRAM module (USEPA 104(b)(3) program)
- Development of standard Level 3 (intensive assessment) indicators for southern California estuaries (USEPA 104(b)(3) program)
- Implementation of a pilot WRAMP in the Tahoe Basin (USEPA 104(b)(3) program);

- Implementation of a pilot WRAMP in a North Coast watershed (and thus development of a North Coast regional WRAMP Team through the Region 1 Water Board) (DOI Coastal Impact Assistance Program or CIAP).
- Development of performance curves for estuarine and riverine modules of CRAM (performance curves show the relationship between CRAM scores and the developmental stages of habitat creation, restoration, and mitigation projects) (USEPA 104(b)(3) program);
- Improvement of Wetland Tracker so that it can continue to support 1-2-3 data needs and serve as an Aquatic Atlas, as requested by the Monitoring Council (BOEMRE CIAP funds, Prop 13 & Prop 84 Data Display funding).

Emerging Developments

Over the next year, the following wetland programs will be transitioning from the development stage to implementation. These programs represent foundational elements of the State's wetland program and will provide additional opportunities for coordination among the CWMW partners:

- Release of Phase 1 of the State Water Resources Control Board's Wetland and Riparian Area Protection Policy (WRAPP).
- Programmatic implementation of CRAM by the Corps of Engineers in California, for regulatory project assessment and mitigation monitoring.
- Initial implementation of the State Wetlands Status and Trends Program and development of a funding strategy for long-term implementation.
- Completion of the first phase of the State Wetland Reference Network and development of programmatic partnerships to continue to expand, manage, and monitor reference wetlands.

Attachment 1 - List of Agencies Participating in the CWMW

State Agencies

- * California Coastal Commission
- * California Department of Fish and Game
- * California Department of Parks and Recreation
- * California Department of Water Resources
- * California Natural Resources Agency
- * California State Lands Commission
- * Central Coast Regional Water Quality Control Board
- * Central Valley Regional Water Quality Control Board
- * Los Angeles Regional Water Quality Control Board
- * San Diego Regional Water Quality Control Board
- * San Francisco Bay Regional Water Quality Control Board
- * Santa Ana Regional Water Quality Control Board
- * State Water Resources Control Board
- * California Department of Transportation

Federal Agencies

- * National Marine Fisheries Service
- * Natural Resources Conservation Service
- * U.S. Army Corps of Engineers
- * U.S. Environmental Protection Agency
- * U.S. Fish and Wildlife Service

Other Agencies and Entities

- * Humboldt Bay Harbor, Recreation and Conservation District
- * Moss Landing Marine Laboratories
- * San Francisco Estuary Institute
- * Southern California Coastal Water Research Project

NOTE: Many additional agencies, universities, private consultants and non-governmental organizations – too numerous to list - provide input to CWMW indirectly through participation with regional assessment development projects associated with the Level 2 committee.