

**Progress Report
California Wetland Monitoring Workgroup
November 30, 2012**

Mission of the CWMW

To improve the monitoring and assessment of wetland and riparian resources by developing and fostering implementation of a comprehensive wetland monitoring plan for California through increased 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 are respectfully submitted to the Council to obtain support for this effort:

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

Recommendation 2: The Council should direct the CWMW, the Data Management Workgroup and the other Ecosystem Health workgroups (currently estuaries and healthy streams) to develop a mapping strategy that will include common protocols and/or maps of streams, wetlands, and estuaries. The goal is to provide a mechanism that will result in a "common map" of aquatic resources for the State of California that can be used by the ecosystem health portals, EcoAtlas and other online information delivery systems as appropriate. The strategy should also address long-term management and stewardship.

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.

Overall Assessment of Success of the CWMW

Over the past year, the CWMW has focused on building capacity for implementation of the Wetland and Riparian Area Monitoring Plan (WRAMP). Efforts focused on building capacity for wetland mapping and assessment of status and trends, development and refinement of several CRAM modules and improved data management tools, including a substantial update of the Wetland Portal and EcoAtlas. In addition, CWMW members continued to support early adopters of WRAMP to help build institutional capacity among both regulated entities and regulators for program implementation. A substantial challenge for CWMW continues to be allocating agency staff time for coordination activities and identification of mechanisms for long-term funding of implementation.

Implementation of the Wetland and Riparian Area Monitoring Plan

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 help plan and protect the State's aquatic resources. The WRAMP is designed to be implemented through existing agency programs in a manner that supports decision making and information sharing between programs and agencies. *Because WRAMP does not reside at any one agency, dedicated staff support and funding through multiple partners benefitting from WRAMP will be necessary to*

ensure its long-term success. Staff from the State Water Resources Control Board are preparing a long-term implementation strategy and funding options in the form of an overall "business model". This will be presented to the Council in the upcoming year for their consideration.

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 (the "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, with substantial progress over the past year on stream/channel definitions (in coordination with CDFG), aquatic resource mapping protocols (CARI), and stream and wetland classification;
- Initiated identification of options for long-term CRAM training and data management, including the possible roles of the SWAMP Regional Data Centers, existing agency training programs, a dedicated new entity yet to be conceived (e.g. CASQA-like agency), existing JPAs and other NGO(s), and academic institutions..

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

Level 1 (Mapping) is the Foundation of the Program

To support various emerging Level 1 activities, the CWMW has advised and reviewed efforts by the multi-agency CARI Technical Advisory Team (CARI TAT) to recommend aquatic resource mapping standards. In effect, the CARI TAT has served as the Statewide Level 1 committee. Over the past year, the first version of the CARI mapping standards including the new California Aquatic Resources Classification System was produced. Based on these standards, the first version of the California Aquatic Resources Inventory (CARI) was also produced. This initial version of CARI is based on a combination of the National Wetland Inventory (NWI) of the USFWS, the National Hydrography Dataset (NHD) of the USGS, and intensive mapping efforts by state and federal agencies in the San Francisco Bay Area, coastal Southern California, and central Sierra Nevada foothills, Tahoe Basin, and the Sacramento and San Joaquin Delta. A new map of the vernal pool landscapes of the Central Valley and adjoining foothills is also being incorporated. CARI is being reviewed by various local, state, and federal agencies for use in their programs.

The first phase of the wetland status and trends program (S&T) was completed this year. This program would use a probabilistic sampling design, similar to the one used by the National Status and Trends program, to estimate wetland extent and distribution throughout the state. This effort, plus CARI and the "401 online" tool that tracks permitted changes in wetlands, can fulfill the State's need to track changes in wetland resources relative to regulation, management, and climate change, as called for in the State of the State's Wetlands report. Additional USEPA funds have been received for Phase 2 of this program, which will include producing the first statewide S&T sample draw and initial implementation in approximately 200 S&T plots statewide. A more detailed implementation strategy for the S&T program is being developed by the California Natural Resources Agency, Department of Fish and Game, and the State Water Resources Control Board.

Now that the CARI standards and an S&T plan have been drafted, the L1 Committee needs to focus on CARI stewardship and implementation. Further development of the L1 Committee for these purposes will be priority for the CWMW in 2013.

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 an L2 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).

As part of this work plan, the L2 Committee has been developing a new version of CRAM (CRAM 6.1). It will be released prior to the 2013 field season. This new version includes a revised manual, standalone field books for each module, an online photo library to assist in the identification of field indicators of condition, and other online support tools.

The current L2 work plan reflects some essential coordination between development of L2 and L1 tools, namely CRAM and CARI, plus information delivery systems, including especially EcoAtlas. Key products and accomplishments of the L2 Committee during 2012 include:

1. Conducted 13 CRAM trainings for about 200 individuals at Central Coast, North Coast, San Francisco, Central Valley, South Coast and Lake Tahoe/Sierra locations. Since 2007, 56 CRAM trainings have been conducted for 685 individuals. In 2012, 24 training requests were received via the online request form, which is an average of 2 requests per month. A total of 134 requests have been received since the online form was developed in 2009.
2. Uploaded 420 CRAM assessments into the CRAM database. This brings the database up to a total of 2,600 assessments on record, of which 1,329 are publically accessible.
3. Made substantial progress on new or revised CRAM modules for vernal pools, depression wetlands, bar-built estuaries, wet meadows, and arid-episodic streams through the efforts of regional teams comprised of a broad range of agency and academic technical staff. The L2 committee also coordinated an update of the riverine and estuarine modules to reflect feedback and lessons learned over the first five years of their widespread use.
4. Developed CRAM implementation QA/QC procedures. These procedures have been provided to the SWAMP roundtable for endorsement by SWAMP. This will be the first procedures endorsement by SWAMP but not developed by SWAMP.
5. Produced a first draft set of CRAM "Frequently Asked Questions" regarding implementation of CRAM in a regulatory context

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

In general, the CWMW recognizes that L3 data are needed to assess particular aspects of wetland condition with regard to particular wetland functions or service, such as endangered species support, flood control, or water quality improvement. The exact needs for L3 data tend to vary from place to place, and from program to program. In many cases, Level 3 data are necessarily case-specific. Rather than try to coordinate or standardize L3 data collection and management across its diverse sources and uses, the CWMW has focused on developing L1 and L2 tools, and on how L1-L3 data can be used in combination to improve wetland and stream assessment. For example, Level 3 data are being used to validate CRAM modules for vernal pool systems, depression wetlands, and bar-built estuary wetlands, according to the established process for module development. SWAMP has incorporated CRAM into its Perennial Stream Assessment, providing opportunities to analyze how CRAM and Level 3 methods (benthic invertebrates IBI, stream algae IBI, and physical habitat assessment or PHAB) can be used together to improve the overall efficacy of the stream surveys. The results of this analysis

should be available in 2013. In addition, the San Diego, Santa Ana, Los Angeles, and San Francisco Regional Water Boards are conducting an ambient assessment program for depressional wetlands (funded and coordinated through SWAMP). This program includes refinement of the depressional module of CRAM and adaptation of existing Level 3 indicators (e.g. aquatic invertebrates and benthic diatoms) for use in depressional wetlands.

Data and Information Management

Significant upgrades have been made to all parts of the Wetlands Data and Information Management systems over the past year.

1. A substantial update of the California Wetlands Portal was completed this year and will be launched in the first quarter of 2013. The Wetlands Portal will have new content that better answers the primary questions: where are the wetlands and how are they doing, with links to WRAMP output. The new portal will also conform to the standard My Water Quality portal design guidelines.
2. As agreed upon by the CWMW, the Wetland Tracker data management system has been renamed EcoAtlas and further developed with expanded contents and functionality to support alternatives analyses under CEQA/NEPA and mitigation planning under USESA/CESA, USCWA, and Phase 1 of the proposed Wetland Area Protection Policy of the State Water Board. The EcoAtlas will be released in the first quarter of 2013 and will include new tools to store and serve information on wetland, stream and riparian extent, condition, and management actions at the project, watershed, regional, and statewide scales. The first release of the California Aquatic Resources Inventory (CARI) will serve as the base map for EcoAtlas.
3. The CWMW has recently begun meeting with the Data Management Workgroup, the Healthy Streams Partnership and the California Estuary Monitoring Workgroup to develop linkages between the various workgroups and their portals. The initial efforts will focus on evaluation of how CARI might serve the needs of each of the ecosystem health workgroups.
4. As a standalone CRAM support site, *www.Cramwetlands.org* will be re-launched in 2013 (after the release of CRAM 6.1) with greatly improved data content and management functions. The CRAM database has been re-designed to support reference site designations, better tracking of training activities, and repeat assessments of CRAM Assessment Areas over time. This site will also provide improved access to training information and materials, and a section for information on the L2 Committee. A new version of eCRAM, the online data entry tool for uploading CRAM data, will also be released in 2013. The eCRAM upgrade includes an improved online mapper that allows users to edit and copy their maps of assessment areas, and more user-friendly forms for entering and editing assessment data.

WRAMP Pilot Projects and Early Implementation

The WRAMP framework, its component L1-L3 tools, and its data management systems continue to be revised and improved through pilot projects and early implementation efforts. Major projects that have begun using WRAMP for either alternatives analysis or mitigation planning include the Highway 101 Bypass at Willits (CalTrans), the Delta Conveyance Project (BDCP), and High Speed Rail (High Speed Rail Authority). During 2012, local and regional agencies have planned or completed watershed assessments using WRAMP in the Tahoe Basin and Santa Clara Valley. A watershed assessment based on WRAMP is being planned for a major tributary of the Russian River. Additional implementation is likely to follow from these efforts.

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

- * Roberts Environmental and Conservation Planning
- * Central Coast Wetlands Group at 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.