



EcoAtlas and CRAM in Region 6, Lahontan

At its July 2015 Board meeting, the California Regional Water Quality Control Board, Lahontan Region (Lahontan Water Board) directed its staff to develop and implement a program incorporating the use of EcoAtlas and California Rapid Assessment Methodology (CRAM) into its water quality assessment programs and in project permitting involving activities in waters of the state including the Clean Water Act Section 401 Water Quality Certification/Wetlands Protection Program. Lahontan Water Board staff has since developed such a program, which will be phased in across the Lahontan Region over the next two to three years. By doing so, the Lahontan Water Board joins a growing list of natural resource agencies and organizations that have incorporated the use of EcoAtlas and CRAM into their surface water protection/restoration/conservation programs.

EcoAtlas and CRAM will help to:

- Provide a single location where agencies, organizations, and the public can display, track, and review information regarding restoration efforts and aquatic habitat conditions on a project, watershed, and/or regional level;
- Identify where the region's wetlands are and how the distribution and types of wetlands change over time;
- Determine the overall ambient condition of wetlands in each watershed and how conditions are changing over time;
- Associate changes in wetland quantity with possible causal mechanisms, such as urban and rural development, agriculture, conservation programs, and other activities, thereby providing a mechanism for status and trend monitoring;
- Identify possible sources of wetland degradation, including impacts to wetlands due to loss and degradation of adjacent upland habitats (buffer zones) and cumulative impacts;
- Improve the effectiveness of wetland and watershed protection and restoration projects and programs;
- Communicate to the public the condition of aquatic habitat and the outcome and success of projects affecting those habitats; and
- Track progress towards meeting California's no-net loss of wetlands policy, including tracking increases in these valuable resources.

Below is information regarding EcoAtlas and CRAM

What is EcoAtlas?

EcoAtlas is a publicly available, centralized, GIS-based tool that was developed by the San Francisco Estuary Institute (SFEI) with funding from the United States Environmental Protection Agency (USEPA) and California State Water Resources Control Board. Its primary purpose is for viewing, tracking, and reporting on the extent and condition of aquatic habitats (wetlands, rivers, lakes, streams, and riparian areas) and projects affecting those habitats on a local, watershed, and/or regional scale. It provides standardized base mapping for California (California Aquatic Resource Inventory, or CARI), upon which aquatic resource data from numerous sources, such as the U.S. Fish and Wildlife Service's National Wetlands Inventory, U.S. Geological Survey's National Hydrologic Dataset, and local and regional agency databases (e.g., LiDAR datasets for the Lake Tahoe Basin and surrounding areas), is displayed. Additional data related to habitat conditions, project impacts, and mitigation and restoration projects, can also be uploaded and displayed in EcoAtlas.

Providing this centralized viewing platform for California's surface waters promotes collaboration and coordination among multiple local, state, and federal agencies and organizations that are all interested in surface water protection, restoration, and conservation. Agencies and organizations can display information regarding the purpose, location, extent, status, and results of a variety of projects affecting aquatic habitats. This information sharing can increase everyone's, including the general public's, awareness of the numerous projects and restoration efforts that are planned, underway, and completed within many of the Lahontan Region's watersheds. The information sharing provides opportunities to improve coordination among such efforts, to achieve more effective protection, restoration, and conservation of California valuable surface waters.

One of EcoAtlas' powerful information-sharing tools is the Landscape Profile Tool. This tool can take the information stored within EcoAtlas (e.g., project location and size, CRAM data, web links) and display such information either by generating custom maps and graphs, tabular or spatial files and/or summary reports. Making such information available in these ways, enhances an agency's or organization's ability to plan and coordinate on a watershed basis, optimizing everyone's protection and restoration efforts in that watershed.

Further information regarding EcoAtlas¹ can be found at:

¹ Use Google Chrome or Firefox internet browsers for EcoAtlas, as Internet Explorer is not supported.

- EcoAtlas Fact Sheet – <http://www.sfei.org/documents/ecoatlas-and-cram-factsheet>
- EcoAtlas Account and Information Upload Instructions – <http://ptrack.ecoatlas.org>
- Video tutorial on accessing data - <http://www.ecoatlas.org/about/#project-info>.
- CARI editor function, which enables individuals to submit suggested updates, deletions or additions of stream and wetland features - <http://ecoatlas.org/about/#cari-editor>.
- Video tutorial on the Landscape Profile Tool - <http://ecoatlas.org/about/#landscape-profile>.

Process of Uploading Information into EcoAtlas

Project applicants will be required by conditions in Clean Water Act Section 401 Water Quality Certification (WQC) Orders and Waste Discharge Requirements to establish an EcoAtlas account from SFEI and to upload the following information through the following link: <http://ptrack.ecoatlas.org>. The permit or order requirements will identify the specific information to be uploaded into EcoAtlas, such as general project information, contacts, CRAM data/results (when applicable), and a project map. The Applicant will also be required to update project-related information (e.g., monitoring reports, completion reports) as the project progresses, using the “Files and Links” tab in www.ecoatlas.org. Uploaded information is displayed in EcoAtlas following Lahontan Water Board staff review and acceptance.

What is CRAM?

CRAM is a cost-effective aquatic resource habitat assessment methodology developed under the oversight of the California Wetland Monitoring Workgroup, who is made up of local, state, and federal agencies and non-government organizations. CRAM provides repeatable, standardized, and scientifically-sound assessments that can be completed with just a half day of field data collection. CRAM addresses the wide variety of wetland types across California by developing and using wetland-type-specific assessment modules (e.g., riverine, slope, estuarine). Each module is developed through a process that has been approved by the California Water Quality Monitoring Council, and is subject to the peer review processes of the California State Water Resources Control Board and California Environmental Protection Agency. See Figure 1 at the end of this document for a flowchart of wetland types and modules.

Millions of public and private dollars have been and continue to be invested into protecting and restoring California’s wetland habitat that provides both water quality and water supply benefits. However, there has been an absence of consistent, scientifically defensible, and cost-effective monitoring to assess the effectiveness of such efforts. CRAM provides this critical element to wetland protection and restoration efforts. CRAM will provide the data and information necessary to cost-effectively assess

existing conditions, and the results of wetland restoration and mitigation projects. Such information will allow planners, designers, and those implementing wetland restoration and mitigation projects to more effectively pursue California's goals to protect and restore its valuable wetland habitat.

CRAM is used for both project level assessments and ambient/watershed assessments. CRAM assessments can provide knowledge of the condition in a variety of aquatic habitats in the watershed, and can assist in focusing restoration and protection efforts by providing an understanding of the ecosystem's condition as a whole. While CRAM can be performed and used at the watershed scale to determine the ambient condition of a watershed, the Lahontan Water Board will require CRAM at the project level as an added component to the project's required monitoring and reporting plan for overall project performance. The Lahontan Water Board, other agencies, and organizations will eventually be able to take a more holistic view of the watershed, as more project's incorporate CRAM and upload the results into EcoAtlas.

Further information regarding CRAM² can be found at:

- CRAM Fact Sheet – <http://www.sfei.org/documents/ecoatlas-and-cram-factsheet>
- Specific Information and Training Video – www.cramwetlands.org
- CRAM Data/Information through EcoAtlas – <http://www.ecoatlas.org/regions/ecoregion/statewide?cram=1>
- Training Schedule – <http://www.cramwetlands.org/training>

When will these tools begin to be required

The Lahontan Water Board will be implementing use of EcoAtlas and CRAM in a phased approach. EcoAtlas use will be required beginning late summer 2016 through permit conditions (uploading of documents can occur during project implementation). CRAM use, where the Riverine and Slope Modules are applicable, will first be required in the Truckee River, Lake Tahoe, and Carson River watersheds for projects going to construction in 2017. CRAM use will be expanded to other project types and into the other portions of the Lahontan Region in later years.

² Use Google Chrome or Firefox internet browsers for CRAM, as Internet Explorer is not supported.

Figure 1: Flowchart to determine appropriate CRAM Module

