

## Use Case: Application of WRAMP to Mitigation Planning and Evaluation Under Federal and State laws Governing Water Quality and Wildlife Conservation

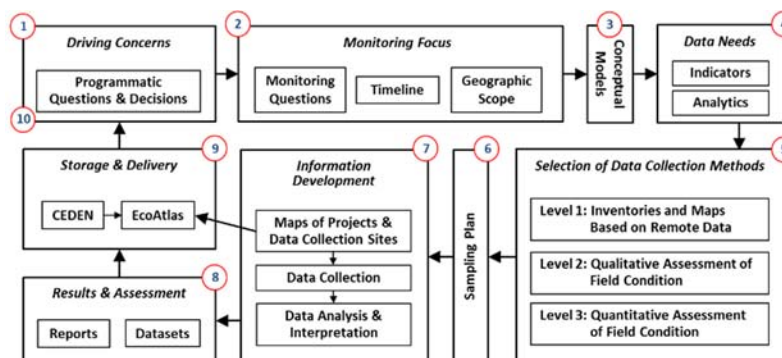
The Wetland and Riparian Area Monitoring Plan (WRAMP) is a framework and toolset developed by workgroups of the CA Water Quality Monitoring Council to align environmental monitoring to regulatory and management questions concerning state and federal aquatic resources.

### I. What does the law tell us about water information specifications?

Sections 404 and 401 of the USCWA govern the avoidance, minimization, and mitigation of impacts to U.S. and California state waters. The state WQCA protects the beneficial uses of state waters. Other state laws call for improved data consistency across agencies. Federal Guidance promulgated in 2008 and pending state guidance require a watershed approach to impact analysis and mitigation planning. A comparable approach is used to conserve wildlife, including aquatic and wetland species, under the USESA and CA NCCPA. These approaches require the application of best available data describing and explaining the abundance, distribution, diversity, and condition of aquatic natural resources.

### II. Targeted Decisions

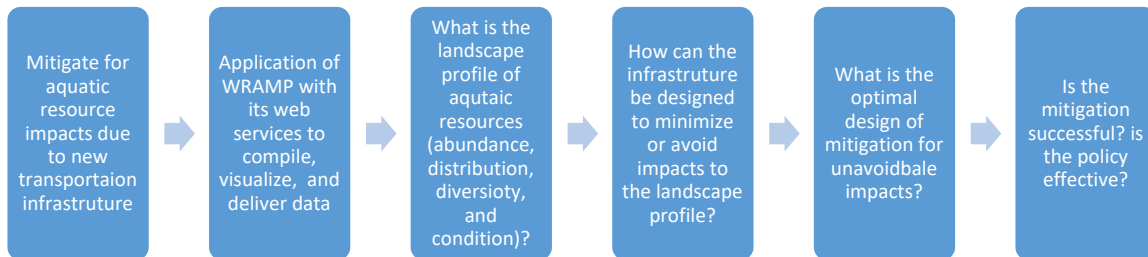
- A. *What decisions will be made within this legal framework?* The location, size, shape, design, crediting and performance of compensatory mitigation actions will be decided.
- B. *Where do you see challenges for implementing this decision?* Repeatable and non-arbitrary decisions must be assured by a system that expertly formulates and efficiently delivers authoritative data from multiple sources to decision-makers with adequate accountability for chain-of-custody. Differences in jurisdiction, regulations, and philosophy among agencies hinders uniform WRAMP implementation.
- C. *Who will be regulating/monitoring any decision?* These laws are implemented by the State Water Resources Control Board, CA Department of Fish and Wildlife, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and U.S. Environmental Protection Agency.
- D. *What is the "audience" for the data?* The audience includes all interests private or public that may be legally or illegally causing impacts to state and federal waters, plus all the land use agencies managing the impacts, plus all the agencies protecting the resources from impacts, plus the concerned public including environmental NGOs.
- E. *How will information be used?* The information will be used to implement §§ 404 and 401 of the USCWA, the USESA, and the CA NCCPA to assure no net loss of wetlands and other aquatic areas, and to conserve wildlife. These same data are used by many local, regional, state, and federal agencies to conduct their environmental program.



### III. At present, what is the simplified current flow of data?

The WRAMP framework translates the adaptive management cycle into a pragmatic step-wise procedures for applying the best available science to the management and regulation of aquatic resources using standardized methodologies.

- A. *How does the query of data for decision-making change how the production of data is conducted?* Data are formulated and uploaded into statewide databases through standardized transfer protocols online syntheses of landscape profiles designed to fit directly into mitigation decision-making.



- B. *What real-time data needs are there?* None at this time. WRAMP addresses the need to assess trends and net changes in natural aquatic resources through space and over time. For example, year-to-year changes in annual or storm hydrographs are more meaningful than instantaneous measures of stage or flow. It is recognized, however, that trends and net change are assessed based on compilations of instantaneous measurements.
- C. *What long-term data needs are there?* Essential long term data describe and explain the development of mitigation sites as effective habitat, and the net impacts and benefits that accrue over time at any spatial scale, due to the application of mitigation policies, programs, and projects.
- D. *What could be ascertained from a “big data” approach for these decisions? What meta-analysis would be possible given an appropriate design?* “Big data” do not yet exist, but the tools to get to Big Data are ready for use. Thousands of individual assessments of stream and wetland condition exist in an online database that is growing rapidly. When the density of data is sufficient, the database can be used to generate expected landscape profiles of aquatic resource condition that will accelerate mitigation planning and lower overall mitigation costs.
- IV. **How will we know that the data are accurately supporting decision-making?** The efficacy of mitigation designs will be assessed based on the empirical monitoring data generated by methods subject to peer review and used according to registered QAPPs. Assessments and their supporting data will be available online for their broadest possible review.
- V. **How can this information assist in environmental management?** WRAMP provides scalable perspectives on measurable environmental parameters using repeatable methods, with inputs from multiple management and regulatory programs, to show how a project affects a watershed, in the context of all actions in the watershed, and how a mitigation site offsets impacts at local, watershed, and regional scales.
- VI. **What currently limits effective decision-making? How do we bring together information, laws, and public perception to make transparent water allocation decisions?** Mitigation projects are designed and assessed in disparate ways based on non-standard methods. Such mitigation actions cannot be compared over time or to each other, their assessments are not repeatable, and the net effect of mitigation on aquatic resource condition cannot be determined or reported. WRAMP has proven abilities to correct these deficiencies to demonstrate the value of the public’s investment in natural aquatic resources.