

## California Environmental Flows Workgroup CHARTER

### **Mission**

The mission of the California Environmental Flows Workgroup is to advance the science of ecological flows assessment and its application for supporting management decisions aimed at balancing natural resource needs with consumptive water uses to establish environmental flows. The mission will be accomplished by providing a forum for coordination and technical exchanges among government agencies, academic institutions, tribes, and non-governmental organizations in California focused on understanding environmental flow needs and establishing ecological flow criteria grounded in science. The workgroup will strive to improve agency and public access to ecological and environmental flow data, information and tools related to ecological flow assessments, and to provide a common vision for use of tools and science-based information to support sound decision making.

### **Background and Definitions**

Natural resource managers are faced with the complicated task of protecting and restoring a broad suite of ecological functions and public values to rivers while accounting for the existing uses. A good understanding of how instream flow levels and regimes relate to the many beneficial uses, values and services of rivers (e.g., flood mitigation, water supply, biological productivity, species support, recreation) and the scale of alteration from the natural condition, is necessary for informed river management.

Instream flows are defined as the volume of water in a stream to adequately provide for instream uses within the stream channel (i.e., aquatic organisms and riverine processes). Instream flows are often divided into *ecological flows* and *environmental flows*. Ecological flows are defined as a set of flow metric values necessary to determine a flow regime that sustains ecological endpoints (habitat processes, ecological functions, or species life history stages) within a lotic water body and its margins. Environmental flows, on the other hand, are defined as ecological flow prescriptions adjusted to consider and balance other competing human uses to produce a flow regime that balances human and ecological needs. Environmental flows are often referred to as “balanced” flow levels allowing for hydrologic alteration due to uses other than the environment or ecosystem. However, environmental flows generally mimic patterns of the natural flow regime to achieve desired ecological outcomes.

### **Need for the Workgroup**

Multiple federal, state, and local agencies share responsibility to protect and improve the ecological health of California’s ecosystems through their regulatory or management authority, including development and implementation of regulatory environmental flow requirements. However, efforts to develop balanced environmental flows have historically not been initiated or coordinated at the state level. Consequently, ecological flow, data, tools, and methodologies used in regional and site-specific applications are not readily available or comparable across the state. An opportunity to learn from others’ experiences and to develop a holistic statewide approach for managing the health of California’s watersheds has been missed. The workgroup aims to address the need for a state-wide, multi-agency approach for evaluating ecological flow needs, provide a forum for coordination and collaboration to strengthen linkages between technical products and agency program needs, and provide support for resource managers and the public. The development of regulatory flow requirements is outside of the scope of this Workgroup.

## **Scope and Objectives**

The main objective of the Workgroup is to advance the science and management of environmental flows. This objective will be met by the following actions:

- Facilitate coordination between various agencies and programs involved with efforts to develop ecological flows to inform the development and establishment of environmental flows that protect biological communities and instream natural resources;
- Provide recommendations for consistent, scientifically defensible, and coordinated methods for assessing environmental flows and informing water resources and water quality management actions;
- Create a *clearinghouse* and *web portal* for tools, data, ecological flows case studies, and lessons learned from past ecological flow efforts. The web portal will be designed to answer basic questions related to ecological flows in a manner that is accessible and understandable to the public; and
- Establish best practices for data collection, management, and distribution of information to improve our understanding of ecological flow needs, status of ongoing ecological and environmental flow efforts, and the vulnerability of streams to future changes in flow conditions statewide.

## **Membership and Representation**

Representatives from state, regional, tribal and federal agencies, NGOs, academic institutions, and other public or non-profit organizations with authority or responsibility to evaluate/assess ecological and environmental flows, provide the scientific basis for development of ecological and environmental flows, establish environmental flow objectives, or manage environmental flows may participate in the Workgroup. Appendix A provides additional detail on the membership of the Workgroup.

The Workgroup, at its discretion, may form standing or ad hoc committees to focus on specific technical or programmatic areas. These committees will provide a mechanism for more detailed and intensive participation and discussion. Each committee shall select a chair who will serve as a liaison and report to the Workgroup. Individuals/ with relevant expertise may serve on the committees, regardless of whether they are Workgroup members.

## **Meeting Frequency and Governance**

The Workgroup is based on a spirit of collaboration, open exchange of ideas, and respectful dialogue. Members should come to the groups with this philosophy and the intent to advance the science and application of ecological flows throughout the state.

Meetings will be open, informal and consensus driven. The Workgroup will be led by a chair and a co-chair, who will be responsible for setting meeting agendas, facilitating discussions during the meeting, tracking action items, and distributing meeting notes. Water Quality Monitoring Council staff may assist in these activities. The chair and co-chairs will be selected annually through majority vote of the Workgroup members. As a matter of practice, the current co-chair should move up to the chair position and a new co-chair should be elected; however, this may change at the discretion of the Workgroup members.

The Workgroup will generally meet quarterly, but may elect to change the frequency at its discretion.

## Appendix A

### Overview of the California Environmental Flows Workgroup (CEFWG) and the California Environmental Flows Framework Technical Team: Composition, Membership, and Group Participation

#### **Background:**

The California Water Quality Monitoring Council recently formed the Environmental Flows Workgroup (CEFWG) as a mechanism to improve coordination between agencies and programs involved in developing and managing ecological and environmental flows. Prior to the formation of the CEFWG, the State Water Resources Control Board (Water Board) had entered into a contract with the University of California (UC), Davis to develop the California Environmental Flows Framework (CEFF). The overall goal for the CEFF effort is to define a framework for developing instream ecological flow criteria to protect aquatic life beneficial uses, recommend guidelines for its implementation, and provide a coarse resolution set of ecological flow recommendations for all stream classes in California. At the same time, several other technical workgroups involving UC Davis, UC Berkeley, The Nature Conservancy, Cal Trout, Utah State University, the Southern California Coastal Water Research Project, and the United States Geological Survey, with funding from state or federal agencies were working on developing approaches for establishing environmental flows in California streams. Several of the major technical working groups have now combined into a coordinated team to work collaboratively on developing tools and approaches for developing and implementing ecological flows in California. This technical team is now working with staff from the State Water Board, Department of Fish and Wildlife, and others to develop the initial CEFF. It is anticipated that the products of this team, including the initial CEFF will serve as the technical foundation for the work of the larger CEFWG, and that the framework may continue to evolve and be updated over time with new case studies, tools, etc. Similarly, once the initial CEFF development is complete, the focus of the technical team will likely evolve, based in part on direction and advice from the CEFWG.

#### **Overview of Groups:**

We envision two groups that will meet regularly and work collaboratively toward common products; one will be focused on technical issues (CEFF Technical Team) and the other on interagency coordination and the development and implementation of ecological flows (California Environmental Flows Workgroup).

#### CEFF Technical Team

This group is focused on developing technical tools and products necessary to inform development of ecological flows and environmental flow management. This includes developing specific methods, research strategies and science-based technical approaches.

The group may develop products such as:

- Analytical frameworks
- Classification systems
- Assessment tools
- Modeling approaches and models
- Databases
- Statistical analysis of patterns and relationships

The CEFF Technical Team has been working for approximately two years and is currently engaged in developing the first iteration of the California Environmental Flows Framework (CEFF) under a contract with the State Water Board (see above). The CEFF will define coarse

level ecological flows statewide and provide a technical guidance document for estimating refined ecological flow criteria at regional to site-specific scales. It is expected that this group will continue to focus on CEFF development for the next (approximately) two years (until 2020). It is anticipated that the CEFF will serve as a foundation for efforts by the California Environmental Flows Workgroup (CEFWG) to develop robust ecological and environmental flows programs statewide. As such, the CEFF Technical Team will provide advice and technical support to the CEFWG. The CEFF Technical Team is currently comprised of scientists and engineers from the following agencies and organizations:

- University of California, Davis
- University of California, Berkeley
- University of California Agriculture and Natural Resources
- Utah State University
- Southern California Coastal Water Research Project
- The Nature Conservancy
- California Trout
- US Geological Survey
- California Department of Fish and Wildlife
- State Water Resources Control Board (principal funding agency)

Following development of the first iteration of the CEFF, the composition of the CEFF Technical Team may expand or otherwise change to reflect the needs of the CEFF effort at that time based on input from the CEFWG.

#### California Environmental Flows Workgroup (CEFWG)

This workgroup operates under the auspices of the CA Water Quality Monitoring Council (CWQMC) and is intended to serve as an interagency group focused on developing recommendations for appropriate and consistent application of ecological flows science to inform agency policy decisions. The group is advisory (i.e. does not have any regulatory authority) and may provide recommendations on issues such as:

- Development of ecological flow criteria
- Appropriate application of tools, databases and models
- Priority knowledge gaps that should be funded
- Communication, interpretation, and information on management approaches
- Ways to reconcile technical approaches used by different programs

The CEFWG reports to the CWQMC and will initially be comprised of State and Federal agency representatives with authority or responsibility for developing ecological flows and/or implementing environmental flow policies and programs. However, the workgroup may expand to include local governments, non-governmental organizations, or tribes, as appropriate (see below). Initial members of the CEFWG include representatives from:

- State Water Board –
  - Division of Water Quality
  - Division of Water Rights
  - Office of Research, Planning & Performance
- Regional Water Quality Control Boards
- Department of Water Resources

- California Department of Fish and Wildlife
- US Fish and Wildlife Service
- US Geological Survey
- Bureau of Reclamation
- USDA Forest Service
- NOAA Fisheries

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**Group Membership:**

Both groups are intended to be open, transparent, and inclusive, subject to certain minimum requirements aimed at ensuring that the groups can function effectively and meet their primary objectives:

CEFF Technical Team – Researchers, scientists, and engineers from organizations and agencies conducting research on ecological flow sciences, including hydrology, geomorphology, ecology and engineering. Members should have active and ongoing research and projects related to ecological flows, preferably in an applied context (i.e. applied vs. theoretical science).

California Environmental Flows Workgroup - Staff from public agencies, NGOs, research organizations, or tribes who are at a level where they are empowered to make decisions or recommendations regarding development of ecological flows, environmental flow policy, or programs aimed at managing environmental flows.

**How to Become a Group Member:**

Individuals wishing to join a group (or both groups) should contact the chair (or co-chair) of that group and request to be added to the group. Membership will generally be open to any individual representing an appropriate organization (as described above). Upon joining the group, new members will be asked to provide a brief summary of their background and current responsibilities as it relates to ecological and environmental flows. Members may be asked to leave the group if they don't meet the basic criteria or embody the spirit of collaboration and progress.

Individuals may participate in both groups, but are encouraged to focus on the group most appropriate for their role, interest and expertise (i.e. science and technical vs. application and policy advice). Initially, the CEFF Technical Team membership will likely be focused around individuals currently working on the Initial CEFF. However, the CEFF Technical Team may expand following completion of the initially funded tasks. In contrast, a broad suite of agencies responsible for developing and/or implementing ecological and environmental flow programs may join the CEFWG. Participation for the purposes of observing, staying informed, or just commenting is not consistent with the goals of these groups, as these are working groups. Organizations who do not wish (or are not appropriate) for ongoing participation in the CEFWG may join email lists to stay informed on workgroup activities, may serve as case study/demonstration project partners, may attend meetings in an ad hoc manner based on specific topics that are agendaized, or may participate in a subcommittee of the CEFWG. We will establish other mechanisms, such as web sites and email lists, to provide a mechanism for ongoing communication and information dissemination to interested stakeholders.