



WHAT IS INSTREAM FLOW?

At its most basic level, the term means water flows and levels in a stream or other water body. In reference to rivers, it's synonymous with other commonly used terms such as "environmental" and "ecological" flow. Most streams have some level of flow, but flow is no guarantee that all is well for the organisms (including humans) that depend on the river's resources. Instream flow also includes the concept that a regime of varying water flows and levels, not a static amount, is necessary for aquatic ecosystems to function properly. Natural resource managers are faced with the complicated task of protecting and restoring public values to rivers while honoring existing uses.

WHY IS IT IMPORTANT?

A healthy instream flow:

- Protects habitat connectivity - enabling a stream's fish population to successfully travel, eat, grow, rest, and reproduce
- Sustains other wildlife reliant on stream-related ecosystems for food and/or habitat
- Allows for stream-related recreation (e.g., fishing, swimming)

Forming Partnerships

State law directs the California Department of Fish and Wildlife (CDFW) to develop proposed stream flow requirements to assure the continued viability of stream-related fish and wildlife resources. Flow regimes are established to ensure that stream flows are maintained at levels that are adequate for long-term protection, maintenance, and stewardship of fish and wildlife resources.

This effort involves coordination among federal, state, regional, and local government entities, academia, and the private sector. Recently, the Instream Flow Program has begun working with the [Quality Assurance Research Group at the Moss Landing Marine Laboratories](#). The goal of this partnership is to create a quality management system for the Instream Flow Program (see page 2).

While these quality management systems are considered standard components of many chemical and biological analyses, their recent adoption by the CDFW is unique among instream flow programs.





The Pursuit of Quality



Recently, the CDFW began working with the [Quality Assurance Research Group at the Moss Landing Marine Laboratories](#) to develop quality management systems for the Instream Flow Program. The goal of this partnership is to encourage comparability among current and future instream flow studies prepared by CDFW staff and its partners. One way of doing this is to standardize the protocols used in these studies. The CDFW's Instream Flow Program's five newest data collection procedures are detailed below.

Data Collection Procedures

If multiple instream flow studies are performed using differing protocols or criteria, the resulting data may not be comparable. To enable the production of complete and consistent data for use in the analysis of flow regimes, the Instream Flow Quality Assurance Program has begun developing standardized data collection procedures. The CDFW Instream Flow Program's five newest data collection standard operating procedures (SOPs) are detailed below.



- ***Critical Riffle Analysis for Fish Passage in California:*** A series of depth measurements is made in natural low-flow areas of a stream and used to determine flows needed for fish passage and aquatic habitat connectivity.
- ***Discharge Measurements in Wadeable Streams in California:*** A velocity meter and wading rod are used to collect data for use in discharge calculations.
- ***Streambed and Water Surface Elevation Data Collection in California:*** An autolevel and differential leveling measurements are used to collect streambed and water surface elevation data for use in hydraulic habitat and other instream flow type analyses and models.
- ***Flow Duration Analysis in California:*** Existing hydrologic data are used to compare, predict, and recommend stream flows.
- ***Wetted Perimeter Data Collection in California:*** A field-based method is used to determine flow needs for maintaining productive riffle habitats - typically during the summer and/or fall low flow months.

These procedures and supporting information are available on the [CDFW Instream Flow Program webpage](#).



In the Winter 2013 Program Update...

Identifying Flow Regimes Using Riverine Processes and Function

Using hydrology, biology, geomorphology, water quality, and connectivity as components for identifying flow regimes.