

Question-Driven Flow Criteria: Overview of Regional and Site-Specific Approaches for Assessing Instream Flow Needs for Fish and Wildlife in California

What comes first: selection of the flow assessment method or identification of the flow assessment question? With an emphasis on developing question-driven and scale-appropriate flow criteria, this presentation will provide an overview of the design and implementation of two types of study designs CDFW is implementing to assess flow needs for fish and wildlife and the habitats upon which they depend. Site-specific and regional study designs will each be discussed with a focus on selecting study-appropriate methods and models to address study questions. The goals of the studies range from developing data for use in regulatory hearings for water allocation and permitting decisions, to developing non-regulatory data intended to provide general information useful for planning, prioritization, and/or restoration activities among watersheds. The site-specific and regional study questions range from species- and lifestage-specific flow needs on a particular stream to study questions on instream flow health and habitat conditions in multiple streams and regions through time. Using the five riverine components of flow (i.e., biology, connectivity, geomorphology, hydrology, and water quality) as recognized by the Instream Flow Council, this presentation will provide an overview of how CDFW develops defensible instream flow criteria using question-driven study designs, a robust quality assurance system, and multiple instream flow methods (e.g., desktop, empirical, and hydraulic computational instream flow applications) commonly employed by CDFW and other Fish and Wildlife agencies across the U.S. and Canada. Also discussed will be the importance of representative sampling sites, peer-reviewed and consistent/comparable flow methods, and study design review and approval prior to implementation.

Robert Holmes' instream flow presentation materials:

<https://www.wildlife.ca.gov/Conservation/Watersheds/Instream-Flow/Studies/Big-Sur-Study>

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=102084&inline>

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<https://www.wildlife.ca.gov/Conservation/Watersheds/Instream-Flow/Studies/Ventura-River-Studies>

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=137996&inline>