

Julie Zimmerman Abstract

A coordinated approach for developing statewide environmental flow regulations in California

JULIE ZIMMERMAN (The Nature Conservancy), Eric Stein (Southern California Coastal Water Research Project). Sarah Yarnell (UC Davis). Sam Sandoval (UC Davis). Belize Lane (UC Davis). Jeanette Howard (The Nature Conservancy). Ted Grantham (UC Berkeley). Larry Brown (USGS).

Establishing environmental flow targets is a priority for numerous programs in California. Although methods vary, each effort aims to determine flow conditions necessary to protect ecological integrity in light of competing water uses. Methods vary based on the ecological endpoint of management concern (e.g. fish, macroinvertebrates, habitat), stream type, and preferences of the implementing agency, and include a variety of established methods. Unfortunately, lack of coordination among programs and efforts leads to inefficiencies, difficulty in comparing approaches, inability to share outputs, and creates potential for competing recommendations. An ad-hoc statewide technical workgroup consisting of UC Davis, Southern California Coastal Water Research Project, The Nature Conservancy, UC Berkeley, and the US Geological Survey has convened to develop a framework for organizing environmental flow analyses across California and providing consistent science-based recommendations for applying appropriate methods to inform setting and managing of environmental flows. We propose a tiered approach that promotes consistency and coordination in establishing, maintaining, and monitoring in-stream flow requirements for California. The overall goal of this effort is to support various regulatory and management agencies in developing and implementing local, regional, and statewide in-stream flow targets to protect aquatic life beneficial uses. A tiered approach allows for rapid development of statewide environmental flow recommendations based on natural variability of ecologically-relevant flow metrics (Tier 1), and guidance on appropriate methods for developing more refined and site-specific flow targets depending on stream class, management context, and desired ecological outcomes (Tier 2). We propose to use case studies to demonstrate implementation of the framework in different stream classes, spatial scales, and management contexts, and to compare flow recommendations using the rapid functional flows approach and other, more site-specific and detailed approaches.