

The Future of the California Chinook Salmon Fishery: Roles of Climate Variation, Habitat Restoration, Hatchery Practices and Biocomplexity

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Brian Wells, NOAA/SWFSC, 831.420.3969, brian.wells@noaa.gov

David Hankin, Humboldt State University, 707.826.3447, dgh1@humboldt.edu

Louis Botsford, UC Davis, 530.752.6169, lwbotsford@ucdavis.edu

Summary

The collapse of West Coast salmon populations led to sweeping closures of both sport and commercial salmon fishing in 2008 and 2009 and to the subsequent appropriation of \$170 million in federal disaster relief aid. The focal points of salmon restoration in California are the Klamath River and Central Valley runs, where dams and water-use conflicts, along with oceanographic and climatic variability, continue to push species to the brink. This project seeks to provide managers with tools for weighing pros and cons of various restoration options for Central Valley and Klamath run chinook salmon.

The project's first phase will involve a retrospective analysis of the links between climate variation, human activities and salmon numbers. The second phase will be a prospective analysis to determine critical stages in the life history of salmon that impact fish production. An overarching theme to be explored is whether promoting a more diverse population structure for chinook salmon could be a management strategy for boosting salmon survival rates. Specific hypotheses to be examined include: salmon survival is becoming increasingly variable; climate variability is increasing; genetic diversity within and among salmon populations is diminishing; improving population structure diversity will reduce swings in salmon survival; and improving diversity will improve the economic viability of fisheries.



R. Walder/SPAWN

Endangered juvenile coho salmon rescued from a drying creek in the Lagunitas watershed in Marin County prior to relocation to suitable habitat downstream.

Fall chinook salmon waiting for rain during a low-flow period in the Smith River.



Z. Larson/Smith River Advisory Council