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Salmon, Steelhead, and Trout in California

Status of an Problematic Fauna

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SALMON, STEELHEAD, AND TROUT IN CALIFORNIA: STATUS OF AN EMBLEMATIC FAUNA

INTRODUCTION

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ABSTRACT

The southernmost populations of salmon, steelhead, and trout, uniquely adapted to California's climatic regime, are in deep trouble. 20 of 31 living taxa (65%) are in danger of extinction within the next century. Of the 22 anadromous taxa, 13 (59%) are in danger of extinction, while seven (78%) of the nine living inland taxa are in danger of extinction. All of these species currently support or historically supported fisheries, thus having economic as well as cultural value. They are also strong indicators of the condition of California's streams; large self-sustaining populations of native salmon and trout are found where streams are in reasonably good condition. The reasons for their widespread decline are complex and multiple, but basically boil down to a combination of human competition for use of the high quality water salmonids require, alteration of the landscapes through which salmonid waters flow, overfishing, and introductions of alien species as predators or competitors. Ensuring ecologically sustainable flows, reducing migratory barriers to juveniles and adults, restoring watersheds, and minimizing competition from non-native salmonids are some of the essential steps to the recovery of California's salmonids. Bringing these fish back from the brink of extinction will not be easy but it is possible, thanks to the inherent adaptability of California's salmonids to changing conditions. However, the growing threats of climate change and increasing human populations, with increases in water use and in intensity of land use, will need to be addressed. In the long run, restoring fisheries for most species, however, will require reducing or at least not increasing human impacts on the California landscape.

INTRODUCTION

Salmon, trout, and their relatives, which make up the fish family Salmonidae (salmonids), are the iconic fishes of the Northern Hemisphere. They are characteristic of the region's cold productive oceans, rushing streams and rivers, and deep cold lakes. They are adapted for life in dynamic landscapes created by glaciers, volcanoes, earthquakes, and climatic extremes. Salmonids thrive through their mobility, moving freely through the ocean and large river systems, as well as their ability to adapt in isolation to extreme local conditions from deserts to rain forests. This has resulted in a handful of species producing hundreds of genetically distinct runs, races, and subspecies, many with distinctive color patterns and other attributes, all with life histories superbly tuned to local environmental conditions (e.g., Behnke 2002, Moyle 2002).