

Evaluating cutthroat trout performance and identifying limiting factors for the native fish community of Pyramid Lake, NV.

Dates:

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Abstract:

Understanding aquatic food webs is important for both conservation and economic purposes. In Pyramid Lake, NV, the threatened Lahontan cutthroat trout (*Onchorhynchus clarki henshawi*, LCT) is the centerpiece of a world-class fishery. Maintained through stocking, LCT are no longer able to reach their natal spawning grounds due to damming and water diversions on the Truckee River. While past research on Pyramid Lake has focused primarily on water quality issues, the main focus of this study is to quantify the interactive and ecological effects of the aquatic food web and to identify potential limiting factors of LCT growth and survival. In addition to LCT, the fish community of Pyramid Lake is made up of two suckers, cui-ui (*Chasmistes cujus*) and Tahoe (*Catostomus tahoensis*), tui chub (*Gila bicolor*), the main forage item of LCT, and the invasive Sacramento perch (*Archoplites interruptus*). In this study we will survey the benthic invertebrate, vertebrate, and zooplankton communities of Pyramid Lake as well as physical and chemical parameters. Fish populations will be sampled using a variety of netting techniques and hydroacoustic surveys. Stable isotope analysis and food web modeling techniques will be used to demonstrate potential bottlenecks in the flow of energy throughout the food web. The three primary objectives of the study are to 1) identify factors limiting LCT growth and survival, 2) determine if exotic Sacramento perch are negatively impacting LCT through either exploitative or interference competition, and 3) quantify major pathways of energy through the food web.



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