Mountain Whitefish

Prosopium williamsoni

chances for survival: *better* **4**

1 2 3 **4** 5

PHOTO: THOMAS TAYLOR

Mountain whitefish are silvery in color and coarse-scaled with a large adipose fin, a small mouth on the underside of the head, a short dorsal fin, and a slender, cylindrical body. They are found throughout western North America. While mountain whitefish are regarded as a single species throughout their wide range, a thorough genetic analysis would probably reveal distinct population segments. The Lahontan population of mountain whitefish in California and Nevada is isolated from other populations and likely to be distinct. They inhabit lakes and clear, cold rivers.

In lakes, they generally live close to the bottom in fairly deep water, although they move into the shallows during spawning season. Mountain whitefish favor larger streams where they often feed in groups, primarily on bottom dwelling aquatic insects. Whitefish scatter eggs over gravel and rocks, spawning at dusk or at night in groups of more than 20 fish.

DISTRIBUTION: Mountain whitefish are distributed throughout the Columbia River watershed, the upper reaches of the Missouri and Colorado Rivers, the Bonneville drainage, and the Mackenzie and Hudson Bay drainages in the Arctic. In California and Nevada, they are present in the Truckee, Carson, and Walker River drainages on the east side of the Sierra Nevada, but are absent from Susan River and Eagle Lake.

CATEGORY	SCORE	EXPLANATION
Range	4	Present in three watersheds and widely distributed outside California assuming all mountain whitefish are the same
Population size	5	Numbers appear to be large in the Truckee River and other streams
Intervention needs	5	They persist on their own, despite being ignored
Tolerance	5	Whitefish are more physiologically tolerant than most salmonids, live at least five years, and spawn more than once
Genetic risk	4	Their genetics have not been studied but most populations are isolated from other large populations
Climate change	3	Mountain whitefish seem to be quite vulnerable to decreased flows, warmer temperatures and increased diversions that are likely to result from climate change
Overall status	4	
Reliability	2	Most reports are anecdotal although there is some gray literature

ABUNDANCE: Mountain whitefish are still common in California, but they are now divided into isolated populations. They were once harvested in large numbers by Native Americans and commercially harvested in Lake Tahoe. There are still mountain whitefish in Lake Tahoe, but they have been reduced in numbers since the 1950s. Mountain whitefish still seem to be common in the low gradient reaches of the Truckee, East Fork Carson, East and West Walker, and Little Walker Rivers. Small populations are still found in the Little Truckee River, Independence Lake, and in some small streams such as Wolf and Markleeville Creeks, tributaries to the East Carson River.

FACTORS AFFECTING STATUS: Factors affecting mountain whitefish abundance and distribution in California are poorly documented. Their general decline seems to be habitat-related, in particular because (1) they live primarily in the larger and most altered streams of the Sierras and associated lakes, (2) they have poor survival in most reservoirs, and, (3) they require high water quality.

STATUS 4: Mountain whitefish are locally abundant in many areas; however their distribution is presumably more limited in California than it was historically. They are unlikely to go extinct in the foreseeable future, but climate change may alter the distribution of suitable habitat for these fish. Present numbers of whitefish are likely a small fraction of their historic numbers, when they apparently were one of the most abundant fish in the eastern Sierra Nevada. They are considered a low-value game fish and apparently are able to sustain whatever harvest exists today. Mountain whitefish should be managed as a native salmonid that is still persisting in some numbers. They also are a good indicator of the "health" of the Carson, Walker, and Truckee Rivers, as well as Lake Tahoe and other lakes where they still exist. Whitefish populations in Sierra Nevada rivers and tributaries have been fragmented by dams and reservoirs, and are generally scarce in reservoirs. A severe decline in the abundance of mountain whitefish in Sagehen and Prosser Creeks followed the construction of dams on each creek. Thus, without attention to the management of this species, whitefish are likely to become increasingly scarce in California.

CONSERVATION RECOMMENDATIONS: While mountain mountain whitefish are not at risk, they would benefit from a comprehensive review of their biology, including distribution, abundance and habitat requirements of all life stages. Mountain whitefish are a good indicator of the health of the Carson, Walker, and Truckee Rivers, and would benefit from the maintenance of adequate water flows and temperatures.

Carson River. PHOTO: JOE FERREIRA

Mountain Whitefish Distribution