

## Hutton Springs Tui Chub

### *Interim Risk Assessment*

The Hutton Springs Tui Chub SMU is comprised of a single population that inhabits Hutton Spring on the northwest side of Alkali Lake in Lake County, Oregon. The Hutton tui chub (*Gila bicolor* ssp.) was listed as threatened under the federal Endangered Species Act in 1985 (USFWS 1985).

Several morphologically diverse, allopatric populations of tui chub inhabit the five endorheic basins of south-central Oregon. The Alkali Lake basin reached its maximum depth of approximately 83 meters covering 2,301 square kilometers from 46,000 to 32,000 years ago. During this time period there was a connection between the Alkali basin and Fort Rock basin (Silver and Summer lakes) to the west (Bills 1977). The Hutton Springs tui chub was isolated approximately 25,000 to 32,000 years ago (Bills 1977). Morphometric and meristic data (Bills 1977) supports classification of Hutton Springs tui chub as a distinct subspecies. Recent mitochondrial DNA analysis (Harris 2000) suggests a grouping of the Hutton Springs tui chub with populations of tui chub from the Abert and Summer Lake basins in Oregon. Additional genetic, morphometric, and meristic data are needed to further address this question (Harris 2000; Dr. D. Markle, OSU, personal communication).

The status of the Hutton Springs Tui Chub SMU was assessed by evaluating six interim criteria. For each interim criterion, a designation of “pass” or “fail” for the SMU was determined. The Hutton Tui Chub SMU is classified as “at risk” because only three of the six interim criteria were met.

### *Distribution*

Hutton Springs tui chub are confined to small springs on the northwest side of Alkali Lake in the Alkali Basin, Oregon. Hutton Spring is located on private land and the habitat is reportedly in good condition, primarily due to conscientious long-term land stewardship by the landowner. The habitat is currently fenced from cattle grazing and is in stable condition (USFWS 1997). Hutton Spring has been diked and has a pool approximately 12 meters wide, 4.5 meters deep, and is surrounded by rushes. A second unnamed spring (3.3 meters wide and 0.7 meters deep) was reported to contain Hutton Springs tui chub (Bills 1977) but was not located in 1996 surveys and the existence of a second population is questionable (USFWS 1997). Records are not available to evaluate whether Hutton Springs tui chub existed historically at other locations. Because of its highly restricted distribution and dependence on a single water source, the Hutton Springs tui chub are vulnerable to catastrophic loss and fail the distribution criterion.

### *Abundance*

Data describing the abundance of the Hutton Springs tui chub population are limited. Bills (1977) visually estimated fewer than 300 Hutton Springs tui chub in Hutton Spring and approximately 150 tui chub in the smaller unnamed spring in 1977. No data are available over the past 27 years (access by ODFW, BLM and USFWS has been denied until recently). Oregon Department of Fish and Wildlife is currently obtaining a population estimate of Hutton Springs. Hutton Springs tui chub fail this criterion.

***Productivity***

No data are available to assess productivity and the rate of population growth at the population level. This criterion was not evaluated.

***Reproductive Independence***

All Hutton Springs tui chub are naturally-produced. No hatchery programs exist. Hutton Springs tui chub pass this criterion.

***Hybridization and other negative impacts of nonnative fishes***

Interspecific hybridization and immediate threats from non-native fishes have not been identified as issues for Hutton Springs tui chub. Hutton Springs tui chub pass this criterion.