

# Thompson and Squaw Creek Fisheries



Fish populations have been monitored since 1980 at two sites (one upstream of mine disturbance and one downstream) on both Thompson Creek and Squaw Creek. Mine construction began in 1981 and mining began in 1983. Over time monitoring has expanded to include 2 additional monitoring sites on Thompson Creek (4 sites in total). However, long-term data only exists for the 4 sites shown on the map, which is presented in separate graphs below. The data allows comparison of fish populations over the life of the mine, as well as between the upstream and downstream sites. A summary of the data is presented below for each species<sup>1</sup>.

**Shorthead Sculpin** – Shorthead sculpin have been collected each year at both long-term monitoring sites on Thompson and Squaw Creeks. There is a high level of natural variability between years; however, data analysis indicates that there are no statistically significant long-term increasing or decreasing trends at the sites on Thompson Creek. On Squaw Creek, there is no statistically significant long-term trend at the upstream reference site (SQ-3). However, there has been a statistically significant decrease in sculpin density over time at the downstream site (SQ-2).

**Cutthroat Trout / Rainbow Trout Hybrids** – Hybridization between westslope cutthroat trout and rainbow trout is common and fish in Thompson and Squaw Creek exhibit a range of characteristics of both species. Cutthroat-rainbow trout hybrids have been collected each year at both long-term monitoring sites on Thompson and Squaw Creeks. As with sculpin, there is high level of variability between years; however, high inter-annual variability is relatively common among trout populations in the western U.S. Further, there are no statistically significant upward or downward trends in population levels at the upstream or downstream sites on both creeks.

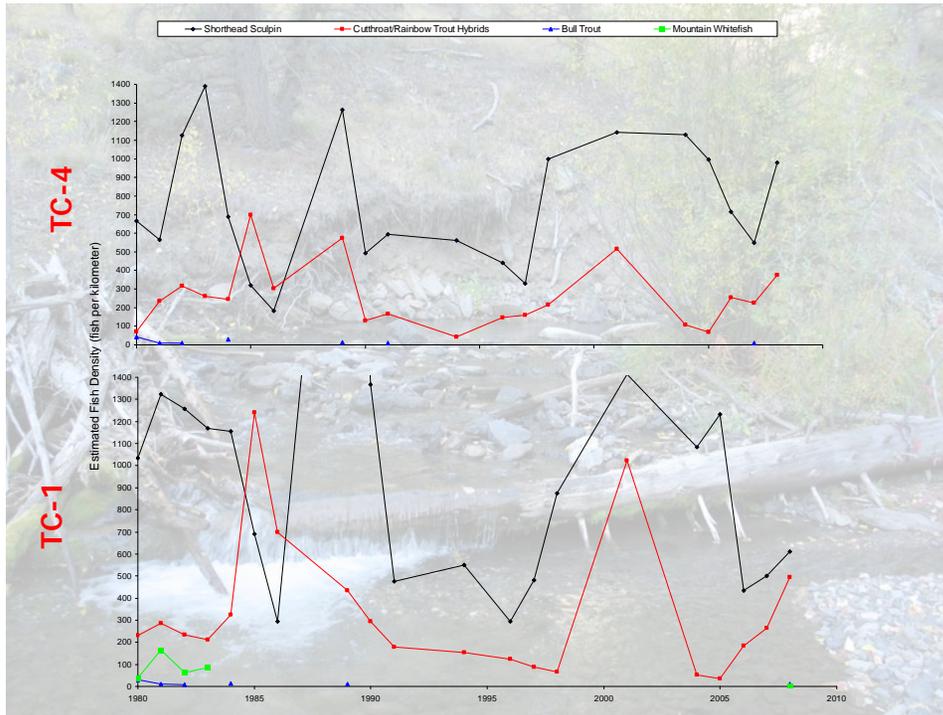
**Bull Trout** – In Thompson Creek, bull trout were present in low numbers at both sites between 1980 and 1991. However, bull trout were then not found at either the upstream or downstream sites until recently. A single bull trout was collected in 2007 for the first time since 1991 at site TC-4 and a single bull trout was collected at site TC-1 in 2008 for the first time since 1989. In Squaw Creek, bull trout have been present more consistently, although in low numbers.

**Mountain Whitefish** – At the upstream site on Thompson Creek (TC-4) mountain whitefish were present in 2007 for the first time since 1991. However, mountain whitefish have not been sampled at the downstream (TC-1) site since 1983, the year mining began. Mountain whitefish are collected more regularly in Squaw Creek, although in low numbers.

**Chinook Salmon** – Chinook salmon have not been present at either Thompson Creek site since sampling began in 1980 (chinook have been found in the lower reaches of Thompson Creek). Young chinook salmon were present at the upstream site (SQ-3) in 1998, 2004, and 2007. Chinook have not been present at the lower site (SQ-2) since sampling began in 1980.

<sup>1</sup>Fish data summarized from the *Aquatic Biological Monitoring of Thompson Creek and Squaw Creek, Eastern Oregon, 2008* prepared for the Thompson Creek Metals Company by GEI Consultants, Inc. Ecological Division. To ensure comparability, fish density estimates were produced from the result of only the first electrofishing pass at each sample location.

## Thompson Creek



## Squaw Creek

