

Foskett Speckled Dace

Interim Risk Assessment

The Foskett Speckled Dace SMU is comprised of populations that inhabit Foskett and Dace Springs, small desert springs on the west side of Coleman Lake in Lake County, Oregon. This species was initially known only from Foskett Spring. The second population in Dace Spring, located approximately 0.8 kilometer south of Foskett Spring, was established from an introduction of 100 fish from Foskett Spring in 1979-1980 (Williams et al. 1990). The Foskett speckled dace was listed as threatened under the federal Endangered Species Act in 1985 (USFWS 1985).

The Foskett speckled dace (*Rhinichthys osculus* ssp.) became isolated in Foskett Spring at the end of the Pluvial period (~9,000-10,000 years ago). Foskett Spring is a natural spring that rises from a springhead pool, flows through a narrow springbrook into a dense growth of cattails, flows into a shallow pool, and then disappears into the soil of the normally dry Coleman Lake. The entire habitat is approximately 100 meters long and averages less than 0.3 meter deep. Dace Spring is smaller than Foskett Spring and is choked with macrophytes. Dace spring flows through an outflow pipe that terminates in a concrete trough. In 1987, the U.S. Bureau of Land Management (BLM) acquired, through exchange, the 65 hectare parcel of land containing Foskett and Dace springs. Both springs were fenced to exclude livestock.

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

Distribution

Foskett speckled dace are endemic to Foskett Spring on the west bank of historic Coleman Lake in the Warner Basin, Oregon. Foskett dace were introduced into Dace Spring in 1979-1980; only 19 fish were found at this location in 1997 (Dambacher et al. 1997). No other fish are found at these locations. Records are not available to evaluate whether Foskett speckled dace existed historically at other locations. There is some question whether Foskett speckled dace are related to the speckled dace found in nearby Twelvemile Creek. In 2003, samples were collected for genetics analysis from Foskett Spring and Twelvemile Creek to address this question. Results of this study are not yet available. Because of its highly restricted distribution and dependence on a single water source, the Foskett speckled dace are vulnerable to catastrophic loss and fail the distribution criterion.

Abundance

Data describing the abundance of the Foskett speckled dace population (Foskett Speckled Dace SMU) are limited and are not available over the past seven years. In 1973, Bond (1974) estimated, by visual approximation, the population in Foskett Spring at 1,500 to 2,000 fish. In 1997, mark-recapture population estimates were obtained from both Foskett and Dace springs (Dambacher et al. 1997). The Foskett Spring estimate was 27,787 (95% confidence intervals: 14,057-41,516). The majority (97%) were found in the downstream open water pool located outside the cattle enclosure.

In 1986, more than 300 dace representing three size classes were observed (Williams et al. 1990). In 1997 only 19 fish were estimated in Dace Spring (Dambacher et al. 1997). All were found in a concrete trough that was installed east of the spring. In addition, only large fish were collected from Dace Spring, suggesting minimal recent recruitment has occurred. Access back to the spring from the trough is thought to be limited (USFWS 1997) and may reduce the ability of dace to return to the spring to spawn.

The springhead pool in Foskett Spring is densely vegetated and supported only 200 fish in 1997 (<1% of population). The open pool located outside the cattle enclosure contained most of the population in 1997. Open water areas, which were found to support the largest numbers of dace in 1997, have been filling with sediment and dense aquatic vegetation. Previous attempts to increase open water habitat have been unsuccessful. For these reasons, the Foskett speckled dace fail the abundance 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 Foskett speckled dace are naturally-produced. No hatchery programs exist. Foskett speckled dace 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 Foskett speckled dace. Foskett speckled dace pass this criterion.