

scientific name

common name

Rhinichthys osculus

speckled dace

Bison code 010185

Official status

Endemism

State AZ: threatened

Not endemic

Status/threats

The speckled dace is one of the most highly variable and widespread species of fish in North America where it occurs in all 7 major drainage basins. It inhabits upper elevation streams throughout Arizona and New Mexico where the principal threat to the species is most probably introduced predatory salmonid species, especially brown trout. It has a threatened status in Arizona and is unlisted in New Mexico. It is a Forest Service sensitive species.

Distribution

Speckled dace is widely distributed in western North America west of the continental divide and from the Columbia River basin south to the lower Colorado River basin and into northern Mexico. In Arizona the species is most abundant in upper elevation (> 2000 to 3000 m) streams in the central Arizona and White Mountains, and is rare below 1500 m elevation. In New Mexico the species occurs only in the southwestern region in the Gila River headwaters and in the Zuni and San Juan basins.

Habitat

Speckled dace is a bottom-dwelling predominantly riffle-inhabiting species of moderate velocity (40-50 cm/sec), and low depth (<20 cm), over gravel to pebble-cobble substrate (32-64 cm), depending on availability. Secondly, it can be found in pools immediately below riffles and eddies. It shares these habitats most closely with its congener, loach minnow. The species has a relatively low tolerance for elevated temperatures and reduced dissolved oxygen. It occupies cool waters ranging from about 10 to 16 degrees C. Experimentally, it has a recorded critical thermal maximum of 30 to 36 degrees C, depending on acclimation temperature.

Life history and ecology

The speckled dace is an omnivore, feeding primarily on benthic insects, but also consumes algae, other aquatic macroinvertebrates, and detritus. Lives along with loach minnow and desert sucker in predominantly riffle habitat.

Breeding

Reproductive habits and behavior is unstudied.

Key Habitat Components: riffles, moderate velocity, gravel to cobble substrate, heads of pools immediately below riffles.

Breeding season

Speckled dace reproduce in spring and again in late summer, and reproductive period is temperature and photoperiod controlled. In one stream in southern Arizona, temperature, flow and photoperiod stimulated the spring spawning event; summer monsoon rains the spawning event in late summer. Overall, the reproductive behavior and habits of the species are unknown. Other species of *Rhinichthys* build nests by fanning substrate materials with fins and "rooting" with snout. Males defend nests and typically spawn with numerous females.

Grazing effects

Because of its widespread distribution and abundance and habitat utilization, grazing is of little threat to this species. However, locally in high elevation, small (< 1 cfs) streams in montane meadows negative impacts could occur if grazing intensity was high in spring and early summer during spawning season. Indirectly, in these same habitats, removal of streamside vegetation and streambank damage along with disturbance of substrates in pools and riffles could elevate water temperatures, reduce dissolved oxygen, and instream cover. Further, in event of drought the species moves to pool habitats where the impact could increase.

Selected references

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