Eureka! A New Species in Sausal Creek!

New Native Fish Species Documented from Sausal Creek: Riffle sculpin, *Cottus gulosus*

This October FOSC board member and ecologist Rob Leidy discovered a new fish species, the riffle sculpin, in Sausal Creek! Riffle sculpins are found in the coastal drainages of California (excluding Oregon) from Morro Bay to just south of the Klamath River, including Sacramento-San Joaquin drainage streams, San Francisco Bay tributaries, and in the lower Columbia River drainage in Washington. In Bay Area streams, riffle sculpins are invariably found with rainbow trout. These species often prefer small headwater and mid-elevation streams that are moderately shaded, contain shallow riffles and pools with low conductivities, cool water temperatures, clear water with high dissolved oxygen levels, and a substrate dominated by gravel and cobble (Leidy 2007). Like rainbow trout, riffle sculpins are indicators of good water quality. Riffle sculpins rarely occur in stream reaches with nonnative fish species.

Riffle sculpins have benthic larvae that do not disperse great distances, so they typically do not recolonize areas far from where they are born. Because of this, riffle sculpins are susceptible to permanently disappearing in stream reaches affected by pollution even after the pollution is abated. They become sexually mature by the end of their second year (at 40-50 mm length) and typically spawn under cobbles or submerged logs during February-April (Moyle 2002). Males guard nests, new larvae, and fry. Riffle sculpins usually eat aquatic invertebrates such as caddisflies, mayflies, and amphipods, although very large sculpins may consume smaller sculpins (Moyle 2002).

Recent molecular (genetic) studies have revealed that there is much cryptic diversity in riffle sculpins (Peter Moyle, pers. comm). These findings indicate that California riffle sculpins are not the same species found in Washington. “Hidden” diversity found in riffle sculpins means that there are likely new species of sculpins awaiting description, including those found in Sausal Creek.

We can help conserve riffle sculpin and rainbow trout in Sausal Creek by protecting water quality through reductions in polluted runoff from our yards and impervious surfaces. Maintaining and restoring riparian vegetation helps reduce bank erosion, supplies food for invertebrates eaten by sculpins, and provides the shade critical to maintaining cool water temperatures in summer and fall.

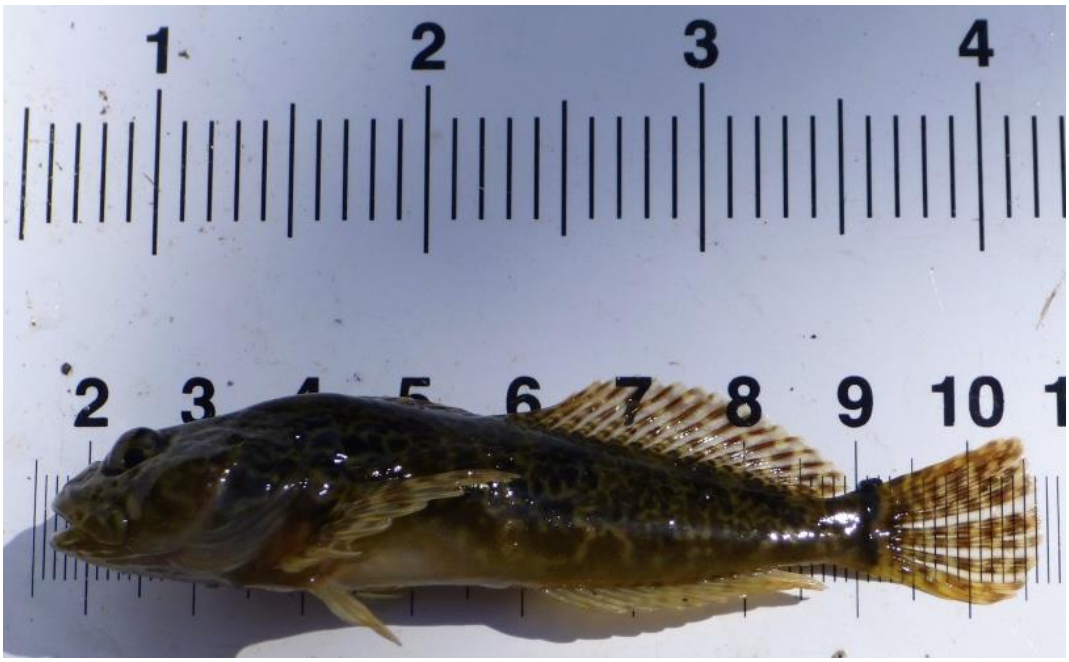
--*Robert Leidy*

References

Leidy, R.A. 2007. Ecology, assemblage structure, distribution, and status of fishes in streams tributary to the San Francisco Estuary, California. San Francisco Estuary Institute, Contribution No. 530.

Moyle, P.B. 2002. Inland Fishes of California, Revised and Expanded. University of California Press, Berkeley.

Riffle sculpins, *Cottus gulosus*; the latest native fish from Sausal Creek.



Riffle sculpins prefer shaded, shallow reaches of riffles and pools with cool water temperatures, high dissolved oxygen levels, undercut stream banks with root wads, and a sand-gravel-cobble substrate free of excessive silt. This permanent reach of Sausal Creek supports high quality habitat for riffle sculpins and rainbow trout.