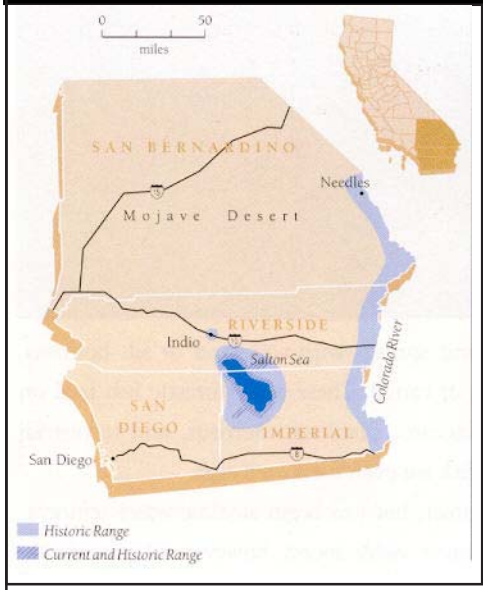
Desert Pupfish (*Cyprinodon macularius)*
Status -- Federal: Endangered; California: Endangered

Photo: Moose Peterson, WRP

The desert pupfish is highly adapted to surviving in harsh environments. It is extremely tolerant of high temperature, low dissolved oxygen, and high salinity, thus it is common in isolated, hot desert springs, salty marshes, and other extreme environments. Pupfish are sometimes mistaken for minnows, but unlike minnows, they have small mouths lined with teeth. The desert pupfish has a tan-to-olive body, with 5 - 8 vertical black bars on each side. The male is larger than the female, and measures about 3 inches (7.5 cm) in total length. During the breeding season, the male turns bright blue with yellow or orange fins and tail. In California, desert pupfish historically inhabited backwaters of the Colorado River down to Baja California; and springs, seeps and streams in the Salton Sink. Currently, desert pupfish distribution in California is confined

California Department of Pesticide Regulation
Endangered Species Project
www.cdpr.ca.gov/docs/endspec/index.htm

Desert Pupfish



to two natural tributaries to the Salton Sea: San Felipe and Salt Creeks with their associated wetlands; some shoreline pools of the Sea, and a majority of the irrigation drains leading into the Sea. Introduced populations remain in ten artificial pond refuges.

Behavior: Pupfish are aggressively territorial. Breeding males patrol territories normally 11 - 22 sq ft, usually centered on a submerged object. The fish dart aggressively after intruders, nipping at their tails. This "puppylike" behavior was characterized by Carl L. Hubbs, when he named the species "pupfish".

Food: Adult pupfish feed on aquatic insects, crustaceans, copepods, aquatic vegetation, detritus, snails, and even consume their own eggs and young.

Breeding: Pupfish spawn from April to October, whenever water temperature exceeds 68 F (20 C). When ready to spawn, a female leaves her school, engages in a short courtship ritual with a territorial male, and then lays a single egg at a time on the sand, silt, or rubble bottom. The egg adheres to the substrate. The female may lay hundreds of eggs over one season. The male fertilizes the eggs, which hatch about 10 days later. Larvae start to feed the day after they hatch.

Endangerment: One of the main reasons for the decline of the pupfish has been the introduction of exotic fish species, especially tilapia (*Tilapia sp.*), mosquitofish (*Gambusia affinis*), and mollies (*Poecilia sp.*). Other important factors threatening pupfish include habitat degradation and loss due to water diversion, invasive plants such as cattails and tamarisk, and exposure to contaminants.