U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account
DELTA SMELT
Hypomesus transpacificus

CLASSIFICATION: Threatened
Federal Register 58:12854; March 5, 1993
http://ecos.fws.gov/docs/federal_register/fr2235.pdf
Five Year Status Review (PDF), March 31, 2004

CRITICAL HABITAT: DESIGNATED
Federal Register 59:65256; December 19, 1994
http://ecos.fws.gov/docs/federal_register/fr2751.pdf
See critical habitat map (PDF)

RECOVERY PLAN: FINAL
Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes, November 26, 1996 http://ecos.fws.gov/docs/recovery_plan/961126.pdf. Note: Some information is out of date.

See our Delta Smelt Recovery page. It includes information about OCAP (the Long-Term Operations and Criteria Plan for coordination of the Central Valley Project and State Water Project). See also our Delta Smelt Working Group page, which also covers the Delta Smelt Risk Assessment Matrix (DSRAM).

DESCRIPTION
Delta smelt (*Hypomesus transpacificus*) are slender-bodied fish, about 2 to 3 inches long. They are in the Osmeridae family (smelts). They have a steely blue sheen on the sides and seem almost translucent. Smelts live together in schools and feed on zooplankton (small fishes and invertebrates).

Delta smelt are an euryhaline species (tolerant of a wide salinity range). They have been collected from estuarine waters up to 14 ppt (parts per thousand) salinity. For a large part of their one-year life span, delta smelt live along the freshwater edge of the mixing zone (saltwater-freshwater interface), where the salinity is approximately 2 ppt.

Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the mixing zone and disperse widely into river channels and tidally influenced backwater sloughs. They spawn in shallow, fresh or slightly brackish water upstream of the mixing zone.

Most spawning happens in tidally influenced backwater sloughs and channel edgewaters. Although spawning has not been observed in the wild, the eggs are thought to attach to substrates such as cattails, tules, tree roots and submerged branches.

DISTRIBUTION
Delta smelt are found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. Their historic range is thought to have extended from Suisun Bay upstream to at least the city of Sacramento on the Sacramento River

and Mossdale on the San Joaquin River. They used to be one of the most common pelagic (living in open water away from the bottom) fish in the upper Sacramento-San Joaquin Estuary.

THREATS

Factors thought to have contributed to the decline of the species include reductions in freshwater outflow, entrainment losses to water diversions, entrainment at power plant intakes, changes abundance and composition of food organisms, environmental contaminants, and competition and predation from exotic invasive aquatic species.

Impact of riprapping: Riprap is rock, concrete and other material placed on the banks of a river to reduce erosion. It can impact aquatic organisms such as Delta smelt. Read our 2004 report: Impacts of Riprapping to Aquatic Organisms and River Functioning, Lower Sacramento River, California.

PROGRAMMATIC CONSULTATION

The Service's Programmatic Consultation with the U.S. Army Corps of Engineers on the issuance of section 10 and 404 permits streamlines projects with relatively small effects on the Delta smelt.

REFERENCES FOR ADDITIONAL INFORMATION

Note: There is a special Delta smelt species account for 4th, 5th and 6th grade students.

Moyle, P. B., B. Herbold, D. E. Stevens, and L. W. Miller.1992. Life history and status of delta smelt in the Sacramento-San Joaquin Estuary, California. Transactions of the American Fisheries Society. 121:67-77.

Nichols, F.H., J.E. Cloern, S.N. Luoma, and D.H. Peterson 1986. The modification of an estuary. Science 231:567-573.

Thelander, C. ed. 1994. Life on the edge: a guide to California's endangered natural resources. BioSystem Books. Santa Cruz, CA. p 342-344.

U.S. Fish and Wildlife Service. 1996. Sacramento-San Joaquin Delta Native Fishes Recovery Plan. Portland, Oregon.

U.S. Fish and Wildlife Service. 2004. Impacts of Riprapping to Aquatic Organisms and River Functioning, Lower Sacramento River, California. Sacramento, CA.

Wang, J.C.S. 1986. Fishes of the Sacramento-San Joaquin Estuary and Adjacent Waters, California: A Guide to the Early Life Histories.

Credits: Fish & Wildlife Service photo

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825
Phone (916) 414-6600
FAX (916) 414-6713

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