USACE Natural Resource Management Fish



Delta Smelt

Delta Smelt (*Hypomesus transpacificus*): The delta smelt is a slender-bodied fish which typically grows to be 2-3 inches in length. Live fish are almost translucent and have a blue sheen on the sides. Eyes are very large in relation to the length of the head. Sometimes a small, dark spot can be found between the mandibles, but not often. There is a small, translucent adipose fin between the dorsal and caudal fins. (USFWS)

Status: Threatened, listed 1993 NatureServe: Critically Imperiled



Order: The Osmeriromes order includes two sub-orders-Osmeroide and Argentinoidei —with a total of nine families and 240 unique species of fish. This order contains smelts, galaxiids, and their relatives. Characteristics that are unique to, and present in, all members have notbeen determined. (Grzimek's Animal Life Encyclopedia)

State/Provincial

Conservation Status

Photos Courtesy of U.S. Fish and Wildlife's Online Digital Media Library

Management and Protection:

- Delta smelt are endemic to the San Francisco Bay-Delta in California. They are a euryhaline species, meaning they are able to tolerate a wide range of salinities. However, in the wild the delta smelt is rarely found in waters with more than 10-14 ppb salinity (about 1/3 seawater). (USFWS)
- Between December and March delta smelt begin their migration back into freshwater areas where spawning is thought to take place. It is thought that this migration may be triggered by the first seasonal high outflow event in the Delta. (USFWS)
- It is thought that spawning occurs from late January through late June or early July. Peak spawning is thought to take place April through mid-May. Sandy substrate may be preferred for spawning habitat. Most delta smelt live only one year and die after spawning, however some may live to spawn a second year. (USFWS)
 - Threats to the delta smelt include summer and fall increases in salinity due to reduced flow, fall increases in water clarity, impacts of introduced species like the overbite clam, and predation. Small populations increase vulnerability to threats. (USFWS)

July 2021

USACE ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended nearly \$6 million on efforts related to the Delta Smelt since 2006. Costs have been incurred by multiple business lines including Environmental Stewardship, Flood Risk Management, Navigation, Planning and Program Management, and Regulatory. Expense types have included Site Visits and Inspections, Research, and Inventory, Survey, and Monitoring Efforts.



Delta Smelt= \$5,818,096 (2006)

What is USACE NRM Doing: Because the delta smelt is endemic to the San Francisco Bay-Delta in California, its entire natural range falls within the South Pacific Division. In the 2020 Natural Resources Management Assessment, two projects within the Sacramento District were associated with the delta smelt. Buchanan Dam and H.V. Eastman Lake project noted that the delta smelt has rare occurrences at the project while The New Melones/Stanislaus River was listed as having the potential for this fish to occur.

The USACE accepts responsibility for sustainable use, stewardship, and restoration of natural resources at projects across the Nation. At those projects where federally listed species, such as the delta smelt are known to—or have the potential to—occur, measures are taken to ensure that current and proposed work will not negatively impact species or habitats.



Photo: An image of H.V. Eastman Lake in Sacramento District. This project was noted to have the potential for the delta smelt to occur.

This fact sheet has been prepared as an unofficial publication of the U.S. Army Corps of Engineers (USACE). This online publication is produced to provide its readers information about best management practices related to special status species. Editorial views and opinions expressed are not necessarily those of the Department of the Army. Mention of specific vendors does not constitute endorsement by the Department of the Army or any element thereof.

