

Memorandum

Date: 5/28/2019

To: Gregg Erickson
Regional Manager
Bay Delta Region

From: Trishelle Tempel ^{TLT}
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Subject: 2019 Delta Smelt Relative Abundance Index from the Spring Kodiak Trawl

2019 Results

The 2019 Spring Kodiak Trawl (SKT) Delta Smelt index of relative abundance was 0.4 and the lowest index on record (Figure 1). The Spring Kodiak Trawl index is calculated using 39 stations, each sampled monthly January through April (156 sampling events). Only two Delta Smelt were caught during these sampling events: one was collected in the Sacramento River in January, and one was collected in Suisun Bay in February (Figure 2). This low index and associated catch was consistent with record low Delta Smelt relative abundance in proceeding 2018 surveys¹, and the 2019 Enhanced Delta Smelt Monitoring (EDSM)². The EDSM caught 24 Delta Smelt from January through March (about 1,820 sampling events), mostly in the Sacramento River, the Sacramento Deep Water Ship Channel, and Suisun Bay.

Since the SKT monitors the adult Delta Smelt spawning stock, this year's index indicates that the number of spawners was at a record low, which may limit larval recruitment and hinder the recovery of Delta Smelt in 2019.

¹ See *Memorandum: 2018 20-mm Survey Delta Smelt Index of Relative Abundance Supplemental Documentation*, available here: <https://www.wildlife.ca.gov/Conservation/Delta/20mm-Survey/Bibliography> and *Memorandum: Fall Midwater Trawl 2018 Annual Fish Abundance Summary*, available here: <https://www.wildlife.ca.gov/Conservation/Delta/Fall-Midwater-Trawl/Bibliography>

² See Delta Juvenile Fish Monitoring Program Enhanced Delta Smelt Monitoring, Monitoring Data https://www.fws.gov/lodi/juvenile_fish_monitoring_program/jfmp_index.htm

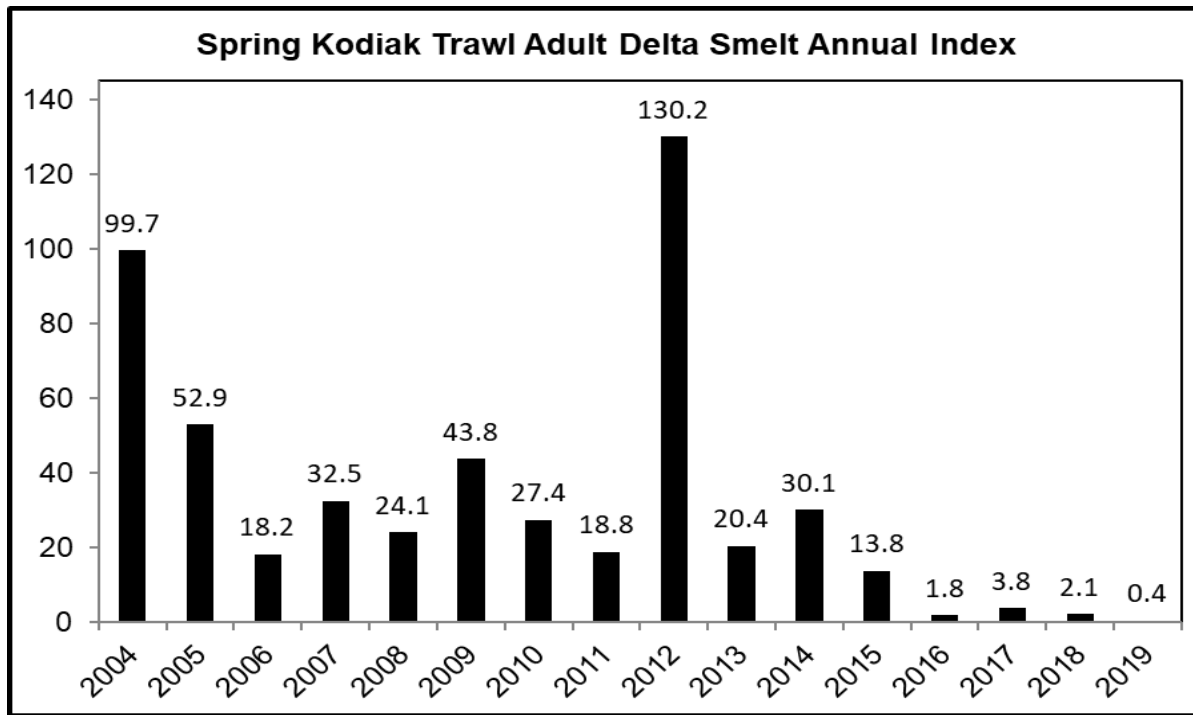


Figure 1. The CDFW's Spring Kodiak Trawl Delta Smelt index, 2004-2019.

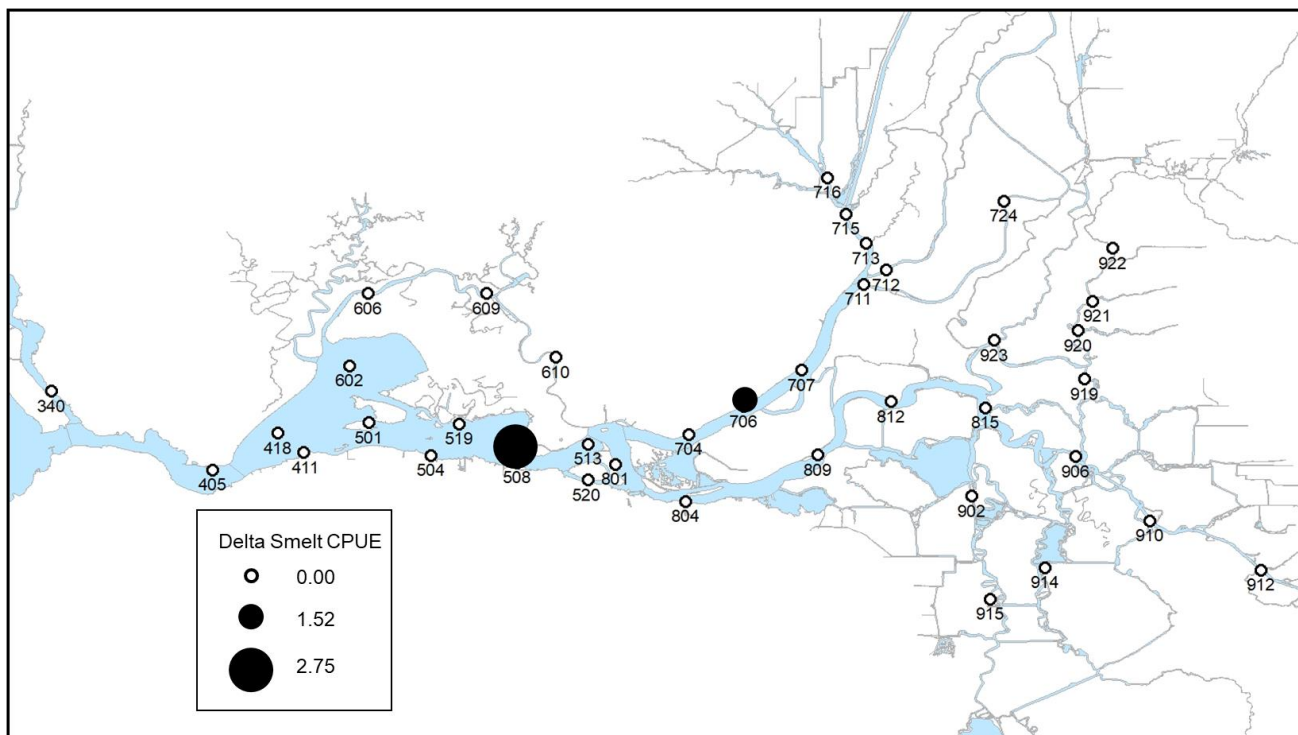


Figure 2. Map of the upper San Francisco Estuary showing the 2019 CDFW Spring Kodiak Trawl index stations and associated adult Delta Smelt catch per unit effort (10,000 m³) for all index surveys.

Index Methods

SKT operates annually to track the distribution, relative abundance, and spawning condition of adult Delta Smelt throughout its historic range in the upper San Francisco Estuary. The SKT is conducted monthly from January to May and was initiated in 2002. The methods were standardized in 2004 and a Delta Smelt index was first developed in 2012.

