

## Memorandum

**Date:** August 8, 2022

**To:** Erin Chappell  
Regional Manager  
Bay Delta Region

**From:** Dr. Timothy D Malinich  
Environmental Scientist  
Bay Delta Region

**Subject:** 2022 Summer Townet Survey Delta Smelt Abundance Index

The 2022 Summer Townet Survey annual abundance index for young-of-year Delta Smelt *Hypomesus transpacificus* was 0.0. This is the seventh year in which the number of young-of-year Delta Smelt collected during the first two Summer Townet surveys was low enough to result in an index equal to zero. The first zero index was reported in 2015 and has reported a 0.0 index every year since 2018 (Figure 1).

Summer Townet conducts six Delta wide surveys in which 31 index and nine supplemental stations are sampled (Figure 2). The annual index is the average of the first two survey indices. Survey indices are calculated by multiplying young-of-year Delta Smelt catch at each index station by a station-specific weighting factor. We sum these weighted catches for the 31 index stations and divide this sum by 1000. More information on index calculation can be found at on the department website for the [Summer Townet Survey](#). Catch from nine supplemental stations in the Napa River, Cache Slough, and Sacramento Deep Water Ship Channel (SDWSC) are not included in the index.

The first two surveys of 2022 were conducted during June 6-9 and June 20-23. During the first and second surveys, no Delta Smelt were collected at index or non-index stations.

This is the third time that n=0 Delta Smelt have been caught by the Summer Townet Survey in the first two surveys (see last ten years of catch in Table 1). Delta Smelt have been low or absent at index stations but still observed in non-index stations (continuously sampled starting in 2011) in the North Delta. More recently, even non-index stations have yielded low catches of the State and federally listed species. Within the geographic range of the Summer Townet Survey, the remaining Delta Smelt population may be in numbers below our detection ability. This pattern is consistent with other surveys in the Delta. In 2022, the Spring Kodiak Trawl sampled January through May and observed adult Delta Smelt early in the year (February (n=5) and March (n=11)) but catch dropped

to two Delta Smelt in April and no Smelt observed in May. The 20-mm Survey observed larval Delta Smelt in March (n=7) and April (n=2) surveys but observed no Delta Smelt in their May or June surveys. In addition, the U.S. Fish and Wildlife Service (USFWS) Enhanced Delta Smelt Monitoring Program reported n=18 (20-mm) Delta Smelt between April and June and no Delta Smelt through mid-July (Kodiak Trawl). Only 2 of the 18 Delta Smelt were caught in June (6/1 & 6/6) in the Lower Sacramento River sub-region. The CDFW 20-mm survey data is available at: [20-MM](#); and the Spring Kodiak Trawl data is available at: [SKT](#). USFWS data available at: [Delta Juvenile Fish Monitoring Program](#).

**Cc:** Dr. James Hobbs  
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Table 1. Delta Smelt catch by survey from the CDFW Summer Townet Survey for years 2012-2022. Sampling in 2022 is ongoing at the time of writing this memo (S=Survey; NI= Non-Index; NS= not sampled).

Year	Index stations (n=31) Survey							Non-index stations (n=9) Survey						Total
	1	2	3	4	5	6		1	2	3	4	5	6	
2012	19	30	37	16	4	5		50	39	21	12	7	9	249
2013	35	18	18	37	2	9		29	7	2	7	1	5	170
2014	5	21	3	7	7	8		20	3	1	2	0	1	78
2015	1	0	2	0	0	0		5	4	10	0	0	1	23
2016	2	0	0	0	1	0		3	0	0	0	0	0	6
2017	1	5	6	3	0	15		0	1	2	0	0	0	33
2018	0	1	0	1	0	0		1	0	0	0	0	0	3
2019	0	0	0	0	0	0		0	1	0	0	0	0	1
2020	0	0	0	0	0	0		0	0	0	0	0	0	0
2021	0	0	0	0	0	0		0	0	0	0	0	0	0
2022	0	0	0	0	NS	NS		0	0	0	0	NS	NS	0
Total	63	75	66	64	14	37		108	55	36	21	8	16	563

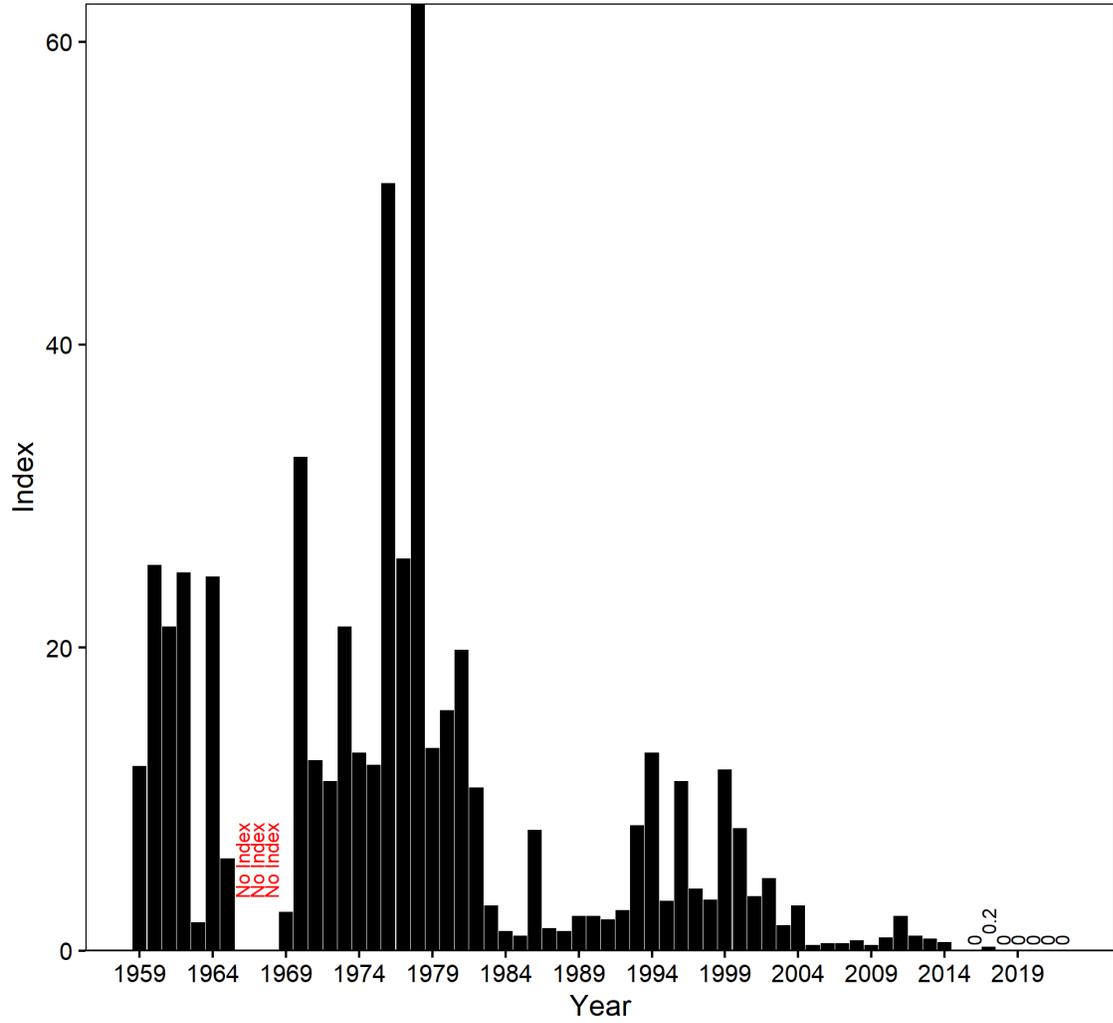


Figure 1. Summer Townet Survey Delta Smelt annual abundance indices 1959-2022.

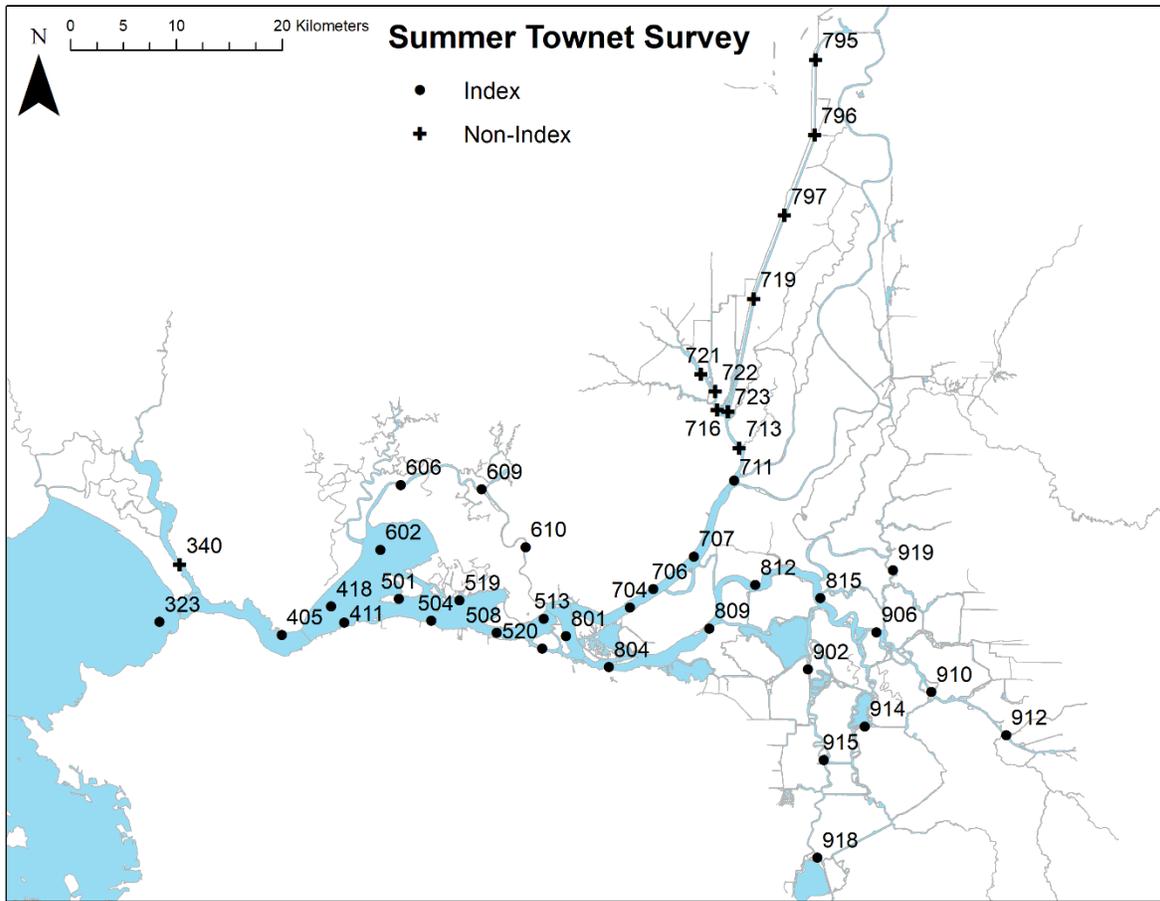


Figure 2. Map of the San Francisco Bay-Delta region and the distribution of Summer Townet Survey index and non-index stations. Station 721 was not sampled this year due to aquatic vegetation. It was replaced in 2021 by the new downstream station 722.