

Memorandum

Date: July 14, 2016

To: Scott Wilson
Regional Manager
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Subject: The 2016 20-mm Survey Delta Smelt Index

The 2016 Delta Smelt index is 0.7. This is the second-lowest index on record and is only slightly higher than the lowest index on record (Figure 1).

The annual 20-mm Survey monitors the distribution and relative abundance of post-larval and juvenile Delta Smelt throughout their historical range. Nine week-long surveys are routinely conducted every other week from mid-March through early July, and each survey includes 41 index stations (Figure 2). The abundance index is calculated using the four surveys that encompass the period when Delta Smelt mean length is 20 mm.

The 2016 index was calculated using Surveys 2 through 5, which occurred March 28th to May 13th. All index stations were sampled during those surveys¹. This was the first time a March survey was used for the index calculation, which indicates that Delta Smelt reached juvenile size (20 mm) earlier than any other year on record (1995-2016).

We defined 'index catch' as the number of Delta Smelt caught at index stations during index surveys. Index catch was only 25, which was higher than the index catch in 2015 (n=8) but drastically less than the historical max (~2000) and mean (~600) index catch. Since the index is calculated using a geometric mean, both catch and distribution can affect the magnitude of the index. For example, broader distribution in 2007 resulted in a 2007 index that was higher than the 2016 index even though the 2007 catch was lower.

More information on prior year indices, methods, protocols, and 20-mm Survey data can be found on our webpage: <https://www.wildlife.ca.gov/Conservation/Delta/20mm-Survey>.

¹ For a complete list of index stations that were not sampled throughout 20-mm Survey history, see *Memorandum: 2015 Index of Delta Smelt Abundance from the 20-mm Survey* here: <http://www.dfg.ca.gov/delta/data/20mm/bibliography.asp>

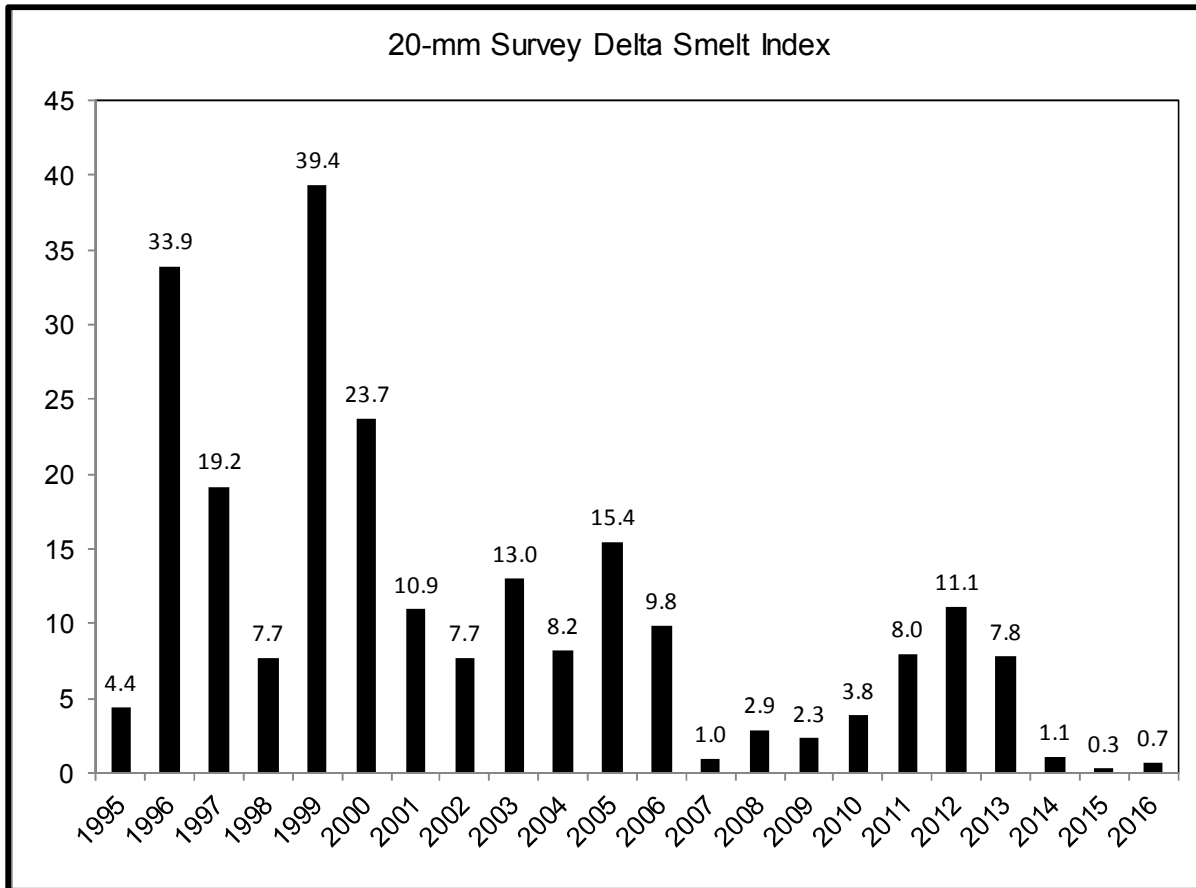


Figure 1. Delta Smelt index of abundance from CDFW's 20-mm Survey, 1995-2016.

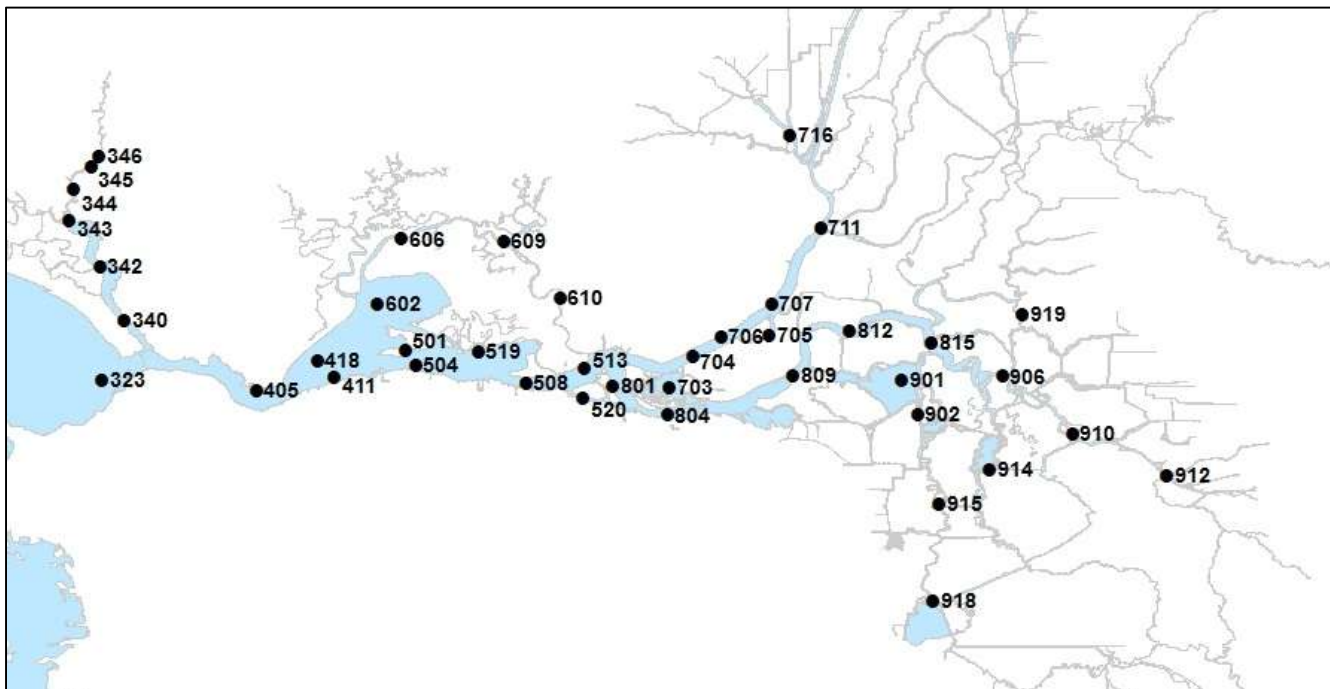


Figure 2. CDFW's 20-mm Survey index station map.