

Memorandum

Date: July 15, 2015

To: Scott Wilson
Regional Manager
Bay Delta Region

From: Lauren Damon
Environmental Scientist
Bay Delta Region

Subject: 2015 Index of Delta Smelt Abundance from the 20-mm Survey

The 2015 20-mm Survey index of Delta Smelt abundance is 0.3 (Figure 1). This is the lowest index in the 21-year history of the 20-mm Survey (1995-2015).

To monitor short-term trends in the distribution and abundance of post-larval and juvenile Delta Smelt, the 20-mm Survey conducts week-long 'surveys' nine times each year from March through July. Although the 20-mm Survey was not originally intended to index the Delta Smelt population's seasonal abundance, an index from 20-mm Survey data was first developed around 2005.

At two-week intervals, each survey samples 41 stations that contribute data to the index and six stations located in the North Delta that do not contribute data to the index (Figure 2). Use of 'index stations' allows apples-to-apples comparisons of annual abundance. 'Non-index stations' have been added to provide additional information on distribution and spawning location.

The index is calculated using data from the two surveys immediately before young-of-the-year Delta Smelt reach an average length of 20 mm and the two surveys immediately afterwards. This year's index was calculated from Surveys 3 through 6, which occurred during April and May.

Only eight Delta Smelt were caught during index surveys at index stations, all of which were upstream of the Sacramento-San Joaquin river confluence. Sixty-six Delta Smelt were caught during index surveys at non-index stations in the Sacramento Deep Water Shipping Channel (stations 719 and 723)¹.

Applications to query and to map 20-mm Survey data are available online here:

<http://www.dfg.ca.gov/delta/projects.asp?ProjectID=20mm>

¹ Foul weather and boat breakdowns during a survey sometimes prevent sampling at one or more index stations. During Survey 3 in 2015, six index stations in the Napa River were not sampled. Table 1 is a complete listing of index stations that were not sampled and should be considered when comparing annual indices.

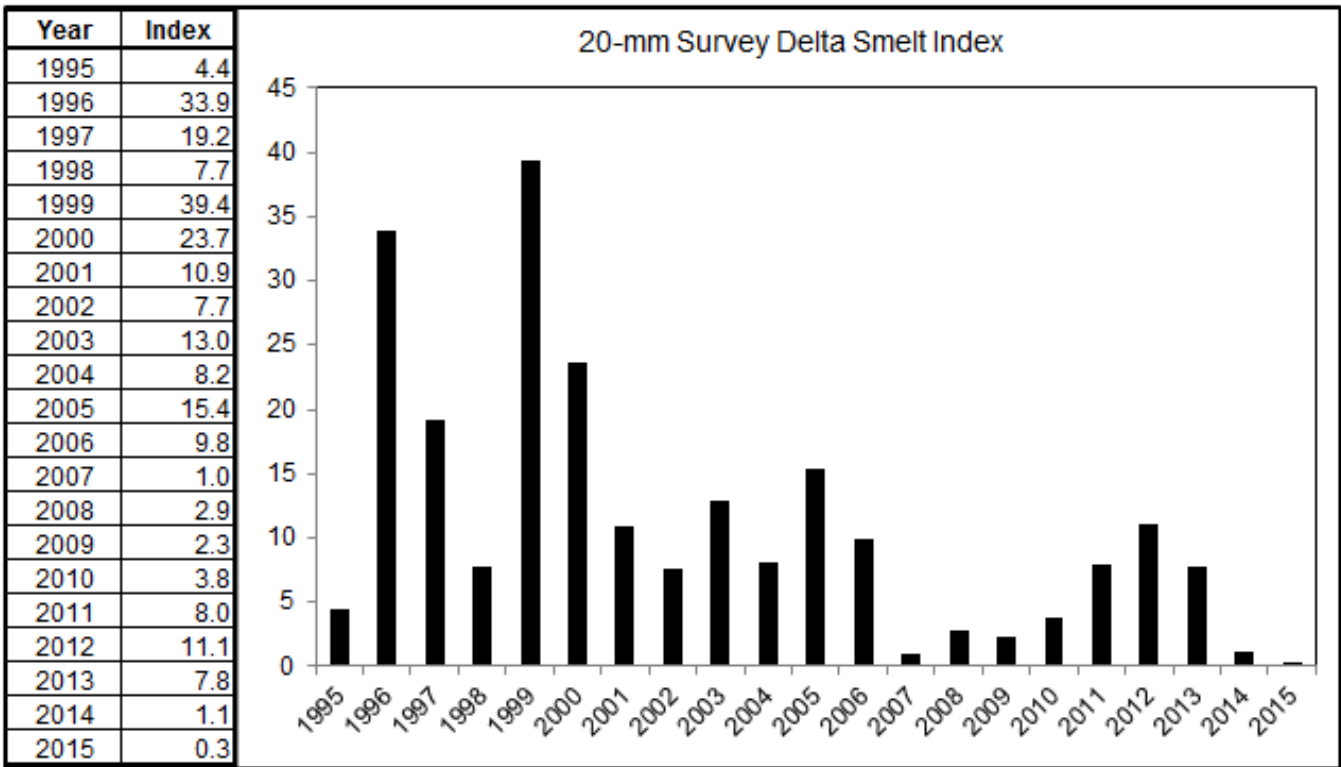


Figure 1. Delta Smelt index of abundance from CDFW's 20-mm Survey, 1995-2015.

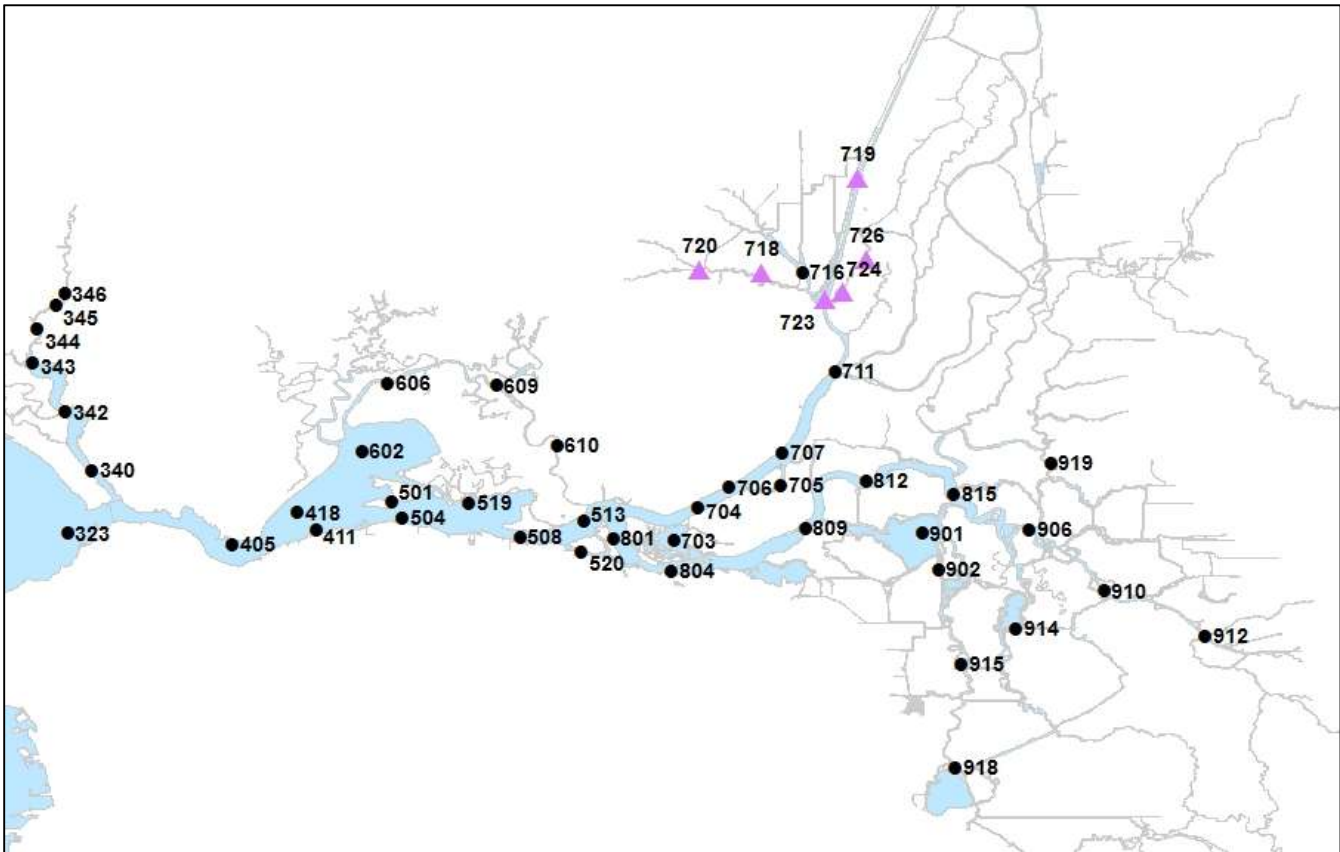


Figure 2. CDFW's 20-mm Survey station map. Black circles denote index stations, purple triangles denote non-index stations.

Table 1. CDFW's 20-mm Survey index stations that were not sampled. Yellow shading denotes index surveys. Non-applicable (NA) surveys were not conducted, except that in 2001 five stations were sampled in Survey 9.

Survey	1	2	3	4	5	6	7	8	9
1995	342, 343, 344, 345, 346	342, 343, 344, 345, 346, 915, 918	342, 343, 344, 345, 346, 501, 508, 519	342, 343, 344, 345, 346, 411, 501, 504, 519	342, 343, 344, 345, 346, 901	342, 343, 344, 345, 346	342, 343, 344, 345, 346, 519	342, 343, 344, 345, 346, 918	NA
1996	342, 343, 344, 345, 346				323, 812, 914	501, 703	501, 703, 901	501, 901	NA
1997	323, 405, 411, 418, 501, 504, 508, 513, 519, 520, 703, 704, 705, 706, 707, 711, 716, 801, 912	703	345, 346, 501, 705	707, 918	323, 340, 342, 343, 344, 345, 346, 405, 411, 501, 504, 519, 906	345, 346			
1998	508, 513, 520, 703, 705, 707, 711, 716, 801, 812, 815, 912,	323, 340, 342, 343, 344, 345, 346, 405, 411, 501, 504, 705, 707, 711, 716, 812, 815, 906	405, 411, 504				323, 606, 609	914	346, 706
1999		323, 340, 342, 343, 344, 345, 346		323, 340, 342, 343, 344, 345, 346, 405, 411, 418, 501, 519, 705, 706,					NA
2000		418, 812							
2001				323, 340, 343, 345					NA
2002							323, 340, 342, 343, 344, 345, 346, 405, 418	323	NA
2003						323		323, 340, 342, 343, 344, 345, 346	NA
2004	323, 340, 342, 343, 344, 345, 346, 501		918			323, 340, 342, 343, 344, 345, 346, 405, 411		343, 345	NA
2005								323	323, 340, 342, 343, 344, 345, 346
2006	919	513, 804							
2007	323, 340, 342, 343, 344, 345, 346, 418, 411, 405, 914				342, 343, 344, 345, 346				342, 343, 344, 345, 346
2008					323, 340, 342, 343, 344, 345, 346, 405, 606, 609, 610, 711, 716	323, 340, 342, 343, 344, 345, 346, 405	919		
2009		344, 345, 346, 918	323, 340, 342, 343, 344, 345, 346	344, 345, 346	609, 610	340, 609, 610			
2010								323, 340, 342, 343, 344, 345, 346, 405, 411, 418	342, 343, 344, 345, 346, 501, 519, 513, 520, 602, 606, 609, 610, 703, 801
2011				918					
2012									
2013									703
2014	323, 340, 342, 343, 344, 345, 346								
2015	323, 340, 342, 343, 344, 345, 346	918	340, 342, 343, 344, 345, 346						