



State of California
Department of Fish and Game

Memorandum

Date: December 18, 2012

To: Scott Wilson
Acting Regional Manager, Region 3
California Dept of Fish and Game

From: Dave Contreras
Environmental Scientist
California Dept of Fish and Game

Subject: Fall Midwater Trawl 2012 Summary

The California Department of Fish and Game has conducted the Fall Midwater Trawl Survey (FMWT) to index the fall abundance of pelagic fishes nearly annually since 1967. FMWT equipment and methods have remained consistent since the survey's inception to allow abundance indices to be compared across time.

The FMWT conducts monthly surveys from September through December. The sum of the September through December monthly survey indices comprise the annual index. During each monthly survey, one oblique midwater trawl tow is made at each of the 100 'index stations' used for index calculation and at an additional 22 non-index stations that provide enhanced distribution information (Figure 1).

The 2012 sampling season was successfully completed on December 12, 2012. The following summary contains annual abundance information for five fish species based on FMWT survey sampling and describes the 2012 fall distributions of these fishes.

Delta Smelt

The 2012 delta smelt index is 42, making it one of the lowest indices in FMWT history (Figure 2). Delta smelt abundance was highest in 1970 and has been consistently low since 2003, except in 2011.

Delta smelt (n=37) were collected at index stations from Suisun Bay through the lower Sacramento River. No delta smelt were collected in September. In the following two months delta smelt were collected in the Confluence and the lower Sacramento River. In December, the few delta smelt collected at index stations were found farther downstream in Suisun, Grizzly, and Honker bays. Delta smelt were also consistently collected at non-index stations in the Sacramento River Deep Water Ship Channel (SRDWSC) (n=8 total; 2, 3, 3 in October-December) and once in Cache Slough (n=1 in December).

Age-0 Striped Bass

The 2012 age-0 striped bass index is 125 and one of the lowest indices in FMWT history (Figure 3). Age-0 striped bass abundance was highest at the survey's inception in 1967.

Age-0 striped bass (n=91) were collected at index stations from San Pablo Bay into the lower Sacramento and San Joaquin rivers, with the majority (76%) of these fish collected from Suisun Bay through the confluence and Montezuma Slough. Age-0 striped bass were also collected at non-index stations in the Napa River (n=1), SRDWSC (n=3), and Cache Slough (n=3).

Longfin Smelt

The 2012 longfin smelt index is 61, which is the second lowest index in FMWT history (Figure 4). Longfin smelt abundance was highest in 1967.

Longfin smelt (n=35) were collected at index stations from San Pablo Bay through the lower Sacramento River. Similar to last year, 60% percent of the total catch occurred in December after upper estuary water temperatures cooled. One longfin smelt was collected in Cache Slough in December.

Threadfin Shad

The 2012 threadfin shad index is 41, making it the lowest in FMWT history and the fifth in a series of very low abundance indices (Figure 5). Threadfin shad abundance was highest in 1997.

Threadfin shad (n=30) were collected at index stations from San Pablo Bay through the lower Sacramento and San Joaquin rivers and the South Delta. Most threadfin shad were collected at non-index stations (occasionally 100s per tow) in the SRDWSC (n=1541), Cache Slough (n=20), and the Mokelumne River (n=3).

American Shad

The 2012 American shad index is 415 and the fourth lowest in FMWT history (Figure 6). American shad abundance was highest in 2003.

American shad (n=302) were collected at index stations from San Pablo Bay through the lower Sacramento and San Joaquin rivers and the South Delta. American shad catch was highest in September (n=319) and decreased each subsequent survey month. American shad were also collected at non-index sampling stations in the Napa River (n=1), Mokelumne River (n=4), SRDWSC (n=299), and Cache Slough (n=149).

cc: Marty Gingras
Randy Baxter
Bob Fujimura
Kathy Hieb

FMWT Station Map

- = Index stations
- ◆ = Non-index stations (began in 1990)
- ◇ = Non-index stations (began in 1991)
- ▲ = Non-index stations (began in 2009)
- ⊕ = Non-index stations (began in 2010)

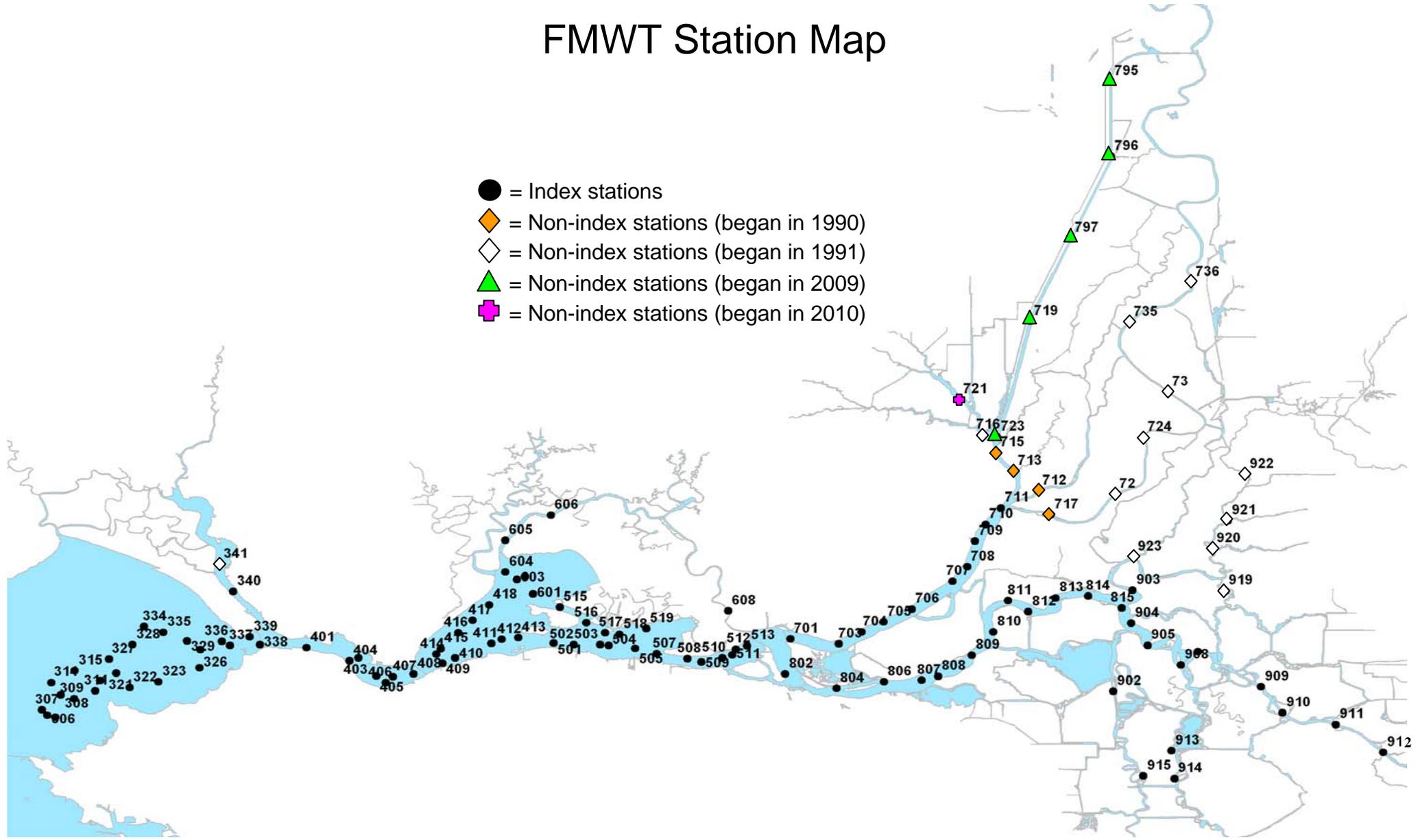


Figure 1. California Department of Fish & Game Fall Midwater Trawl Sampling Sites

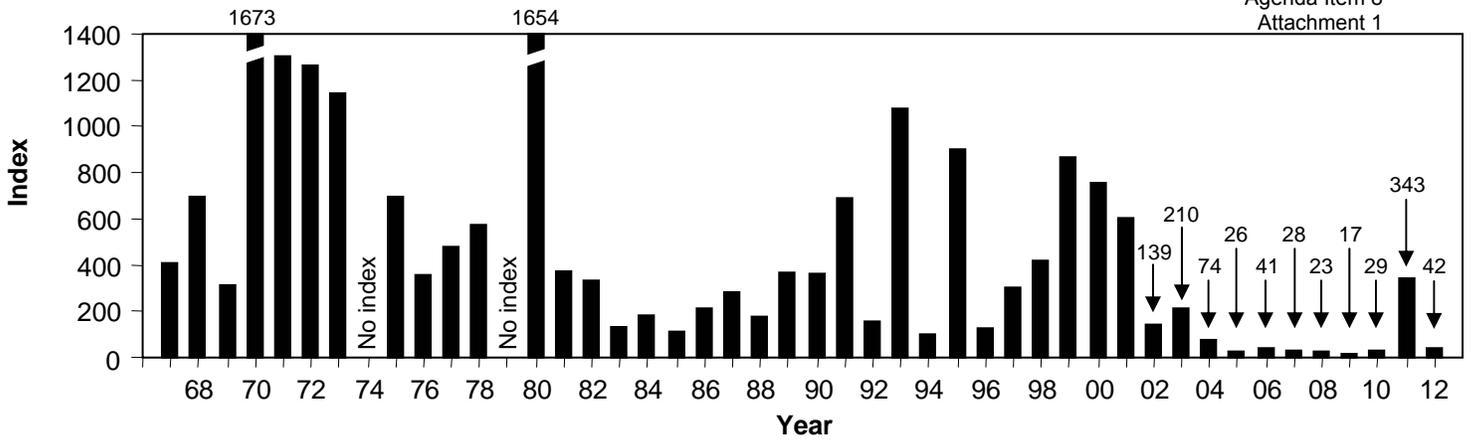


Figure 2. Delta smelt FMWT annual abundance indices, 1967-2012.

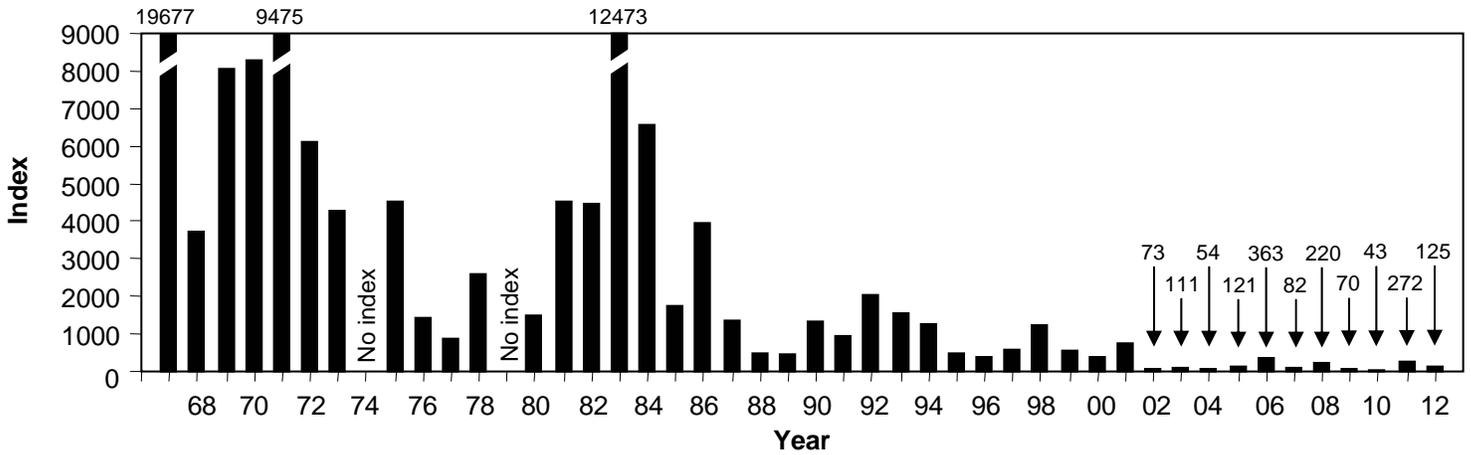


Figure 3. Age-0 striped bass FMWT annual abundance indices, 1967-2012.

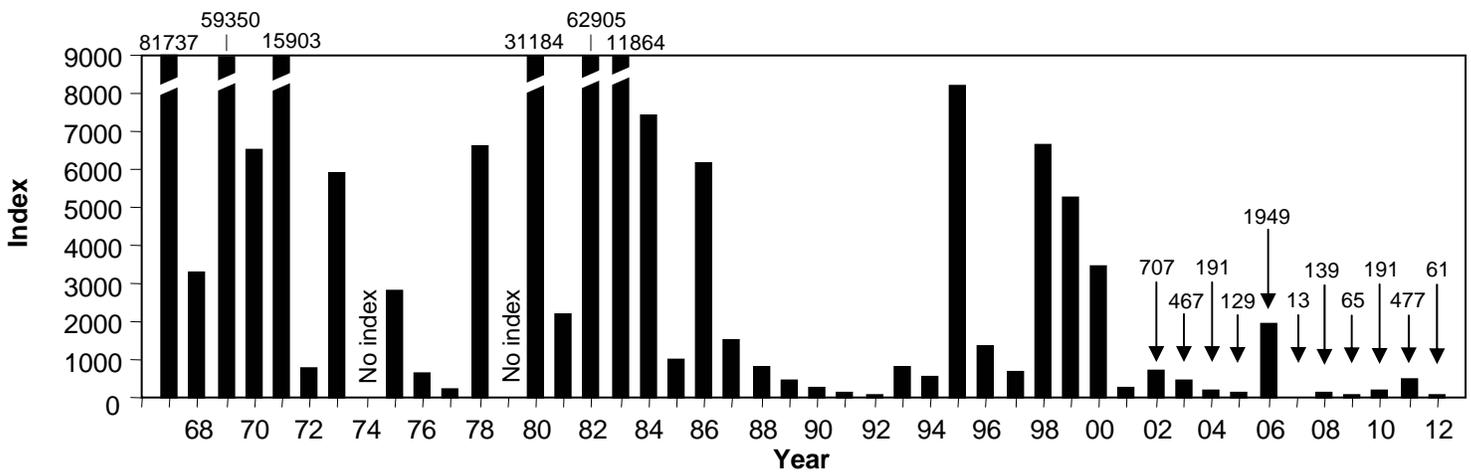


Figure 4. Longfin smelt FMWT annual abundance indices, 1967-2012.

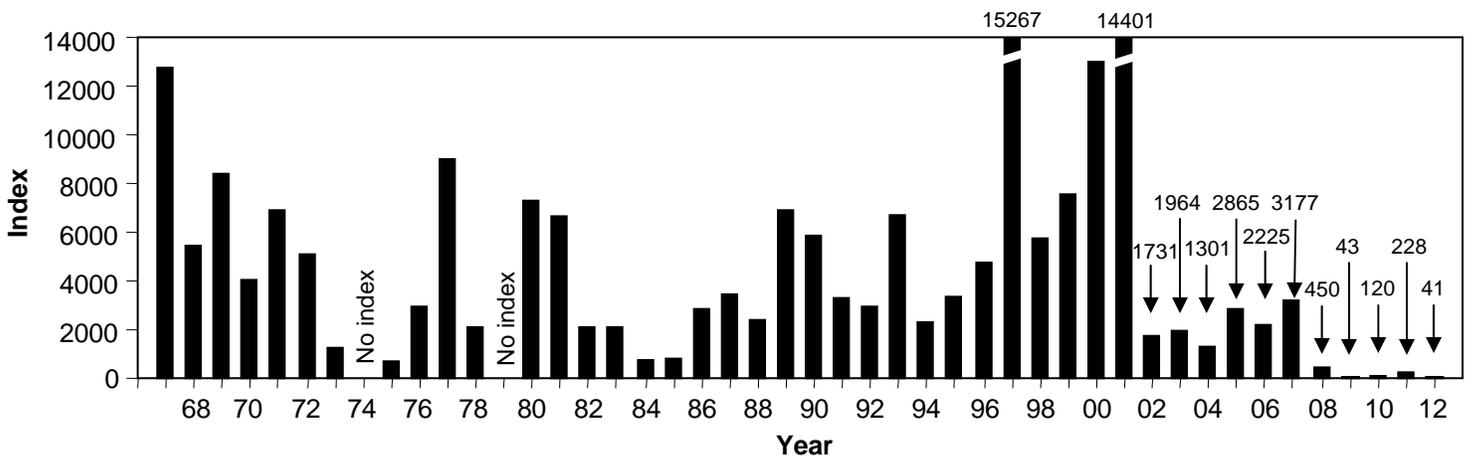


Figure 5. Threadfin shad FMWT annual abundance indices, 1967-2012.

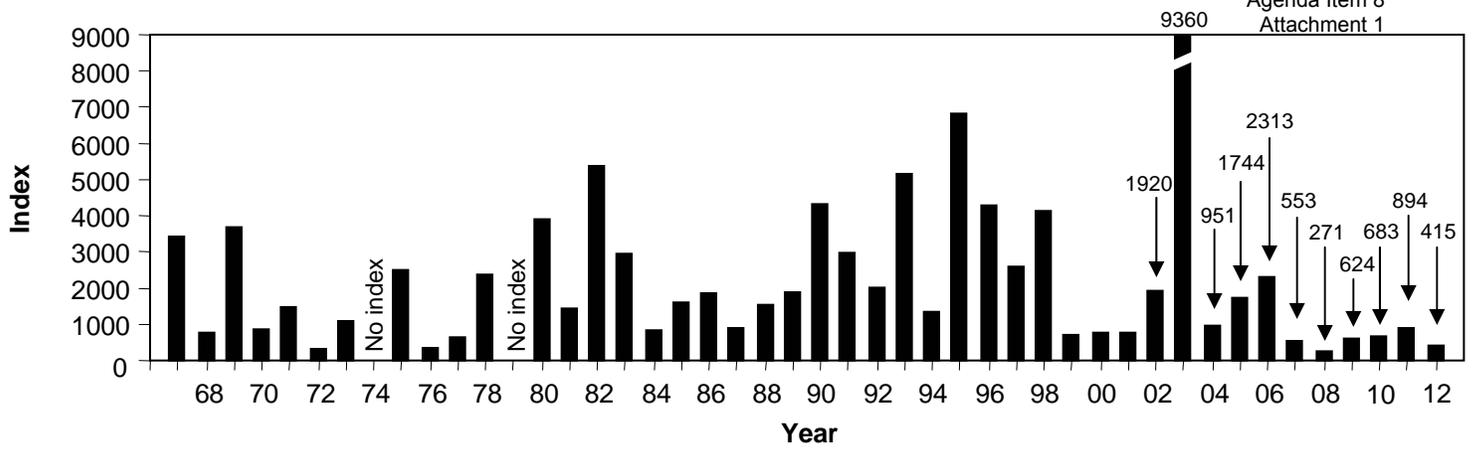


Figure 6. American shad FMWT annual abundance indices, 1967-2012.