State of California
Department of Fish and Wildlife

M e m o r a n d u m

Date: January 2, 2014

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

From: Dave Contreras
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Subject: Fall Midwater Trawl 2013 Annual Fish Abundance Summary

The California Department of Fish and Wildlife 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 annual abundance index is the sum of the September through December monthly survey indices. During each monthly survey, one oblique midwater trawl tow is conducted at each of 100 index stations used for index calculation and at an additional 22 non-index stations that provide enhanced distribution information (Figure 1).

The 2013 sampling season was successfully completed on December 17, 2013. Field crews successfully conducted trawl tows at all index stations during all four survey months. Logistical difficulties precluded sampling at a single non-index station each in the Napa River during September and in the upper Sacramento River during November; all other non-index stations were successfully sampled. The following summary contains 2013 annual abundance information for five fish species based on FMWT survey sampling and describes the 2013 fall distributions of these fishes.

Delta Smelt

The 2013 Delta Smelt index is 18, making it the second lowest index in FMWT history (Figure 2). Delta Smelt abundance was highest in 1970 and has been consistently low since 2003, except in 2011.

Through the fall, Delta Smelt (n=18) were collected at index stations from Grizzly Bay through the lower Sacramento River. In September, they were collected in Honker Bay (n=2), the confluence (n=1), and the lower Sacramento River (n=1). In October, they were found in the confluence (n=2) and lower Sacramento River

(n=1) and by November, they were found at the confluence (n=2). In December, they were collected from Grizzly Bay (n=1), Montezuma Slough (n=1), Honker Bay (n=3), the confluence (n=3), and the lower Sacramento River (n=1). During the four surveys, only two Delta Smelt were caught at non-index stations. Both were caught in the Sacramento River Deep Water Shipping Channel (SRDWSC) in November.

Age-0 Striped Bass

The 2013 age-0 Striped Bass index is 70 and tied for the third lowest index in FMWT history (Figure 3). Age-0 Striped Bass abundance was highest at the survey's inception in 1967.

Age-0 Striped Bass (n=55) were collected at index stations from San Pablo Bay through the lower Sacramento River. Distribution varied month to month and over half of age-0 Striped Bass catch in 2013 occurred in December. One age-0 Striped Bass was collected at a non-index station in Cache Slough in October.

Longfin Smelt

The 2013 Longfin Smelt index is 164 and the eighth lowest index in FMWT history (Figure 4). Longfin Smelt abundance was highest in 1967.

Longfin Smelt (n=87) 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. One Longfin Smelt was collected at a non-index station in the SRDWSC in November.

Threadfin Shad

The 2013 Threadfin Shad index is 277, the fifth lowest in FMWT history, and the sixth in a series of very low abundance indices (Figure 5). Threadfin Shad abundance was highest in 1997.

Threadfin Shad (n=208) were collected at index stations from San Pablo Bay through the lower Sacramento and San Joaquin rivers and the South Delta. From September through November, they were mostly (76%) found in freshwater areas (lower Sacramento and San Joaquin rivers). In December, the number caught increased and distribution expanded with more fish captured in Suisun and San Pablo bays. Threadfin Shad were also collected at non-index stations in the Napa River (n=1), Cache Slough (n=761), SRDWSC (n=676), the upper Sacramento River (n=3), and the Mokelumne River (n=1).

American Shad

The 2013 American Shad index is 309 and the second lowest in FMWT history (Figure 6). American Shad abundance was highest in 2003.

American Shad (n=231) distribution varied from September to December but 79% of the total index catch were found at stations from Suisun Bay through the lower Sacramento River. American Shad were also collected at non-index stations in the Napa River (n=1), Cache Slough (n=46), SRDWSC (n=131), Steamboat Slough (n=2), and Mokelumne River (n=3).

cc: Marty Gingras, Randy Baxter, Bob Fujimura, and Kathy Hieb

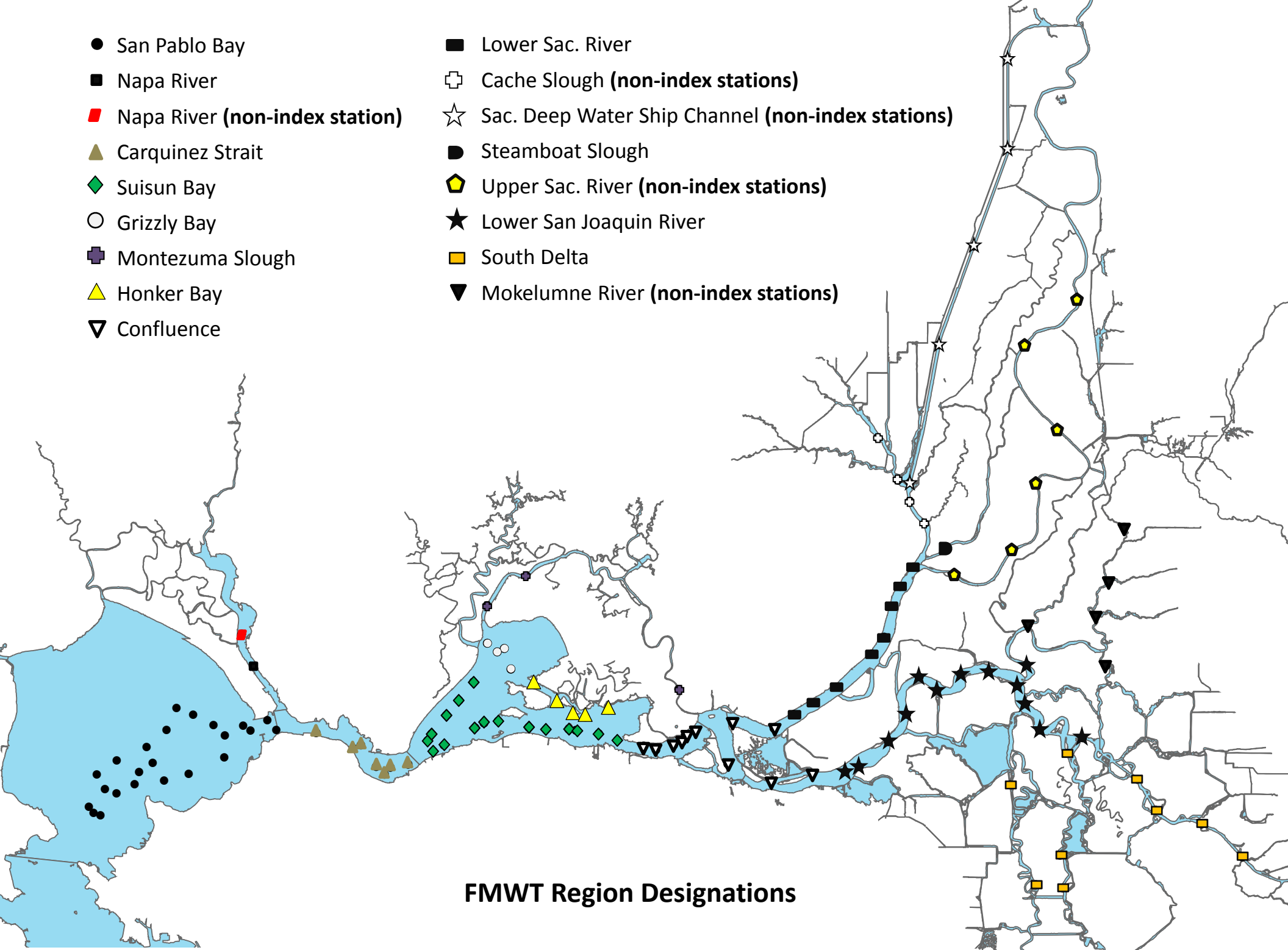

Figure 1. Fall Midwater Trawl sampling stations as of 2013.

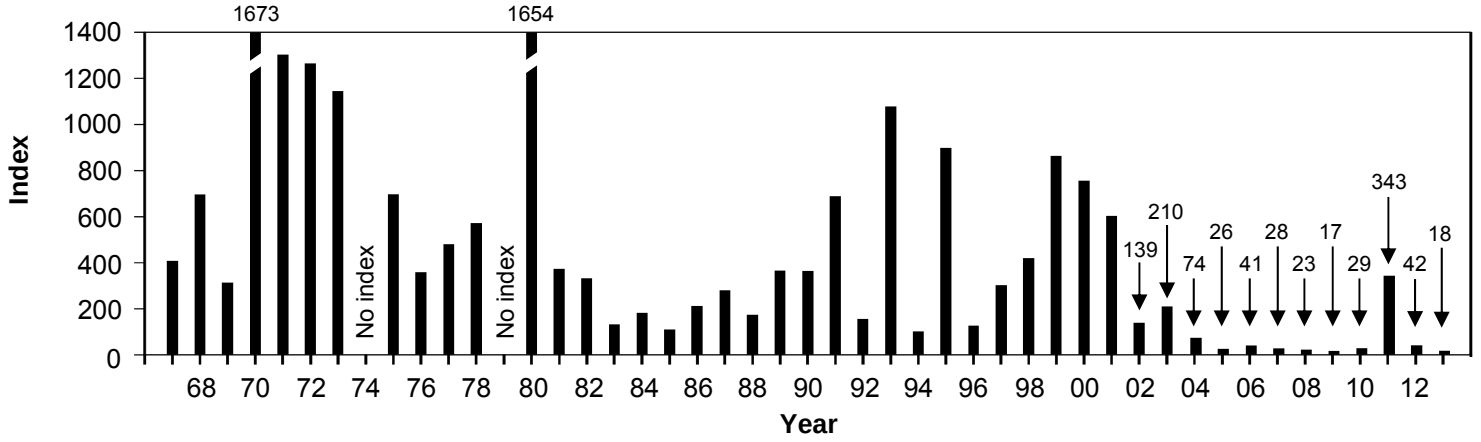

Figure 2. Delta Smelt FMWT annual abundance indices, 1967-2013.

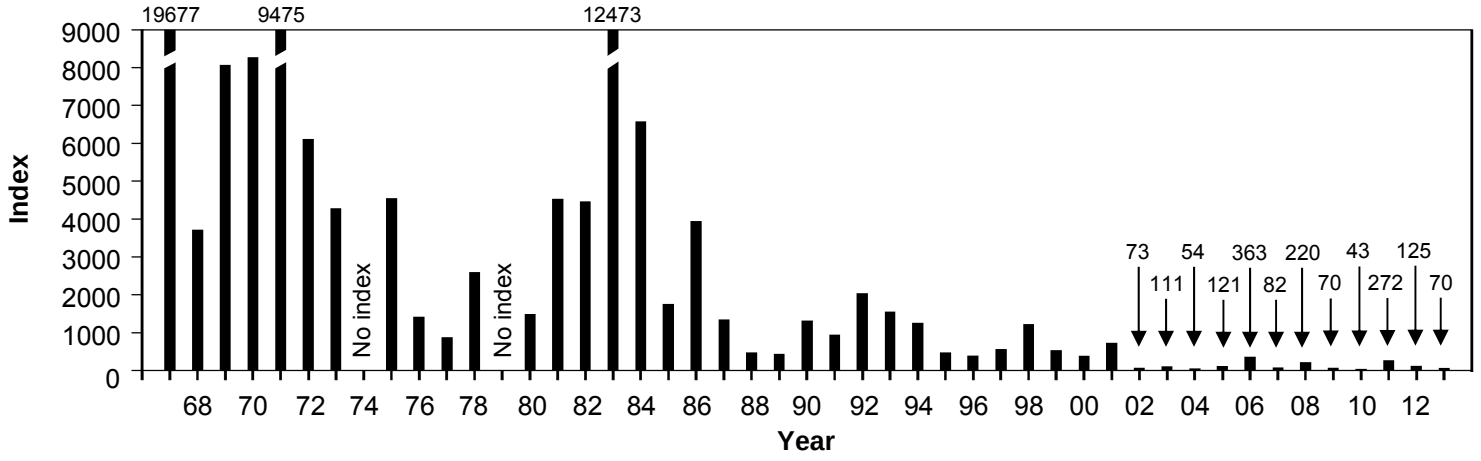

Figure 3. Age-0 Striped Bass FMWT annual abundance indices, 1967-2013.

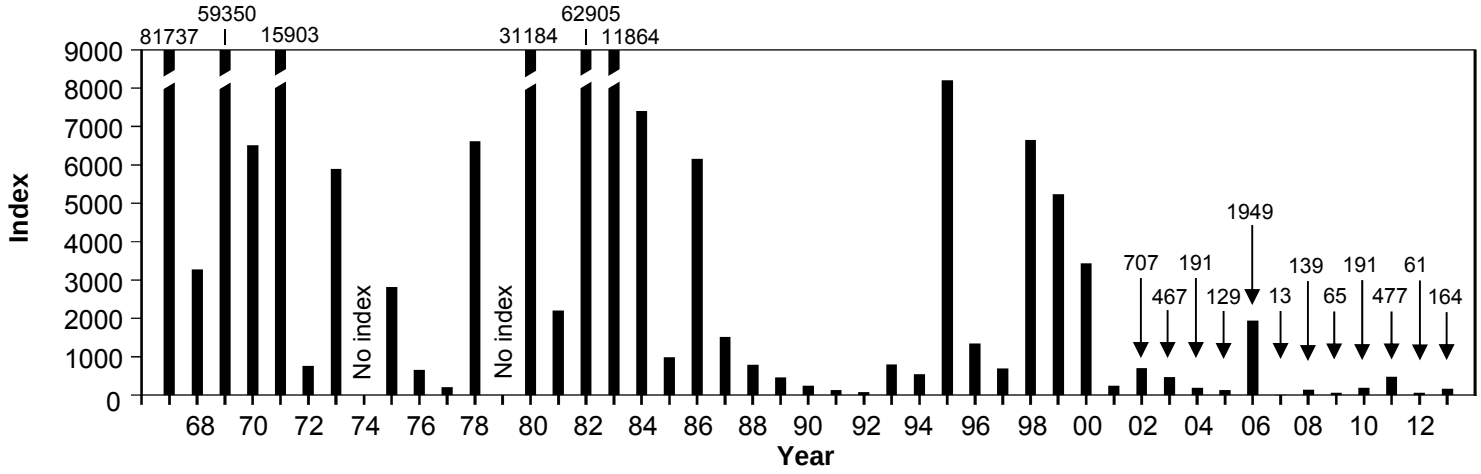

Figure 4. Longfin Smelt FMWT annual abundance indices, 1967-2013.

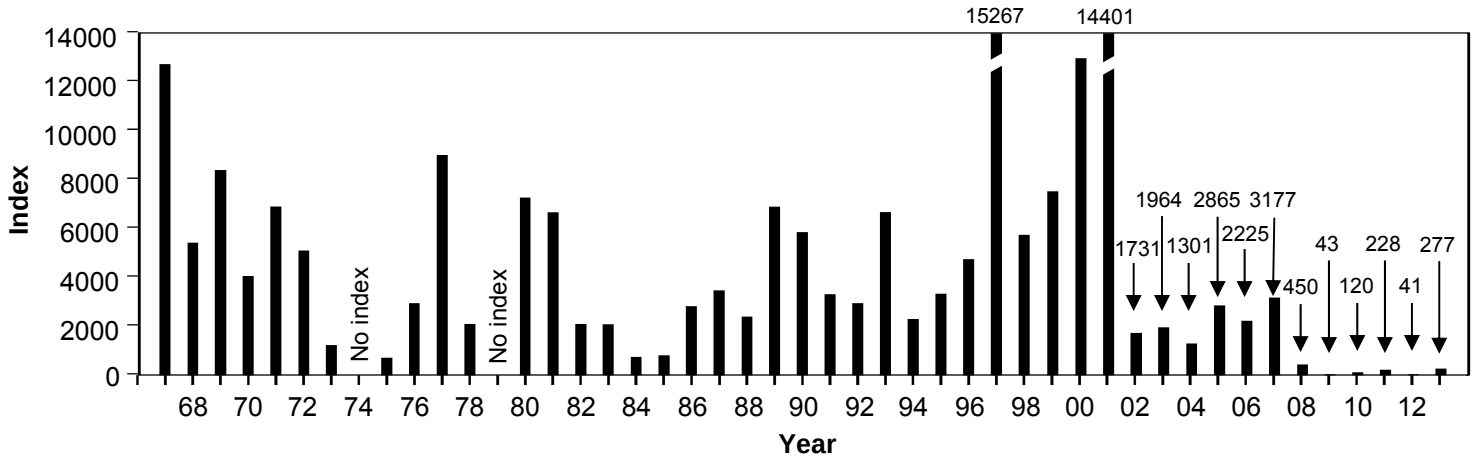

Figure 5. Threadfin Shad FMWT annual abundance indices, 1967-2013.

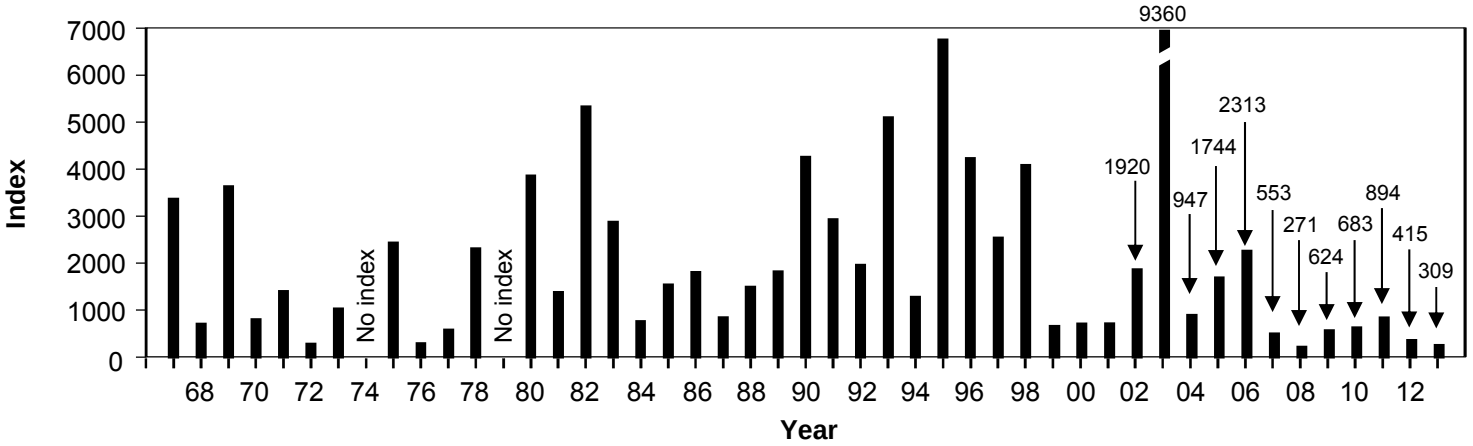

Figure 6. American Shad FMWT annual abundance indices, 1967-2013.