

IEP Science Highlights

Quarterly Directors Update

December 20, 2011

Fall Monitoring Results

Fish:

- The Fall Midwater Trawl (FMWT) survey is scheduled to be completed near December 16, 2011. Partial FMWT indices (September-November) for delta smelt, longfin smelt, and young striped bass were higher in 2011 than in 2010, but remain low compared to historical indices before 2000. The summed September-November indices are:
 - Delta smelt: 127 - highest index since 2003. Twenty-two additional delta smelt were collected at non-index stations in Cache Slough and the Sacramento Deep Water Ship Channel (SDWSC).
 - Longfin smelt: 176 - highest index since 2006
 - Age-0 striped bass: 204 - highest index since 2006
 - Threadfin shad: 139 - third lowest in FMWT history. An additional 2200 threadfin shad were collected at the non-index stations in Cache Slough and the SDWSC.
- The Smelt Larvae and Spring Kodiak Trawls Surveys are scheduled to begin on January 9, 2012. They are designed to provide near real-time distribution data for longfin smelt and delta smelt to agency managers to assess vulnerability of larvae and adults to entrainment in south Delta export pumps.

Phytoplankton:

- Multiple surveys observed an October-November phytoplankton bloom that extended from the Sacramento River at Rio Vista into Suisun Bay. Fall phytoplankton blooms have not been observed in this region since 1984.

Outflow and Salinity:

- The September-November Net Delta Outflow Index averaged approximately 11,000 cfs with highest outflows in early October (max. 21,000 cfs) and lowest outflows in early November (min. 4000 cfs).
- Low-salinity habitat was primarily located in Suisun and Honker Bays in September and October and moved upstream in November.

2011 IEP Publications

- IEP scientists produced 19 peer-reviewed publications in 2011. An additional 15 papers have been submitted to journals. Conclusions from recently published papers include:
 - Part, but not all of the observed decline in age-0 striped bass has been due to a distribution shift away from the channels, possibly because of reduced food availability (Sommer et al, Transactions AFS)
 - Climate change may have highly relevant ecological effects on the estuary, including increasing water temperatures, salinity and sea level, decreasing turbidity, and more frequent extreme environmental conditions (Cloern et al, PLoS One).
 - Additional island flooding in the interior Delta will likely not support many native fishes (Grimaldo et al, SFEWS).

2012 Science Events and Activities

- Programmatic review of the Delta Juvenile Fishes Monitoring Program (DJFMP) and the Delta Juvenile Salmon Survival Studies (DJSSS)
- Salmonid Restoration Conference: April 4-7, Davis, CA
- IEP Workshop: April 18-20, Lake Natoma Inn, Folsom, CA. April 18 is a joint meeting day with the California Water and Environmental Modeling Forum (CWEMF). CWEMF is meeting in the same location April 16-18.
- Delta Science Conference: October 16-18, Sacramento Convention Center.