



# IEP Science Highlights

## Directors Update

December 2014

### Monitoring Highlights

- **Delta Smelt:** The mid-term 2014 Fall Midwater Trawl (FMWT) survey **Delta Smelt** abundance index for September-October is *0.5*, making it the third lowest on record. These indices represent the first 2 of the 4 planned monthly survey indices (September through December) that comprise the annual FMWT indices.
- **Other Pelagic Fishes:** The mid-term 2014 FMWT indices for other pelagic fishes are similarly low. The September-October indices include: age-0 **Striped Bass** *10* (lowest on record); **Longfin Smelt** *9* (3<sup>rd</sup> lowest); and **Threadfin Shad** *19* (3<sup>rd</sup> lowest).
- **Salmonids:** Early WY 2015 monitoring suggests very low survival (<10%; long term average ~25%) of Winter Run Chinook salmon upstream of Red Bluff Diversion Dam. A large pulse of these fish were observed in late October with very few fish observed since then, suggesting very low overall abundance.

### Drought Management Analysis and Synthesis Team (MAST)

- The IEP and additional DFW staff have used the Delta Smelt MAST conceptual model to develop predictions for the response of the species and its habitat to current drought conditions.
- The effort is based primarily on analysis of ongoing monitoring studies.
- Department of Fish and Wildlife drought funds will cover key additional work on aquatic weeds, Delta Smelt growth & condition, and *Microcystis*.
- IEP also conducted a short fall 2014 survey to determine whether inshore predators such as largemouth bass have declined as a result of salinity intrusion.
- The proposed timeline is as follows:
  - Preliminary report examining recent responses (January 2014).
  - Major presentation at the 2015 IEP Annual Workshop (March 2015).
  - Final report (October 2015).

### Winter Run Chinook Salmon Drought Assessment Report

- The RTDOT initiated a review of last year's freshwater and estuarine monitoring results for the 2013 brood of Winter Run Chinook salmon.
- The effort is based on evaluating predictions that were developed in the WY 2014 Drought Operation Plan & by the interagency team reviewing the data.
- It is uncertain if a similar exercise will be initiated for WY 2015.
- The proposed timeline is as follows:
  - Final Report on WY2014 (December 2014)
  - Major presentation at the 2015 IEP Annual Workshop (March 2015)

## The Interagency Ecological Program for the San Francisco Estuary



**Workshops and Work Teams** (see <http://www.water.ca.gov/iep/activities/calendar.cfm>)

Delta Science Program and the UC Davis Center for Aquatic Biology & Aquaculture (CABA).

- IEP Yolo Bypass studies were featured at a December 9, 2012 symposium, “Meeting Nature Halfway on a Floodway - The Yolo Bypass as a Reconciled Ecosystem.”

### **Bay-Delta Science Conference 2014**

- Former IEP Lead Scientist Dr. Anke Mueller-Solger received the Brown-Nichols Award in recognition of her efforts to promote applied science in the Estuary.
- A few conference highlights included:
  - Delta Smelt: IEP-funded otolith analyses suggest that Delta Smelt have been spawning progressively earlier since 1999, possibly a result of climate effects. Also, a new study proposes that the fall habitat of this species is better quantified by all areas in the 0-6 ppt region, not just the Low Salinity Zone (1-6 ppt).
  - Chinook Salmon: Catfish appear to be a much more important predator of juvenile salmon than previously understood.
  - Nutrients: While high ammonium levels continue to be a concern along the Sacramento River, several IEP talks noted that there is evidence of nitrogen limitation in the North Delta, a key focus of current restoration efforts.