Interagency Ecological Program for the San Francisco Estuary
Cooperative Ecological Investigations since 1970

IEP Science Highlights

Quarterly Directors Update

September 2013

Monitoring Highlights

- Pelagic fish abundance indices: In 2013, the "spring kodiak trawl" ***adult Delta Smelt*** abundance index (21.0) was lower than in 2012 (147.3) and similar to 2011 (20.0). The "20 mm" ***larval Delta Smelt*** index (7.8) was also lower than in 2012 (11.1) and similar to 2011 (8.0), while the summer "townet" ***juvenile Delta Smelt*** index (0.7) was lower than in the previous two years (2012: 0.9; 2011: 2.2) and similar to 2010 (0.8). The summer "townet" ***juvenile Striped Bass*** abundance index (0.6) was lower in 2013 than in the previous three years (2012: 1.7; 2011: 2.6; 2010: 1.5), and similar to 2009 (0.8). The low and declining 2013 indices indicate that the "POD regime" continues.
- Pelagic fish monitoring methods: The first "SmeltCam" paper was published by Feyrer et al. in the scientific journal PLOS ONE in July 2013. This IEP study was conducted by scientists from BOR, Sureworks LLC, FWS, DFW, DWR, and CCWD and was funded by BOR, DWR, DFW, and SFCWA. The authors reported that the SmeltCam worked well up to about 80 NTU turbidity, lowered Delta Smelt mortality by 72% compared to traditional nets, and showed that Delta Smelt were relatively abundant throughout the water column during flood tides, but during ebb tides they occurred only in the lower half and sides of the water column in the lower Sacramento River study area.
- Adult salmon returns**:** In 2012, 283,871 ***adult Fall Chinook Salmon*** returned from the ocean to the Sacramento River basin for spawning, an increase from the low returns in 2007-2011. In 2013, Fall Chinook returns promise to be high again. The 2013 ***adult Winter Chinook Salmon*** return estimate has not been finalized, but will likely be >3000 and the highest since 2006. Recent observations and rescue efforts in the Colusa Basin showed, however, that a substantial number of Winter Chinook strayed this year into the Basin where there is no suitable spawning habitat.
- Juvenile salmon: Using genetic sampling and new trawl efficiency estimates, new reports (Pyper et al., DSP funding) indicate that 45,000 – 63,000 ***juvenile Winter Chinook Salmon*** migrated to the ocean in 2008-11. In its recent review of the Delta Juvenile Fishes Monitoring Program (DJFMP), the IEP Science Advisory Group (SAG) made recommendations about how to improve these and other estimates relevant for understanding how the Bay-Delta functions to support aquatic resources. IEP staff is working on a response and implementation plan.

From Monitoring to Adaptive Management: Collaborative Teams and Events

- The IEP Management, Analysis, and Synthesis Team (MAST) released a draft report on Delta Smelt on 6/22 for management, public, and independent technical review and discussed in a special stakeholder meeting on 9/11. A revised report is expected later this year.
- The 2013 MAST report synthesizes available information into an integrated conceptual model for Delta Smelt that is intended to inform year-round Adaptive Management (AM) of Delta Smelt, e.g. as envisioned by the new "Collaborative AM Team" (CAMT).
- The 2013 MAST report may also provide the basis for work by potential new IEP Project Work Teams (PWTs) associated with existing and planned AM efforts. IEP PWTs are collaborative science teams that are open to the public, see http://www.water.ca.gov/iep/activities/calendar.cfm.
- Results of work by IEP teams and others will be publicly presented and discussed at a special "Biomarker Workshop" organized with ERP, DSP, and SFCWA (10/24-25, UCD), the State of the Estuary conference (10/29-30, Oakland) and the 2014 IEP Annual Workshop planned for 2/24-26/2014 (Lake Natoma Inn, Folsom) in collaboration with CWEMF (2/26-28/2014, same location).