



## IEP Science Highlights

### Director's Meeting Update

June 2016

#### Monitoring Highlights

- Delta Smelt: The 2016 SKT survey **Delta Smelt** abundance index will soon be finalized, but is expected to be the lowest on record. Initial results from the spring 20 mm Survey for larval Smelt suggest a broader distribution than in 2015, but overall densities remain extremely low.
- Salmon: 2015 Juvenile **Winter Run** emigration estimate was 339,000 fish, the lowest estimate on record.
- Splittail: Initial results from Yolo Bypass and Delta channel sampling suggest that wet 2016 spring conditions substantially improved juvenile production.

#### IEP Annual Meeting Highlights

- Emergency Drought Barrier (EDB): A full session was dedicated to summarizing lessons learned from the 2016 EDB. The hydrodynamic effects were mostly as expected. Food web responses are still being evaluated, but no barrier-related shifts were immediately obvious.
- Gear Evaluations: This session highlighted the substantial work evaluating different sampling approaches. For example, an evaluation of the 20 mm survey suggested that it is fairly good at sampling pelagic fishes such as Delta Smelt.
- Stress Physiology: Several presentations described how laboratory studies can be used to identify stress to populations. For example, there was evidence that Splittail populations have different salinity tolerances, but selenium can cause major defects in their young.
- Smelts: Although both Delta and Longfin Smelt are doing poorly in many regions, results from lower Yolo Bypass suggests that Delta Smelt use of this area is increasing, with relatively fast growth rates. Both Delta and Longfin Smelt appear to have increasingly early hatching windows, due to warmer winter-spring temperatures.
- Salmon: New otolith chemistry methods allow researchers to examine the rearing history of Salmon collected as adults. Although Winter Run is native to the Sacramento River, otolith analyses revealed that there is substantial rearing in other tributaries such as the America River.

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

- The Drought MAST Team has completed its major product, a manuscript analyzing the ecological effects of the recent drought. The article is in final internal review before being submitted for publication in a peer-reviewed journal.
- The Salmon/Sturgeon Assessment of Indicators by Life Stage (SAIL) have also completed draft manuscripts which are in final internal review that describe key recommendations for improved monitoring networks.
- Several topics are being considered for 2017 synthesis efforts including aquatic weeds, ecosystem resilience to drought, Longfin Smelt, and Chinook Salmon.

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

- Several IEP staff gave presentations at a March 2016 UCD workshop on the risk of extinction to Smelts. <http://cmsi.ucdavis.edu/events/smelt-longfin/index.html>
- The Bay-Delta Science Conference is scheduled for November 2016.