**Tracy Research Technical Report Abstract**

* ***Technical Bulletin 2014-2***
Zachary A. Sutphin. 2014. *Effects of Removing Primary Channel Adult Striped bass on Delta Smelt Salvage Efficiency.* August 2014. 29 pp.

The Bureau of Reclamation’s Tracy Fish Collection Facility (TFCF) operates to isolate (salvage) fish from water destined for the Bill Jones Pumping Plant, thereby reducing entrainment loss and mortality. Of particular concern, to regional biologists and managers, are the effects of TFCF operations on health and survival of delta smelt (Hypomesus transpacificus), a species listed as endangered under the California Endangered Species Act in 2010. Loss of fish as a result of predation, throughout multiple components of the TFCF, is one of the many factors that may have a negative effect on TFCF fish salvage efficiency. Removal of piscivorous fish is regularly completed in the TFCF secondary channel, because it can be dewatered and is easily accessed. Though there are current methods being evaluated to remove piscivores from the TFCF primary channel, a safe and efficient method that contributes to increased salvage efficiency of fish has yet to be implemented regularly. In 2007, small-scale piscivore removal efforts, using a gill net to sample ~25-35% of the TFCF primary channel were attempted. Across twelve net sets, totaling 76 min of fishing, 35 adult striped bass (mean FL = 60.3 cm) were removed from the primary channel. Before and after piscivore removal delta smelt facility efficiency mark-capture experiments indicate the piscivore removal effort had no significant effect on whole facility, primary louver, or secondary louver efficiency. Other similar research efforts conducted at the TFCF indicate removal of predators from the primary channel does result in increased facility efficiency. It is likely the lacking impact piscivore removal efforts had in the current study is a result of the inability to ensure the majority of piscivores were removed, combined with elevated facility water velocities that may have promoted rapid movement of fish through the facility.