**Tracy Research Technical Report Abstract**

* ***Hydraulic Lab TM PAP-1035***  
  Mortensen, Joshua D. 2011. *Concept Level Design of a Fish-Friendly Pump System. Tracy Fish Collection Facility*. Hydraulic Laboratory Technical Memorandum PAP-1035. U.S. Bureau of Reclamation, Denver Technical Service Center. Hydraulic Investigations and Laboratory Services Group. 34 pp.

Newer methods of operation are needed at the Tracy Fish Collection Facility to meet fish salvage criteria. The existing facility is no longer capable of meeting hydraulic design criteria due to adverse flow conditions and water levels in the primary channel (primary). The secondary channel (secondary) depends on energy head (difference in water surface elevations) from the primary channel to drive the bypass flows necessary for optimum fish salvage. Current performance of the secondary suffers due to frequent periods of low water levels in the primary channel. WEMCO-Hydrostal fish-friendly pumps were investigated as a method to produce additional head needed during periods of low water levels to allow the secondary to meet performance standards. Various fish pump system designs were considered, focusing on hydraulic criteria and space limitations at the facility. One concept level design was determined to be feasible and is recommended for further investigation and design.