Tracy Research Technical Report Abstract

***Volume 53***
Jarod D. Hutcherson, Michael J. Horn, and René C. Reyes. 2015. Larval Fish Distribution through the Primary Channel of the Tracy Fish Collection Facility: Spatial and Temporal Patterns of Distribution and Abundance. Tracy Fish Collection Facility Studies. Volume 53. U.S. Bureau of Reclamation, Mid-Pacific Region and Denver Technical Service Center. 47 pp.

Historical fish salvage operations at the Tracy Fish Collection Facility have not typically emphasized larval fish entrainment.  From April–July 2010, larval fish entrainment through the primary channel of the Tracy Fish Collection Facility was examined to determine spatial and temporal patterns of larval fish entering the channel, and to quantify larval fish entrainment into the Delta Mendota Canal during this period.  Entrainment nets, placed in a 3×3 array (vertical × horizontal positions) in the primary channel, were used to capture incoming larval fish.  Sampling occurred over ten 24-hour periods over the study.  Sampling position, vertically and horizontally had a significant effect on larval fish catch per unit effort.  Catch per unit effort was also significantly higher during night, compared to day collection periods.  Using four representative species, spatial and temporal analyses suggest species-specific dependencies.  No significant effect was determined for river stage or tidal fluctuations across fish species.  Total estimated entrainment at the facility exhibited a logarithmic increase over the study.  However, collinearity among variables precluded determining which (date, temperature, or discharge) were the primary contributors to this trend.  Daily entrainment mid-May was estimated ~40,000 larval fish daily and increased to ~4.7 million larval fish on July 1, 2010.