**Tracy Research Technical Report Abstract**

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Sutphin, Zak A., and Brent B. Bridges. 2008. *Increasing Juvenile Fish Capture Efficiency at the Tracy Fish Collection Facility: An Analysis of Increased Bypass Ratios During Low Primary Velocities*. Tracy Fish Collection Facility Studies, Volume 35. U.S. Bureau of Reclamation, Mid Pacific Region and Denver Technical Service Center. 38 pp.

The Tracy Fish Collection Facility (TFCF), located in the southern portion of the California Sacramento-San Joaquin Delta, is a behavioral screening facility intended to divert and salvage fish prior to encountering the Bill Jones Pumping Plant (BJPP). During routine operation, the BJPP in conjunction with the California State’s Harvey O. Banks Pumping Facilities, alter southern delta water flows and attract juvenile fish intending to migrate to the ocean. To combat this potential problem, the California State Water Resources Control Board initiated the Vernalis Adaptive Management Program in 2000, which experiments with reduced water exports during critical down-stream migrations of juvenile Chinook salmon (*Oncorhynchus tshawytscha*). Reduced exports from the BJPP result in low primary velocities at the TFCF, which in-turn create water hydraulics outside of operational criteria. It was determined during times of low primary velocities, by increasing the primary bypass ratio, secondary channel velocity criteria (3.0–3.5 ft/s, 0.9–1.1 m/s) and secondary bypass ratio criteria (> 1.0) could be achieved. In addition, the largest primary bypass ratios tested provided the highest recovery rate of juvenile Chinook salmon and Sacramento splittail (*Pogonichthys macrolepidotus*).