Tracy Research Technical Report Abstract

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Karp, C., L. Hess, J. Lyons, and C. Liston, 1997. *Evaluation of the Subsampling Procedure to Estimate Fish Salvage at the Tracy Fish Collection Facility, Tracy, California.* 1993-1996. November 1997. Tracy Fish Collection Facility Studies, Volume 8, U. S. Bureau of Reclamation, Mid-Pacific Region and Denver Technical Service Center. 23 pp.

The Bureau of Reclamation's Tracy Fish Collection Facility was constructed in the mid-1950s to divert fish from exported Central Valley Project flows. Numbers of fish diverted and collected are estimated 12 times daily (every 2 hours) as they enter a holding tank. This subsampling procedure has been in operation since 1993. Prior to that, a single day and single night subsample were used in the expansion of the daily salvage estimate. In this study, we evaluated the relationship between the 12 subsamples and the actual holding tank collection under a variety of flow, debris, tide, time of year, and time of day conditions. From 1993 to 1996, we collected 210 pairs of entrainment data (i.e., the 110-minute salvage and the following 10-minute salvage subsample). Nonparametric correlation analyses of the entrainment rates (i.e., the number of fish/minute entrained in the collection tank) suggest that the current subsampling operation effectively estimates fish salvage and debris load. The correlation between the subsample and actual collection was highest for species that are more abundant. Size comparisons for striped bass (Morone saxitilis) and white catfish (Ictalurus catus) indicate that larger fish are less prevalent in the 10-minute subsample than the 110-minute collection. We believe that the current system, which counts 8 percent of the daily entrainment, is adequate and that efforts be made to improve the handling and holding components of the overall operation.