Tracy Research Technical Report Abstract

Tracy Series Volume 57

Hammen, Jeremy J., Clarence D. Fullard, Zachary A. Sutphin, Brandon J. Wu,
René C. Reyes, Christopher L. Hart, Michele N. Johnson, Javier B. Miranda,
Thomas V. Agosta, Mark D. Bowen, and Kenneth M. Cash. 2021. *Fish Release Site Predation Monitoring*. Tracy Fish Collection Facility Studies, Tracy Series Volume 57. Bureau of Reclamation, California-Great Basin Region, 57 pp.

In 2019, the Bureau of Reclamation and California Department of Water Resources conducted a study designed to determine relative predation rates that occurred at Federal and State Sacramento-San Joaquin River Delta fish release sites and what factors contributed to this relative predation rate. Modified tethers with hook timers were baited with Golden Shiners (*Notemigonus crysoleucas*) at a fixed release site and two control sites in the Sacramento-San Joaquin River Delta, California to monitoring predation rates. Modified fish releases were conducted throughout summer and several factors (i.e., predation time, amount of sunlight, water depth, etc.) were analyzed to determine what factors may influence predation rates. Altering the frequency from the standard salvage release every day to every fifth day did not reduce relative predation rates. Exploratory data analysis did find diurnal period and water depth appeared to have the largest influence on relative predation rates at the release site. Predation rates may be decreased at release sites by altering the fish release schedule to crepuscular periods and ensuring deep water releases. These results will help managers better understand relative predation rates at release sites. Further investigation into potential management actions may be needed if predation reduction efforts at release sites do not meet management goals.