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Zachary A. Sutphin, Rene C. Reyes, and Brandon J. Wu. 2014. Predatory Fishes in the Tracy Fish Collection Facility Secondary System: An Analysis of Density, Distribution, Re-colonization Rates, and Impact on Salvageable Fishes. 69 pp.

A multi-year study was completed to quantify monthly species-specific biomass of predatory fishes in the Tracy Fish Collection Facility (TFCF) secondary channel, as well as bypass tubes that lead from the TFCF primary channel to secondary channel. This data was used, along with TFCF fish salvage data, to develop a bioenergetics model to predict the effects of predators on salvageable fish. Additional data was collected to supplement information collected on the effects of multiple consecutive predator removals in a single day and re-colonization rates of predators in the secondary channel. Results suggest predators are typically distributed evenly amongst all secondary channel components, and their biomass in the secondary channel is above what is typically observed in natural settings. Predators re-colonized the secondary channel within seven days, and, typically, more than one removal effort was necessary to assure the majority of predators were removed. The bioenergetics model indicates predators may have consumed nearly 14,000 fish over the modeled year. However, predator consumption would have been < 0.2 percent of total salvageable fish at the TFCF.