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The objectives of this study were to (1) describe the fish population passing through the secondary louvers and into the holding tanks at the Tracy Fish Collection Facility (TFCF) and (2) analyze secondary louver efficiency with respect to environmental and operational parameters. We deployed a sieve net in the secondary channel behind the second louver array and collected 254 simultaneous sieve net and holding tank samples between October 1993 and September 1995. To achieve our first goal, we characterized the species composition and size of fish passing through the secondary louvers. Splittail was the numeric dominant in the sieve net and holding tank collections. Most observations (79 percent) were made in 1995, a wet year. Therefore, we hypothesized splittail dominance was the result of a strong spawn, and entrainment of many young-of-year fish [Mean TL = 31 mm (1.2 in)] to the TFCF. Our second goal was to analyze secondary louver efficiency. We defined secondary louver efficiency as the percentage of fish directed into the holding tanks compared to the number of fish entering the secondary channel. We concentrated our analysis of secondary louver efficiency on three independent variables, secondary approach velocity index, debris load, and time of day. Neither secondary approach velocity index nor debris load appeared to have any statistically significant influence on secondary louver efficiency. However, the time of day had a statistically significant impact on secondary louver efficiency in two cases. First, for all species combined, logistic regression showed the time of day was positively correlated with efficiency (Daylight Mean Efficiency = 81 percent, Night = 67 percent ). Second, for American shad, the time of day was negatively correlated with efficiency (Daylight Mean = 39 percent, Night = 83 percent). We concluded that future research should continue to focus on time of day as a factor influencing secondary louver efficiency. In addition, we identified opportunities to improve fisheries protection at the TFCF. For example, in the high water year of 1995, we obtained 99.9 percent of 18,371 splittail between May 11 and July 13. Given this contracted period of vulnerability, approach velocity could be manipulated in the secondary louver channel to improve splittail louver efficiency while we continue to meet all water and fish agreement obligations.