



April 19 through May 9, 2004

Chinook Outmigration

The traps fished daily between April 19 and May 9 and captured a total of 286 Chinook salmon, increasing the season total to 476. Daily catch ranged between 1 and 42 Chinook ($\mu=14$; Figure 1). Individual forklengths ranged from 37 mm to 110 mm (Figure 2), and daily mean length generally ranged from approximately 80 mm to 84 mm.

Although the traps were cleared of debris and processed twice per day, one of the traps was often stopped by debris when flows were high (April 13 to April 22). This is expected to have minimal effect on the data because many of the stoppages occurred during the day when relatively few Chinook are captured (i.e., < 5% of daily catches) and at least one trap fished throughout the night on all but two nights.



Debris accumulated in the livebox overnight during the high flow period.

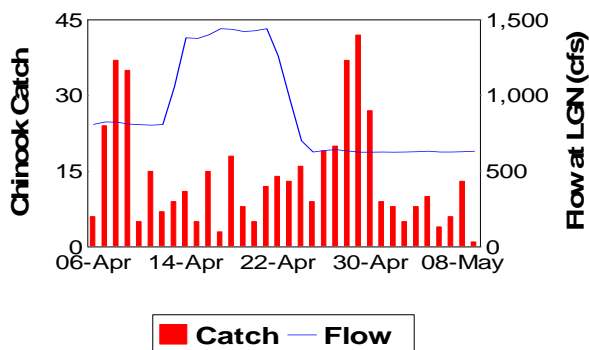


Figure 1. Daily Chinook catch and Tuolumne River flow at La Grange (LGN).

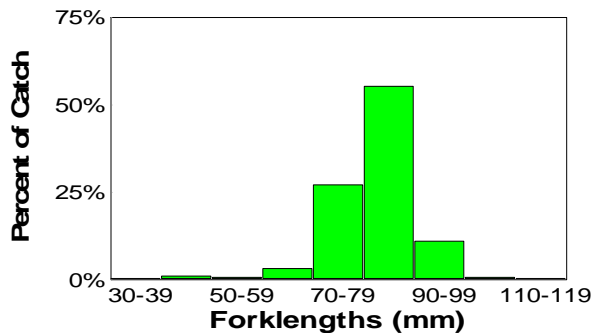


Figure 2. Length frequency of Chinook salmon captured at Grayson from April 19 through May 9.

Flow at La Grange was gradually reduced from 1,440 cfs to 630 cfs between April 21 and April 25. Five days after releases from La Grange were reduced, we observed a slight increase in catch over a three-day period (April 28 to April 30). Preliminary estimates of daily passage indicate that the increase in migration activity was real and not an artifact of differences in trap efficiency at the different flows.

No trout were captured during the sampling period.

Three trap efficiency releases were conducted during the sampling period. The first release was conducted on April 20 at a flow of 1,428 cfs at La Grange and consisted of 1,980 Merced River Hatchery fish marked anal fin green. Trap efficiency was estimated to be 2.4%. Mean length at release was 81.2 mm and 80.6 mm at recovery.

The second release was conducted on April 27 and consisted of 1,941 Merced River hatchery fish marked top caudal fin green. Flow at La Grange was 643 cfs during this evaluation and trap efficiency was estimated to be 5.7%. Mean length at release was 85.7 mm and 85.1 mm at recovery.



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Chinook Outmigration (cont.)

The third release was conducted on May 4 at a flow of 629 cfs at La Grange and consisted of 2,007 Merced River Hatchery fish marked bottom caudal green. Trap efficiency was estimated to be 2.4%. Mean length at release was 87.9 mm and 89.4 mm at recovery.

Environmental Data

Releases from La Grange ranged from 626 cfs to 1,442 cfs between April 19 and May 9. Data is still not available from the Modesto gauge, which has been down since April 5 for relocation.

Turbidity at Grayson varied between 1.7 NTU and 5.3 NTU and instantaneous water temperature fluctuated between 58°F and 69°F during the sampling period.



Technician collecting a water sample from the Tuolumne River.

Non-Salmonid Species Captured

A total of 11 non-salmonid species were captured in the traps during the sampling period including bluegill, channel catfish, golden shiner, inland silverside, lamprey, mosquito fish, red shiner, Sacramento blackfish, and smallmouth bass. Of these, white catfish continued to be the most abundant and most of the individuals captured were 40 to 60 mm.

The second most abundant non-salmonid species was largemouth bass. All largemouth bass captured were young-of-the-year and measured between 18 mm and 72 mm fork-length.



Bluegill captured in the traps.