

Stanislaus River Juvenile Outmigration Summary # 5

February 6 - February 16, 2003

Note: Data is preliminary and subject to revision.

Oakdale:

Between February 6 and February 16 total Chinook catch at Oakdale was 21,687 increasing the season total to 61,248. Daily catch fluctuated between 410 and 3,605 Chinook per day. Total catch for the season is similar to total catch during the same period in 2002, but almost 70,000 fewer than the catch in 2001. In 2001 over 50,000 Chinook were captured in a 24-hour period at Oakdale during a freshet event. Mean length for the period was 36.6 mm forklength, which was a 0.5 mm increase over the previous sampling period. Forklengths ranged between 30 mm and 73 mm. Mean weight increased 0.2 g over the over the 10-day period to 0.5 g. One 291 mm FL trout (SI 5) was captured on February 8 increasing the season total to 11 trout.

Flow at Orange Blossom Bridge (OBB) ranged between 449 cfs and 543 cfs. An obvious discrepancy remains between the Goodwin Dam (GDW) gauge and the OBB gauge, but we will continue to use OBB to compare changes in flow to changes in catch. Releases at GDW increased 100 cfs to 600 cfs on February 4, which would account for the reported increase in discharge at OBB on February 6. However, discharge at OBB increased approximately 80 cfs to 540 cfs on February 13, but discharge at GDW remained stable at 600 cfs for the duration of the sampling period. Turbidity fluctuated between 0.9 NTU and 2.3 NTU, with the peak at 2.3 NTU occurring the same day the flow increased approximately 80 cfs at OBB. The increase in turbidity was most likely due to a rain event, but the increase in flow may have been a re-rating of the gauge. The flow did not decrease after the rain event ended rather it stayed at 540 cfs for the remainder of the sampling period. Temperature ranged between 48 and 51 degrees Fahrenheit during the 10-day period.

Following the 100 cfs increase in flow at GDW, we observed a 4-day period of elevated catch that averaged approximately 3,300 Chinook per day. After the elevation in catch subsided, we began to observe the cyclic pattern that was most noticeable in 2002 where we see an increase in catch that lasts 1-2 days followed by a drastic drop in catch that lasts for 1-2 days.

Eight trap efficiency releases using natural Chinook were conducted between the evenings of February 5 and February 13. One of the releases was conducted using the traditional method where the marked fish were released in the evening and the livebox was checked approximately 1 hour later. The group was marked caudal fin orange (CFO) and consisted of 609 chinook that were released at a flow of 455 cfs. Estimated trap efficiency for the group was 7.72%, which was similar to a previous release conducted this season using the same method. Mean length at release was 36.4 mm and 36.0 mm at recapture. The remaining seven releases were conducted using the new method of release where the marked fish were released in the evening and the livebox was checked the following morning. All of the groups using the new method were marked caudal fin green (CFG) and consisted of 164 to 355 fish that were released at flows ranging between 449 cfs and 592 cfs. The estimated trap efficiency ranged between 0.61% and 3.05%, which were also similar to releases conducted earlier in the season using the same method. Mean length at release was 37.2 mm and mean length at recapture was 36.5 mm. We will continue to release one group marked CFO using the traditional method as well as four daily groups marked CFG as long as catch allows. Additionally, we will be replicating the release groups using hatchery fish this week (February 19-February 22) to determine if there are differences in trap efficiency estimates between natural and hatchery fish. The large group of natural fish will be marked CFO and the large group of hatchery fish will be marked caudal fin magenta (CFM). Both large groups will be mixed together prior to release and

released as one group. The daily groups of natural fish will be marked CFG and the daily groups of hatchery fish will be marked caudal fin blue (CFB). Each morning prior to release, the hatchery and natural daily groups will be mixed together and released as one group. The results will be reported in the next summary.

Caswell:

The Caswell traps sampled continuously between February 6 and February 16 due to fluctuations in trap catches and flow. A total of 623 Chinook were captured during the sampling period increasing the season total to 7,733, which is much greater than the 55 Chinook that were captured during the same period in 2002. The total catch for the entire 2002 season was 3,835, which has already been more than doubled thus far in 2003. Daily catch fluctuated between 9 and 137 Chinook, and forklengths ranged between 28 mm and 63 mm. Mean length for the sampling period was 35.9 mm, which was 1.9 mm greater than the previous period. Mean weight also during the period from 0.2 g to 0.4 g. The first trout of the season was captured on February 14 and was 285 mm FL (SI 5).

Between February 6 and February 16 flow at Ripon (RIP) gradually increased from 501 cfs to 591 cfs with the most noticeable change of 40 cfs occurring on February 7. Turbidity ranged between 1.8 NTU and 4.2 NTU, and temperature fluctuated between 48 and 54 degrees Fahrenheit.

An increase in catch from 43 to 137 Chinook was observed following the 40 cfs increase in flow at RIP. Catch remained elevated for three days following the change in flow and then dropped significantly. We also observed a smaller peak in catch when the turbidity peaked at 4.2 NTU following a rain event on February 13.

Six trap efficiency releases were conducted between the evenings of February 5 and February 12 at Caswell. All of the releases were conducted using the new release method and all groups were marked caudal fin pink (CFP). The release groups consisted of 21 to 119 natural Chinook and were released at flows between 489 cfs and 586 cfs. Estimated trap efficiency ranged between 0.0% and 25.0% and when data were pooled trap efficiency was estimated at 15.44%. Mean length at release was 34.9 mm and 34.5 mm at recapture. Similar to Oakdale, we will be conducting daily releases at Caswell up to four times per week for as long as catch allows. Hatchery groups will also be released this week at Caswell to replicate the releases using hatchery fish. The hatchery fish will be marked CFG and the natural fish will be marked CFP. Each morning prior to release the hatchery and natural groups will be mixed together and released as one group.