

**Caswell Memorial State Park Rotary Screw Traps:  
Preliminary Results**  
Lower Stanislaus River, 2009

The Caswell Memorial State Park (Caswell) rotary screw trap was installed on January 12 and started fishing on January 13; the first trap check was on January 14. Due to low flow and changes to channel conditions at the established site, we relocated the trap ~50m downstream (Figures 1 and 2). This new location is only able to accommodate a single trap, but is positioned in the thalweg and samples >30% flow at <250 cfs as configured.



**Figure 1.** Low flow conditions on January 16, 2008 (left: 292 cfs) and March 6, 2008 (right: 256 cfs) at Caswell.

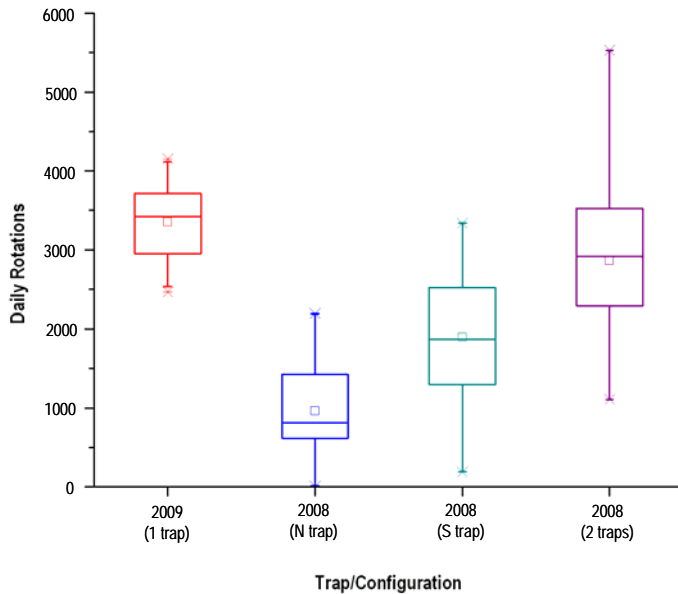


**Figure 2.** Low flow conditions on January 12, 2009 (left: 226 cfs) and February 9, 2009 (right: 226 cfs) at Caswell.

Flow levels were lower on average for the reporting period in 2009 (Table 1). Average daily flows ranged from 206 cfs on February 5 to 312 cfs on February 12, 2009. Despite lower flow conditions in 2009, mean daily trap rotations were significantly greater for this period in 2009 compared to 2008 ( $P < 0.05$ ), even when rotations are combined for both traps in 2008 ( $P = 0.04$ ) (Figure 3; Table 1). As such, we believe we created circumstances that favor improved trap function; in all, the traps actively trapped for 28 days with no stoppages.

**Table 1.** Summary statistics of rotary screw trap function at Caswell compared between 2009 and 200; mean flow with 95% confidence interval.

	2009 (1 trap)	2008 (N trap)	2008 (S trap)	2008 (both traps)
Min	2464	12	190	1108
Max	4150	2193	3336	5529
Mean	3354	964	1900	2864
SD	527	586	746	1085
n	28	19	19	19
# stoppages	0	5	4	9
Mean flow	233 ± 8 cfs		365 ± 50 cfs	



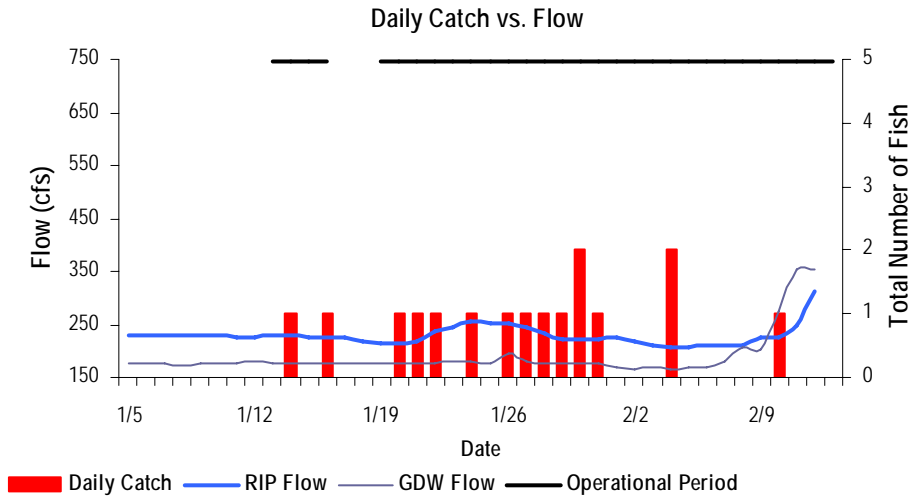
**Figure 3.** Comparison of daily trap rotations for the single trap in 2009 (red), individual traps in 2008 (blue and cyan), and for both traps combined in 2008 (purple) at Caswell.

In all, 16 Chinook salmon fry were captured at Caswell as of February 13, 2009 (Figure 4 and 5; Table 2). Catches are currently too low to conduct efficiency tests. Average fork length (FL) was 38.5 mm for fry; no other life stages were sampled (Figures 6 and 7).

Two *O. mykiss* smolts were also caught during the reporting period (245 mm on January 30 and 221 mm on February 5). Both fish displayed characteristics consistent with steelhead smolts.

All captured salmonids appeared healthy and no mortalities were experienced.

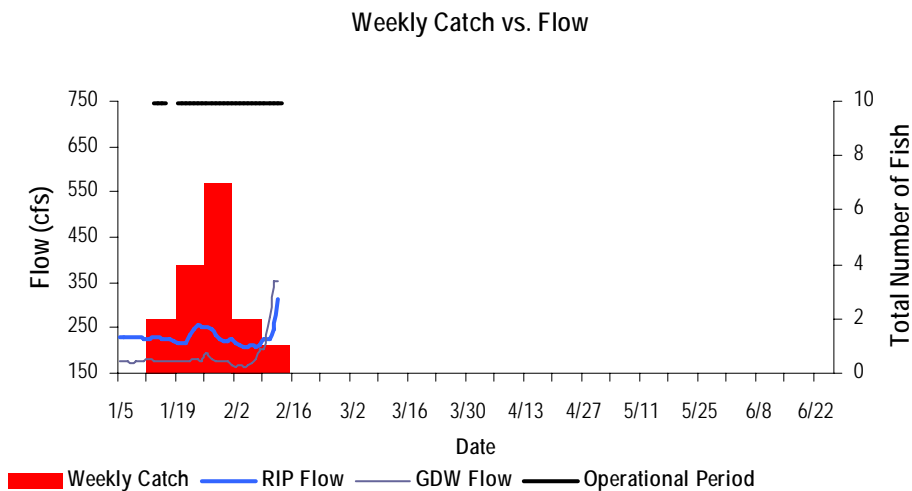
Instantaneous water temperatures recorded at the trap ranged from 8.0 °C to 11.8°C (i.e., 46.4°F to 53.2°F); turbidity ranged from 0.7 NTU to 6.0 NTU.



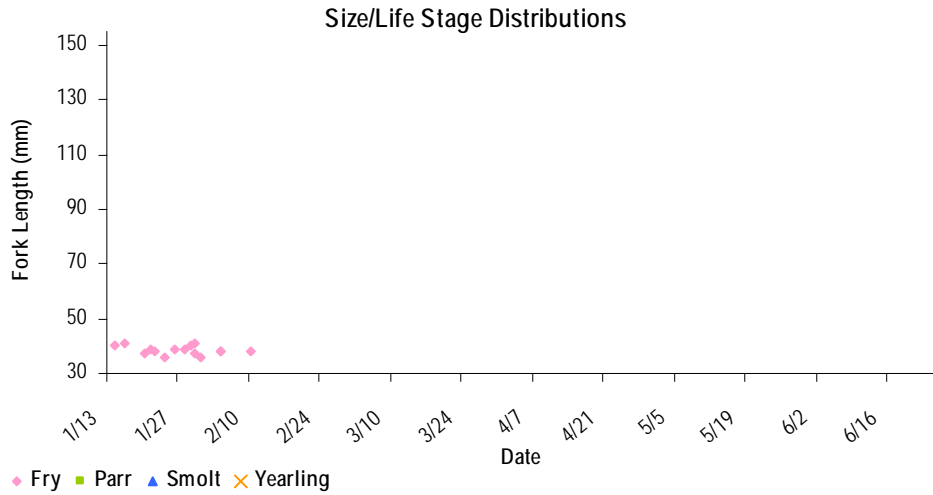
**Figure 4.** Daily Chinook salmon catch at Caswell and flow at Ripon and Goodwin Dam (January 5 – February 13, 2009).

**Table 2.** Weekly Chinook salmon catch summary at Caswell (January 14 – February 13, 2009).

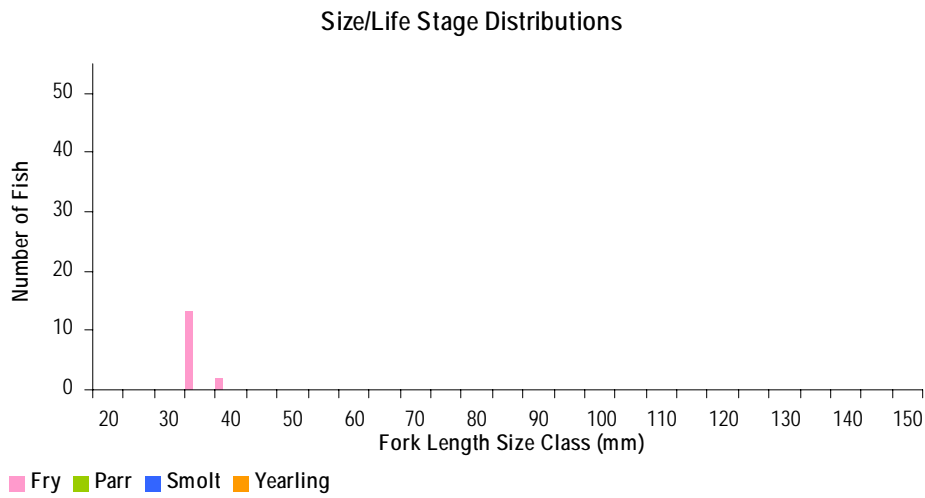
Date	Number of Days	Weekly Catch					Average Length	Average Weight	Average Mortality
		Total	Fry	Parr	Smolt	Yearling			
12-Jan to 18-Jan	3	2	2	0	0	0	40.5	0.6	0.0%
19-Jan to 25-Jan	7	4	4	0	0	0	37.5	0.4	0.0%
26-Jan to 1-Feb	7	7	7	0	0	0	38.7	0.5	0.0%
2-Feb to 8-Feb	7	2	2	0	0	0	38.0	0.4	0.0%
9-Feb to 15-Feb	7	1	1	0	0	0	38.0	0.3	0.0%



**Figure 5.** Weekly Chinook salmon catch at Caswell and flow at Ripon (RIP) and Goodwin Dam (GDW) from January 5 – February 13, 2009.



**Figure 6.** Distribution of size by life stage for Chinook salmon captured at Caswell (January 14 – February 13, 2009).



**Figure 7.** Length-frequency distribution of Chinook salmon captured at Caswell (January 14 – February 13, 2009).

**Disclaimer**

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