

**Caswell Memorial State Park Rotary Screw Traps:  
Preliminary Results  
Lower Stanislaus River  
March 16 – April 19, 2009**

The Caswell Memorial State Park (Caswell) rotary screw trap operated continuously throughout the reporting period; a total of 94 days have been sampled through the season. Flow levels were lower on average for the reporting period in 2009 (Table 1); average daily flows ranged from 220 cfs on March 19 to 965 cfs on April 19, 2009. Instantaneous AM water temperatures recorded at the trap ranged from 12.5°C - 16.1°C (i.e., 54.5°F - 60.1°F) and dissolved oxygen ranged from 8.0 – 10.0 mg/L; turbidity ranged from 1.0 - 5.2 NTU (Table 1). Maximum hourly recorded in-river temperatures at Caswell reached 18.4 °C (65.2 °F) on March 20.

**Table 1.** Summary statistics of environmental conditions at Caswell for the period March 16 – April 19, 2009 flow compared for March 16 – April 19, 2008.

	Ripon Flow (cfs)		AM Temperature (°C)	D.O. (mg/L)	Turbidity (NTU)
	2009	2008			
Min	220	605	12.5	8.0	1.0
Max	965	1438	16.1	10.0	5.2
Mean	456	1171	14.1	9.3	3.4
SD	176	218	0.99	0.6	1.1

In all, 239 juvenile Chinook salmon (i.e., 0 fry, 33 parr, 183 sub-yearling smolts, and 1 yearling smolts; 22 fish plus-counted) were captured at Caswell during the reporting period; total catch for the season to date is 597 juvenile Chinook salmon (Figure 1 and 2; Table 2). For the reporting period, average fork length (FL) was 77.4 mm for parr, 84.6 mm for sub-yearling smolts and 127 mm for yearling smolts (Table 2 and Figure 3).

**Table 2.** Summary of length for different juvenile Chinook salmon life stages captured at Caswell from March 16 - April 19, 2009.

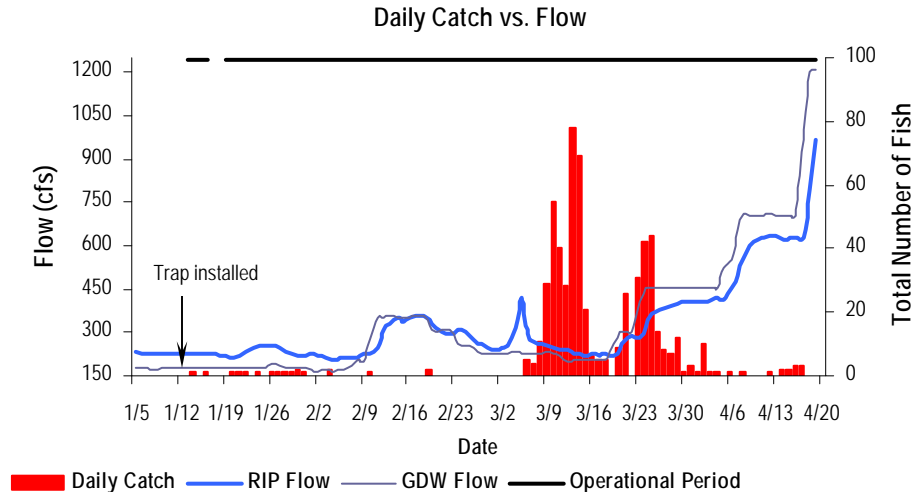
	Fry	Parr	Smolt	
			Sub-yearling	Yearling
Minimum (mm)	-	61	65	127
Maximum (mm)	-	89	101	127
Mean ± 95% C.I. (mm)	-	77.4 ± 2.6	84.6 ± 1.0	-
SD	-	7.6	6.7	-
n	0	33	183	1

We conducted one efficiency test with wild caught fish on March 24; release group size was 41 fish with a corresponding efficiency rate of 14.6% (n = 6 recaptures).

No *O. mykiss* were caught during the reporting period.

Episodic incidents of poor fish condition were observed between March 20 and 29. In all, 22 of 193 (11.4%) captured juvenile Chinook salmon were recorded as mortalities during this period; other affected fish were immediately released alive in an effort to reduce additional adverse effects. Affected fish displayed signs of altered rheotaxis and equilibrium, with a few fish expiring despite healthy colored gills

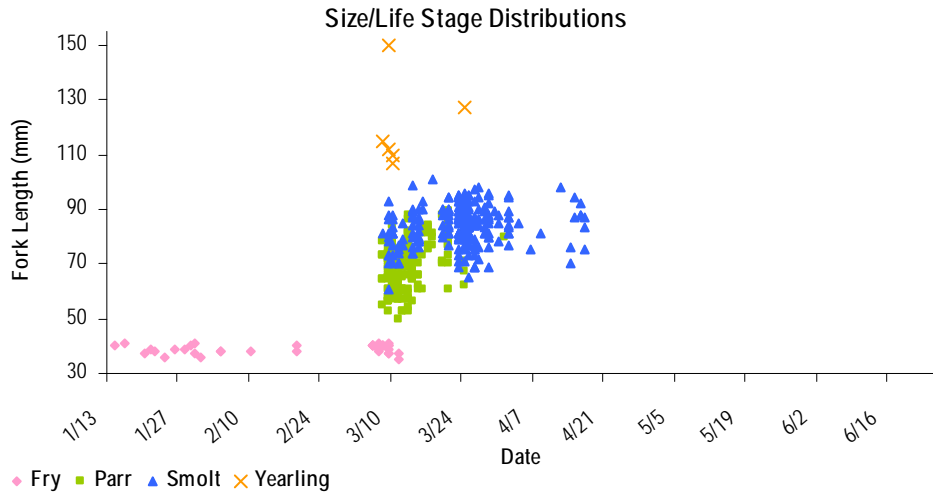
(i.e., deep red) and no visible lesions or other external wounds. Selected specimens were collected for fixation and sent to Scott Foott (USFWS CA-NV Fish Health Center, Anderson, CA) for histological analysis. Results from the Pathology Report (Attachment 1) were inconclusive as no parasites or pathogens were identified and “no definitive diagnosis for morbidity” was determined. Indications of increased urine flow (diuresis), which can occur in elevated ammonia conditions, were noted.



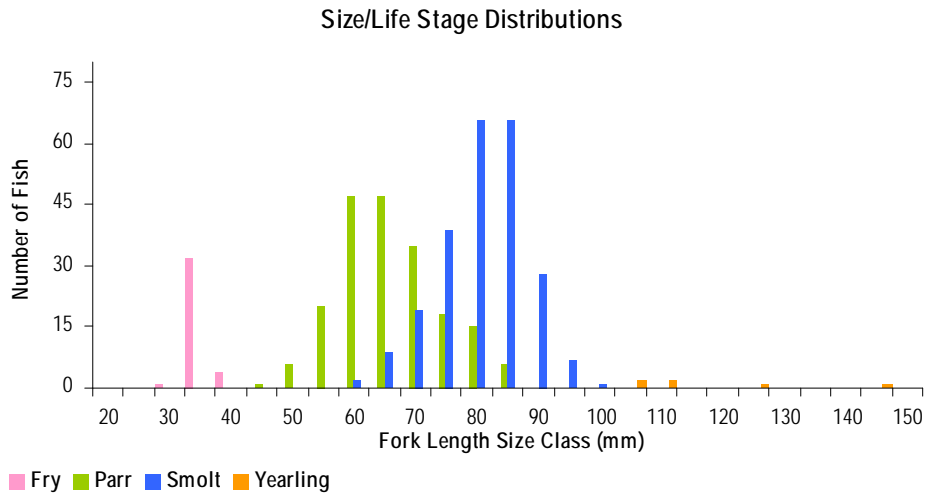
**Figure 5.** Daily Chinook salmon catch at Caswell and flow at Ripon and Goodwin Dam (January 5 – April 19, 2009).

**Table 3.** Weekly Chinook salmon catch summary at Caswell (January 14 – April 19, 2009).

Date	Number of Days	Weekly Catch					Plus Count
		Total	Fry	Parr	Smolt	Yearling	
6-Jan to 12-Jan							
12-Jan to 18-Jan	3	2	2	0	0	0	0
19-Jan to 25-Jan	7	4	4	0	0	0	0
26-Jan to 1-Feb	7	7	6	0	0	0	1
2-Feb to 8-Feb	7	2	2	0	0	0	0
9-Feb to 15-Feb	7	1	1	0	0	0	0
16-Feb to 22-Feb	7	2	2	0	0	0	0
23-Feb to 1-Mar	7	0	0	0	0	0	0
2-Mar to 8-Mar	7	20	12	6	1	1	0
9-Mar to 15-Mar	7	320	8	156	52	4	100
16-Mar to 22-Mar	7	51	0	28	22	0	1
23-Mar to 29-Mar	7	158	0	4	133	1	20
30-Mar to 5-Apr	7	17	0	1	15	0	1
6-Apr to 12-Apr	7	3	0	0	3	0	0
13-Apr to 19-Apr	7	10	0	0	10	0	0
<b>14-Jan to 19-Apr</b>	<b>94</b>	<b>597</b>	<b>37</b>	<b>195</b>	<b>236</b>	<b>6</b>	<b>123</b>



**Figure 6.** Distribution of size by life stage for Chinook salmon captured at Caswell (January 14 – April 19, 2009).



**Figure 7.** Length-frequency distribution of Chinook salmon captured at Caswell (January 14 – April 19, 2009).

**Disclaimer**

The data presented herein are preliminary and subject to revision until a final report and raw data are made public. Cramer Fish Sciences is not liable for data not properly cited as preliminary. Expressed consent may be obtained to cite this preliminary data by contacting [clarkw@fishsciences.net](mailto:clarkw@fishsciences.net).