DEPARTMENT OF FISH AND GAME
North Central Region

Lower Yuba River Chinook Salmon Escapement Survey

September – December 2005

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Introduction

The Yuba River, a tributary of the Feather River, drains a watershed of 3,468 kilometers^2 (1,339 miles^2), originating in the higher elevations of the west slope of the Sierra Nevada. The lower Yuba River is drained by the North, Middle, and South Yuba Rivers. The three tributaries converge near, and are impounded by the U.S. Army Corps of Engineers' (ACOE) Englebright Dam, approximately 39 kilometers (24 river miles) east of the city of Marysville which represents the upper limits of anadromous fish migration and spawning (Drury, 2001). The lower Yuba River provides spawning habitat for adult spring-, fall-, and late fall-run Chinook salmon, as well as Central Valley steelhead trout (DFG, 1991). In addition, the river below Daguerre Point Dam supports other anadromous species including American shad and striped bass. Over the years, lower Yuba River anadromous salmonid populations have been adversely affected by water and land use practices; such as mining, dam construction, and water diversions that have impacted available spawning habitat through non-natural flow regimes, unsuitable water temperatures, and an overall loss of available spawning gravel substrates. These practices affect adult Chinook salmon populations through losses to crucial habitat during essential rearing, migration and spawning periods.

Historically, the spring-run Chinook salmon was considered the most abundant run of salmon in the Central Valley of California, with yearly escapements in the Sacramento River estimated to have reached 600,000 spawners. The spring-run was also a major component of the Yuba River fishery. Prior to extensive habitat degradation by hydraulic mining and hydroelectric dams, spring-run Chinook salmon were able to ascend high into the Sierra Nevada in the North Yuba River to Loves Falls near Sierra City (Yoshiyama, 2001). The Middle and South Yuba Rivers were also utilized for spawning and rearing. Currently, spring-run Chinook salmon are restricted from their historic range and must spawn in less-than-optimal habitat downstream of Englebright Dam. Spring-run Chinook salmon on the lower Yuba River were listed as threatened under both the Federal and State Endangered Species Acts on September 16, 1999, and their threatened status was reaffirmed on July 28, 2005.

Fall-run Chinook salmon also historically utilized the lower Yuba River. They supported up to 15% of the total annual escapement of fall-run Chinook salmon in the Sacramento River system (Reynolds, 1993). Hydraulic mining activities in the past have played a major role in habitat degradation, through water diversions that blocked fish passage and through extensive siltation that choked prime spawning habitat. Due to fall-run Chinook salmon life history traits, Yuba River populations have not been largely affected by the spatial loss of habitat due to dam construction, but rather are more affected by the associated non-natural flows and loss of rearing/spawning habitat; notably the absence of natural gravel recruitment and large woody debris.

Escapement surveys have been conducted on the lower Yuba River to estimate the number of returning adult Chinook salmon since 1953. Previous estimates were infrequent and unlike more recent surveys (1994, 1996-2005), methods were not consistent from year to year. Survey duration and area of sampling varied, resulting in data that are statistically inappropriate for trend analysis. Escapement survey methods have been more consistent in recent years in both duration

and actual area surveyed. This year's survey on the Yuba River incorporates the methods of more recent escapement protocols.

Methods

The lower Yuba River Chinook salmon escapement survey was conducted from the Narrows pool downstream to the Simpson Lane Bridge; a distance of approximately 32 kilometers (20 river miles). The river was stratified into three reaches (**Table 1**). All reaches were surveyed once a week via jet boat from September 27, 2005 through December 22, 2005. Each weekly survey was completed utilizing a crew of three to four people.

Table 1. Yuba River fall-run Chinook salmon escapement survey reaches.

Reach	Location	Kilometers
1	Narrows pool to State Route 20 Bridge	5
2	State Route 20 Bridge to Daguerre Point Dam	11
3	Daguerre Point Dam to Simpson Lane Bridge	16
Total		**32**

Each week all fresh carcasses (defined as having one clear eye and pink gills) were counted and tagged with a color-coded hog ring on the upper jaw for adults and on the lower jaw for grilse. A unique color was used each week to identify the carcasses to a specific tagging week. Each tagged carcass was returned to flowing water for dispersal. Fresh carcasses with a missing adipose fin were identified as having a coded-wire tag (CWT); heads were removed from the fresh CWT carcasses and affixed with a jaw tag containing information on fish length, sex, species, method of take, river mile, date and a unique code. Collected CWT heads were frozen and later processed (tags extracted and read) by Department personnel. CWT carcasses were chopped in half and recorded as a freshly chopped carcass. Ten percent of all fresh female carcasses observed were checked to determine the degree of egg retention. Every tenth fresh female carcass observed was identified as either completely spawned (0 to 30% eggs retained), partially spawned (>30 to 70% eggs retained), or un-spawned (nearly full ovaries). All observed decomposing carcasses were counted and chopped with a machete to prevent recounting during subsequent surveys, but were not tagged. Decomposing and recovered (previously tagged) carcasses were also chopped. Fresh adult carcass data were compiled and used in a Schaefer mark-recovery calculation (Schaefer, 1951) as modified by Taylor (1974) to produce an adult escapement estimate. A grilse estimate was completed by taking the observed proportion of fresh adult to grilse carcasses and extrapolating the Schaefer adult estimate.

A grilse cutoff length of 64.5 cm was obtained by an analysis of 4,766 records of Vaki Riverwatcher length frequency data for the period March 1, 2005 to September 15, 2005, and by analysis of length frequency data taken from the Feather River Hatchery (FRH) in September 2005. Additionally, the standard cutoff length from the 2003 and 2004 Jones and Stokes study was 64.5 cm. A discussion with George Neillands, DFG Fishery Biologist with the Ocean Salmon Project, indicated that 65 cm was a good average cutoff length. His analysis of Central Valley Chinook salmon metadata has indicated that two- and three-year old spawners fall either

above or below this cutoff length, but that this length represents an adequate middle ground for escapement purposes.

Mean daily flow data were obtained from the Marysville gaging station located on the lower Yuba River near the town of Hallwood.

Results

An estimated 17,630 Chinook salmon spawned in the lower Yuba River survey area during the period of September 27, 2005 to December 22, 2005 (**Appendix A, Tables A1-A3**). This estimate was similar in size to escapements observed in 2004 (15,269 fish) and in 2000 (14,995 fish) (**Figure 1**). A direct grilse estimate could not be completed due to the low number of grilse observed (121 total for the survey period) during weekly surveys, making Schaefer estimation methods impossible. The grilse component of the total estimate was derived from the ratio of observed adult to grilse carcasses and extrapolating the adult Schaefer estimate to obtain a grilse estimate. The adult Schaefer estimate for 2005 was 16,622, whereas the grilse estimate was 1008, for a total escapement of 17,630 Chinook salmon based upon an observed 16.5:1 adult to grilse ratio. Separate estimates were created for each of the three survey reaches. Reach 1 (Narrows to SR 20 Bridge) accounted for 29.8% of the total spawner estimate with 4,946 adults and 300 grilse. Reach 2 (SR 20 to Daguerre Dam) accounted for 40.1% of the total spawner estimate with 6,666 adults and 404 grilse. Reach 3 accounted for 30.1% of the total spawner estimate with 5,010 adults and 304 grilse.

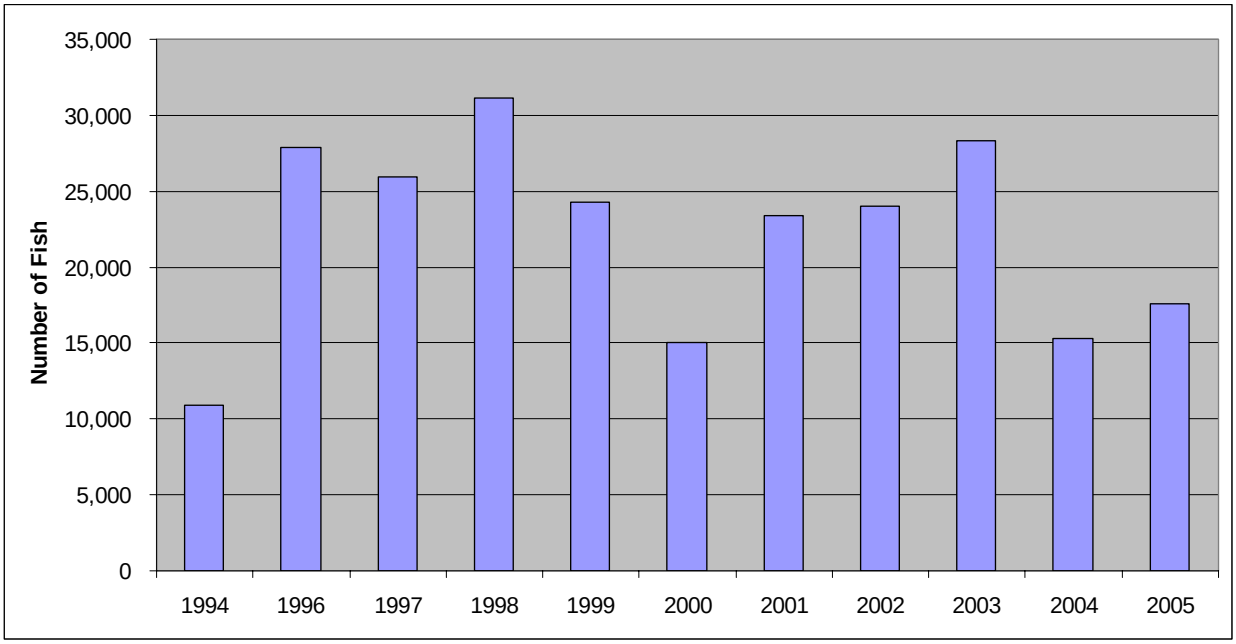

Figure 1. Yuba River Chinook salmon escapement estimates (comparable methods).

A total of 196 fresh carcasses was identified as having an adipose fin clip and the heads were collected for later CWT extraction and reading (**Appendix B, Table B1**). Of the 196 collected

heads, 169 CWTs were successfully extracted and read. The remaining 27 tags were recorded as sheds. One-hundred sixty CWT Chinook salmon were recovered from the 2002 brood year, whereas eight were from the 2001 brood year, and a single recovery was observed from the 2003 brood year. Spring-run Chinook salmon accounted for 133 of the recoveries, whereas fall-run accounted for 36 of the total 169 recoveries. All spring-run Chinook salmon recoveries were from FRH and fall-run recoveries originated from a combination of FRH, Nimbus Fish Hatchery (NFH) and Coleman National Fish Hatchery (CNFH). Although the Yuba River has an ongoing wild CWT tagging project, no tags from this effort were recovered during the survey period. The first cohort of wild-tagged Chinook salon would have been two-years old and potentially returning to the Yuba River as grilse to spawn. However, all CWTs recovered during the survey period were from out-of-basin hatcheries. FRH Chinook salmon accounted for 97% of the CWT recoveries, whereas NFH and CNFH accounted for less than 3% of the recoveries. The majority of FRH strays were from plants transported from their natal hatcheries, mostly to San Pablo Bay (**Table 2**).

Table 2. Release locations of Yuba River CWT Chinook salmon recovered.

Release Location	# of Recoveries
Benecia	125
Clarksburg	3
Crockett	4
Elkhorn Boat Ramp	1
Live Oak	10
Port Chicago	4
Vierra's Resort (Isleton)	1
West Sacramento	14
Wickland Oil Net Pens	7
Total:	**169**

Only ten of the 169 total recovered CWT fish were released in their natal stream (all were FRH origin released in Live Oak). The majority of the transported fish were released from Benecia and other locations. The high rate of straying from this hatchery could be attributed to these non-natal stream plants. Possible causes include incomplete imprinting on home waters, or an increase in survivability over in-river releases. A combination of both scenarios could also be attributed; however, further data analysis and cohort reconstruction from the 2001-2003 brood years would be needed to investigate this straying.

Of the 913 fresh female carcasses observed during the survey period, 80 fresh female adipose-fin clipped Chinook salmon were sampled for egg retention by opening the abdominal cavity and visually inspecting for the presence of eggs. Sixty-eight of the 80 total sampled were completely spawned, representing 85% of the sample (**Table 3**). The remaining 3.8% were partially spawned and 11% were unspawned. The majority of unspawned fresh females were observed above the State Route 20 Bridge (11% in Reach 1); however, proportionally more unspawned females were observed below Daguerre Dam (21% in Reach 3). Although a higher proportion of unspawned carcasses did seem to have a spatial tendency to be observed below Daguerre Dam, there was no discernable temporal pattern.

Table 3. Egg retention survey results.

	# female carcass	# sampled	% sampled	# spawn	% spawn	# par spawn	% par spawn	# unspawn	% unspawn
Reach 1	413	38	9.2%	32	84%	2	5%	4	11%
Reach 2	345	28	8.1%	25	89%	1	4%	2	7%
Reach 3	155	14	9.0%	11	79%	0	0%	3	21%

Flows during the survey period remained fairly constant (450 – 650 cfs). The consistent flows allowed weekly surveys to continue unabated, with the exception of two storm events; the latter of which on December 22, 2005 ended the survey due to unsafe flow conditions (**Figure 2**).

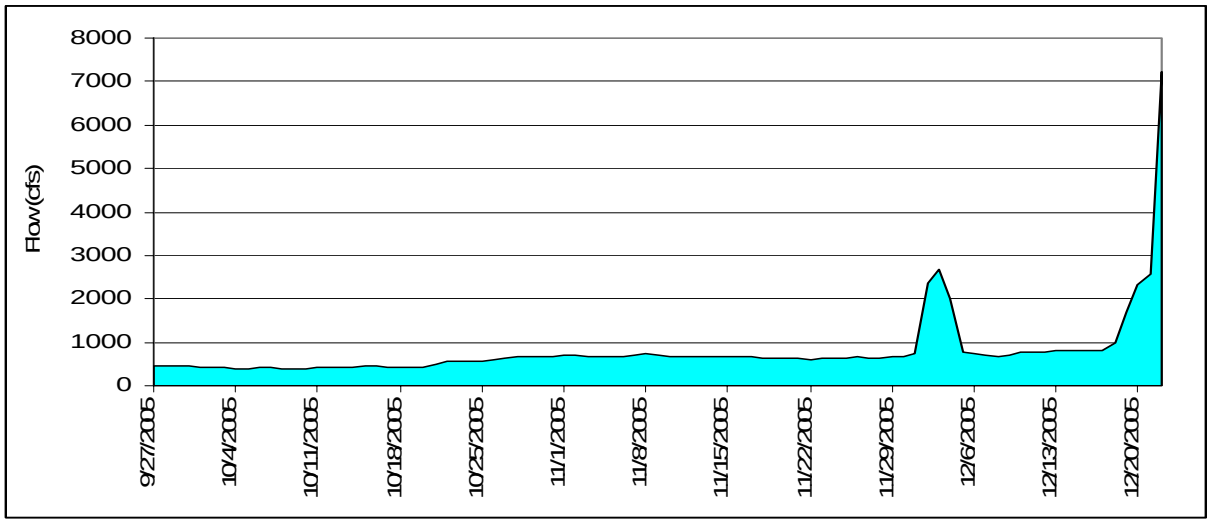

Figure 2. Yuba River mean daily flow as measured at the Marysville gage from September 27, 2005 to December 22, 2005.

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Appendix A – Weekly Schaefer Estimates

Table A1. Weekly recoveries and population estimates of adult Chinook salmon from the Narrows pool to the State Route 20 Bridge.

Week of	R *(ij)* by Week of Tagging *(i)*													Tags Recovd	Carcass Count	
Recovery *(j)*	26-Sep	3-Oct	10-Oct	17-Oct	24-Oct	31-Oct	7-Nov	14-Nov	21-Nov	28-Nov	5-Dec	12-Dec	19-Dec	R *(j)*	C *(j)*	C*(j)* /R*(j)*
3-Oct	7													7	205	29.29
10-Oct	1	26												27	412	15.26
17-Oct	0	8	25											33	404	12.24
24-Oct	1	6	10	28										45	440	9.78
31-Oct	3	0	2	7	10									22	232	10.55
7-Nov	0	0	0	3	8	17								28	160	5.71
14-Nov	0	0	0	1	7	9	33							50	189	3.78
21-Nov	0	0	0	0	3	1	4	22						30	155	5.17
28-Nov	0	0	0	0	0	0	1	1	7					9	83	9.22
5-Dec	0	0	0	0	0	1	0	3	9	10				23	94	4.09
12-Dec	0	0	0	0	0	0	0	0	0	2	4			6	36	6.00
19-Dec	0	0	0	0	0	0	0	0	1	0	0	0		1	40	40.00
Recovery R*(i)*	12	40	37	39	28	28	38	26	17	12	4	0	0	281	2450	
Tagged M *(i)*	20	70	99	90	94	60	50	66	48	28	16	9	8	658		
M *(i)* / R *(i)*	1.67	1.75	2.68	2.31	3.36	2.14	1.32	2.54	2.82	2.33	4.00	n/a	n/a			
Recov. Ratio:	60.0%	57.1%	37.4%	43.3%	29.8%	46.7%	76.0%	39.4%	35.4%	42.9%	25.0%	n/a	n/a	**42.7%**	**Overall Recovery**	

Week of	Estimate by Week of Tagging *(i)*													Schaefer Weekly Totals	
Recovery *(j)*	26-Sep	3-Oct	10-Oct	17-Oct	24-Oct	31-Oct	7-Nov	14-Nov	21-Nov	28-Nov	5-Dec	12-Dec	19-Dec		
3-Oct	342													342	
10-Oct	25	694												719	
17-Oct	0	171	819											990	
24-Oct	16	103	262	632										1013	
31-Oct	53	0	56	170	354									633	
7-Nov	0	0	0	40	153	208								401	
14-Nov	0	0	0	9	89	73	164							335	
21-Nov	0	0	0	0	52	11	27	289						379	
28-Nov	0	0	0	0	0	0	12	23	182					217	
5-Dec	0	0	0	0	0	9	0	31	104	95				239	
12-Dec	0	0	0	0	0	0	0	0	0	28	96			124	
19-Dec	0	0	0	0	0	0	0	0	113	0	0	40		153	
subtotal	436	968	1137	851	648	301	203	343	399	123	96	40	0	5545	Total Estimate
subtract tags		-70	-99	-90	-94	-60	-50	-66	-48	-28	-16			-621	Tag Adjustment
														22	Fish Handled Week 1
														4946	**Adjusted Total**

Table A2. Weekly recoveries and population estimates of adult Chinook salmon from the State Route 20 Bridge to Daguerre Dam.

Week of	R *(ij)* by Week of Tagging *(i)*													Tags Recovd	Carcass Count	
Recovery *(j)*	26-Sep	3-Oct	10-Oct	17-Oct	24-Oct	31-Oct	7-Nov	14-Nov	21-Nov	28-Nov	5-Dec	12-Dec	19-Dec	R *(j)*	C *(j)*	C*(j)* /R*(j)*
3-Oct	4													4	144	36.00
10-Oct	0	9												9	204	22.67
17-Oct	1	6	14											21	320	15.24
24-Oct	0	0	2	19										21	328	15.62
31-Oct	0	0	0	14	14									28	317	11.32
7-Nov	0	0	0	2	7	26								35	209	5.97
14-Nov	0	0	0	0	3	4	28							35	326	9.31
21-Nov	0	0	0	0	0	4	5	31						40	322	8.05
28-Nov	0	0	0	0	0	0	2	5	38					45	355	7.89
5-Dec	0	0	0	0	0	0	0	3	6	9				18	224	12.44
12-Dec	0	0	0	0	0	0	0	0	1	0	8			9	59	6.56
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0.00
Recovery R*(i)*	5	15	16	35	24	34	35	39	45	9	8	0	0	265	2808	
Tagged M *(i)*	17	39	39	74	59	67	70	85	102	81	27	15	0	675		
M *(i)* / R *(i)*	3.40	2.60	2.44	2.11	2.46	1.97	2.00	2.18	2.27	9.00	3.38	n/a	n/a			
Recov. Ratio:	29.4%	38.5%	41.0%	47.3%	40.7%	50.7%	50.0%	45.9%	44.1%	11.1%	29.6%	n/a	n/a	**39.3%**	**Overall Recovery**	

Week of	Estimate by Week of Tagging *(i)*													Schaefer Weekly Totals	
Recovery *(j)*	26-Sep	3-Oct	10-Oct	17-Oct	24-Oct	31-Oct	7-Nov	14-Nov	21-Nov	28-Nov	5-Dec	12-Dec	19-Dec		
3-Oct	490													490	
10-Oct	0	530												530	
17-Oct	52	238	520											810	
24-Oct	0	0	76	627										703	
31-Oct	0	0	0	335	390									725	
7-Nov	0	0	0	25	103	306								434	
14-Nov	0	0	0	0	69	73	522							664	
21-Nov	0	0	0	0	0	63	81	544						688	
28-Nov	0	0	0	0	0	0	32	86	679					797	
5-Dec	0	0	0	0	0	0	0	81	169	1008				1258	
12-Dec	0	0	0	0	0	0	0	0	15	0	177			192	
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0		0	
subtotal	542	768	596	987	562	442	635	711	863	1008	177	0	0	7291	Total Estimate
subtract tags		-39	-39	-74	-59	-67	-70	-85	-102	-81	-27			-643	Total Tag Adjustment
														18	Fish Handled 1st week
														6666	**Adjusted Total**

Table A3. Weekly recoveries and population estimates of adult Chinook salmon from Daguerre Dam to the Simpson Lane Bridge.

Week of Recovery *(j)*	26-Sep	3-Oct	10-Oct	17-Oct	24-Oct	31-Oct	7-Nov	14-Nov	21-Nov	28-Nov	5-Dec	12-Dec	19-Dec	Tags Recovd R *(j)*	Carcass Count C *(j)*	C*(j)* /R*(j)*
3-Oct	1													1	19	19.00
10-Oct	0	2												2	28	14.00
17-Oct	0	0	1											1	41	41.00
24-Oct	0	0	0	1										1	43	43.00
31-Oct	0	0	0	0	1									1	73	73.00
7-Nov	0	0	0	0	0	3								3	120	40.00
14-Nov	0	0	0	0	0	1	10							11	205	18.64
21-Nov	0	0	0	0	0	0	0	3						3	63	21.00
28-Nov	0	0	0	0	0	0	3	6	13					22	380	17.27
5-Dec	0	0	0	0	0	0	0	1	1	7				9	209	23.22
12-Dec	0	0	0	0	0	0	0	0	0	3	14			17	111	6.53
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0.00
Recovery R*(i)*	1	2	1	1	1	4	13	10	14	10	14	0	0	71	1292	
Tagged M *(i)*	2	4	8	1	12	18	40	47	21	55	44	23	0	275		
M *(i)* / R *(i)*	2.00	2.00	8.00	1.00	12.00	4.50	3.08	4.70	1.50	5.50	3.14	0.00	0.00			
Recov. Ratio:	50.0%	50.0%	12.5%	100.0%	8.3%	22.2%	32.5%	21.3%	66.7%	18.2%	31.8%	0.0%	0.0%	**25.8%**	**Overall Recovery**	

Week of	Estimate by Week of Tagging *(i)*													Schaefer Weekly Totals	
Recovery *(j)*	26-Sep	3-Oct	10-Oct	17-Oct	24-Oct	31-Oct	7-Nov	14-Nov	21-Nov	28-Nov	5-Dec	12-Dec	19-Dec		
3-Oct	38													38	
10-Oct	0	56												56	
17-Oct	0	0	328											328	
24-Oct	0	0	0	43										43	
31-Oct	0	0	0	0	876									876	
7-Nov	0	0	0	0	0	540								540	
14-Nov	0	0	0	0	0	84	573							657	
21-Nov	0	0	0	0	0	0	0	296						296	
28-Nov	0	0	0	0	0	0	159	487	337					983	
5-Dec	0	0	0	0	0	0	0	109	35	894				1038	
12-Dec	0	0	0	0	0	0	0	0	0	108	287			395	
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0		0	
subtotal	38	56	328	43	876	624	732	892	372	1002	287	0	0	5250	Total Estimate
subtract tags		-4	-8	-1	-12	-18	-40	-47	-21	-55	-44			-250	Total Tag Adjustment
														10	Fish Handled 1st week
														5010	**Adjusted Total**

Appendix B – Coded-Wire Tag Recovery

Table B1. Coded-wire tag recoveries from the Yuba River escapement survey from September 27, 2005 to December 22, 2005.

Date Rec	Head tag #	CWT #	Location	Brood Yr	Race	Rel Location	Rel Date	# Released	Origin	FL (mm)	Sex	Avg FL	Reader 1	Reader 2
9/27/2005	49103	0601080806	RM 22	2002	FRCS	Port Chicago	5/1/2003	25,266	FRH	900	M	82	Ocean Salmon	n/a
9/27/2005	49107	shed	RM 21	n/a	n/a	n/a	n/a	n/a	n/a	840	M	n/a	Brown	Ocean Salmon
9/27/2005	49104	062762	RM 22	2002	SRCS	Benicia	4/29/2003	54,307	FRH	895	M	93	Brown	Garman
9/27/2005	49106	062731	RM 21	2001	SRCS	Wickland Oil Net Pen	4/1/2002	165,805	FRH	910	M	91	Brown	Massa
9/27/2005	49110	062757	RM 21	2002	SRCS	Benicia	4/29/2003	54,358	FRH	715	F	92	Brown	Massa
9/27/2005	49112	062757	RM 21	2002	SRCS	Benicia	4/29/2003	54,358	FRH	750	M	92	Brown	Massa
9/27/2005	49105	062787	RM 22	2002	SRCS	Benicia	5/21/2003	105,465	FRH	750	F	92	Brown	Massa
9/27/2005	49111	062785	RM 21	2002	SRCS	Benicia	5/21/2003	105,706	FRH	775	M	92	Brown	Massa
9/27/2005	49101	062758	RM 22	2002	SRCS	Benicia	4/29/2003	54,318	FRH	800	F	92	Brown	Massa
9/27/2005	49109	062787	RM 21	2002	SRCS	Benicia	5/21/2003	105,465	FRH	890	M	92	Brown	Massa
9/27/2005	49108	062762	RM 21	2002	SRCS	Benicia	4/29/2003	54,307	FRH	870	M	93	Brown	Massa
9/27/2005	49102	062787	RM 22	2002	SRCS	Benicia	5/21/2003	105,465	FRH	805	M	92	Brown	Plemons
9/28/2005	49117	shed	RM 15	n/a	n/a	n/a	n/a	n/a	n/a	795	M	n/a	Brown	Ocean Salmon
9/28/2005	49119	shed	RM 14	n/a	n/a	n/a	n/a	n/a	n/a	925	M	n/a	Brown	Ocean Salmon
9/28/2005	49115	shed	RM 16	n/a	n/a	n/a	n/a	n/a	n/a	970	M	n/a	Brown	Ocean Salmon
9/28/2005	49114	062787	RM 15	2002	SRCS	Benicia	5/21/2003	105,465	FRH	710	F	92	Brown	Massa
9/28/2005	49118	062763	RM 14	2002	SRCS	Benicia	4/29/2003	53,522	FRH	730	F	92	Brown	Massa
9/28/2005	49116	062786	RM 15	2002	SRCS	Benicia	5/21/2003	105,692	FRH	750	M	92	Brown	Massa
9/28/2005	49120	062762	RM 14	2002	SRCS	Benicia	4/29/2003	54,307	FRH	860	M	93	Brown	Massa
9/28/2005	49113	062789	RM 18	2002	SRCS	Live Oak	5/21/2003	105,181	FRH	750	M	94	Brown	Massa
9/28/2005	49121	062786	RM 14	2002	SRCS	Benicia	5/21/2003	105,465	FRH	840	M	92	Brown	Ocean Salmon
9/29/2005	49124	shed	RM 05	n/a	n/a	n/a	n/a	n/a	n/a	830	M	n/a	Brown	Ocean Salmon
9/29/2005	49122	shed	RM 11	n/a	n/a	n/a	n/a	n/a	n/a	870	M	n/a	Brown	Ocean Salmon
9/29/2005	49123	062757	RM 11	2002	SRCS	Benicia	4/29/2003	54,358	FRH	770	M	92	Brown	Massa
9/30/2005	49163	shed	RM 20	n/a	n/a	n/a	n/a	n/a	n/a	820	M	n/a	Brown	Ocean Salmon
10/4/2005	49153	062773	RM 20	2002	FRCS	Crockett	6/10/2003	55,625	FRH	760	F	92	Brown	Massa
10/4/2005	49173	0601080802	RM 19	2002	FRCS	West Sacramento	5/15/2003	25,292	FRH	765	F	78	Brown	Plemons
10/4/2005	49157	0601080806	RM 20	2002	FRCS	Port Chicago	5/1/2003	25,266	FRH	690	F	82	Brown	Plemons
10/4/2005	49158	062769	RM 20	2002	FRCS	Crockett	6/10/2003	54,152	FRH	700	F	92	Brown	Plemons
10/4/2005	49166	0601080802	RM 20	2002	FRCS	West Sacramento	5/15/2003	25,292	FRH	750	F	78	Ocean Salmon	n/a
10/4/2005	49164	0601080802	RM 20	2002	FRCS	West Sacramento	5/15/2003	25,292	FRH	765	M	78	Ocean Salmon	n/a
10/4/2005	49165	0601080803	RM 20	2002	FRCS	West Sacramento	5/15/2003	24,992	FRH	855	M	78	Ocean Salmon	n/a
10/4/2005	49133	shed	RM 22	n/a	n/a	n/a	n/a	n/a	n/a	680	F	n/a	Brown	Ocean Salmon
10/4/2005	49175	shed	RM 19	n/a	n/a	n/a	n/a	n/a	n/a	805	F	n/a	Brown	Ocean Salmon
10/4/2005	49162	shed	RM 20	n/a	n/a	n/a	n/a	n/a	n/a	880	M	n/a	Brown	Ocean Salmon
10/4/2005	49143	062787	RM 21	2002	SRCS	Benicia	5/21/2003	105,465	FRH	710	F	92	Brown	Massa
10/4/2005	49151	062758	RM 20	2002	SRCS	Benicia	4/29/2003	54,318	FRH	730	F	92	Brown	Massa
10/4/2005	49146	062763	RM 21	2002	SRCS	Benicia	4/29/2003	53,522	FRH	745	F	92	Brown	Massa
10/4/2005	49170	062786	RM 19	2002	SRCS	Benicia	5/21/2003	105,692	FRH	745	M	92	Brown	Massa
10/4/2005	49145	062786	RM 21	2002	SRCS	Benicia	5/21/2003	105,692	FRH	760	F	92	Brown	Massa
10/4/2005	49171	062763	RM 19	2002	SRCS	Benicia	4/29/2003	53,522	FRH	815	M	92	Brown	Massa
10/4/2005	49140	062757	RM 21	2002	SRCS	Benicia	4/29/2003	54,358	FRH	820	M	92	Brown	Massa
10/4/2005	49152	062762	RM 20	2002	SRCS	Benicia	4/29/2003	54,307	FRH	740	F	93	Brown	Massa
10/4/2005	49141	062789	RM 21	2002	SRCS	Live Oak	5/21/2003	105,181	FRH	850	M	94	Brown	Massa
10/4/2005	49177	062763	RM 17	2002	SRCS	Benicia	4/29/2003	53,522	FRH	705	F	92	Brown	Plemons
10/4/2005	49176	062757	RM 19	2002	SRCS	Benicia	4/29/2003	54,358	FRH	835	M	92	Brown	Plemons
10/4/2005	49144	062689	RM 21	2001	SRCS	Wickland Oil Net Pen	3/28/2002	159,922	FRH	800	F	87	Brown	Plemons
10/4/2005	49168	062759	RM 20	2002	SRCS	Benicia	4/29/2003	55,376	FRH	620	F	92	Brown	Plemons
10/4/2005	49178	062785	RM 19	2002	SRCS	Benicia	5/21/2003	105,706	FRH	630	M	92	Brown	Plemons
10/4/2005	49126	062763	RM 22	2002	SRCS	Benicia	4/29/2003	53,522	FRH	680	F	92	Brown	Plemons
10/4/2005	49139	062758	RM 21	2002	SRCS	Benicia	4/29/2003	54,318	FRH	705	F	92	Brown	Plemons
10/4/2005	49136	062757	RM 22	2002	SRCS	Benicia	4/29/2003	54,358	FRH	710	F	92	Brown	Plemons
10/4/2005	49125	062757	RM 22	2002	SRCS	Benicia	4/29/2003	54,358	FRH	710	F	92	Brown	Plemons
10/4/2005	49150	062761	RM 20	2002	SRCS	Benicia	4/29/2003	55,041	FRH	710	F	92	Brown	Plemons
10/4/2005	49149	062759	RM 21	2002	SRCS	Benicia	4/29/2003	55,376	FRH	710	M	92	Brown	Plemons
10/4/2005	49134	062787	RM 22	2002	SRCS	Benicia	5/21/2003	105,465	FRH	710	F	92	Brown	Plemons
10/4/2005	49161	062787	RM 20	2002	SRCS	Benicia	5/21/2003	105,465	FRH	720	F	92	Brown	Plemons
10/4/2005	49155	062757	RM 20	2002	SRCS	Benicia	4/29/2003	54,358	FRH	725	F	92	Brown	Plemons
10/4/2005	49127	062787	RM 22	2002	SRCS	Benicia	5/21/2003	105,465	FRH	730	F	92	Brown	Plemons
10/4/2005	49274	062763	RM 21	2002	SRCS	Benicia	4/29/2003	53,522	FRH	735	F	92	Brown	Plemons
10/4/2005	49169	062786	RM 20	2002	SRCS	Benicia	5/21/2003	105,692	FRH	745	M	92	Brown	Plemons
10/4/2005	49156	062786	RM 20	2002	SRCS	Benicia	5/21/2003	105,692	FRH	745	M	92	Brown	Plemons
10/4/2005	49128	062756	RM 22	2002	SRCS	Benicia	4/28/2003	54,359	FRH	750	F	92	Brown	Plemons
10/4/2005	49131	062759	RM 22	2002	SRCS	Benicia	4/29/2003	55,376	FRH	750	M	92	Brown	Plemons
10/4/2005	49147	062758	RM 21	2002	SRCS	Benicia	4/29/2003	54,318	FRH	755	F	92	Brown	Plemons
10/4/2005	49129	062762	RM 22	2002	SRCS	Benicia	4/29/2003	54,307	FRH	760	M	92	Brown	Plemons
10/4/2005	49159	062786	RM 20	2002	SRCS	Benicia	5/21/2003	105,692	FRH	760	M	92	Brown	Plemons
10/4/2005	49167	062756	RM 20	2002	SRCS	Benicia	4/28/2003	54,359	FRH	770	M	92	Brown	Plemons
10/4/2005	49160	062762	RM 20	2002	SRCS	Benicia	4/29/2003	54,307	FRH	785	M	92	Brown	Plemons
10/4/2005	49132	062786	RM 22	2002	SRCS	Benicia	5/21/2003	105,692	FRH	785	F	92	Brown	Plemons
10/4/2005	49142	062756	RM 21	2002	SRCS	Benicia	4/28/2003	54,359	FRH	790	F	92	Brown	Plemons
10/4/2005	49174	062787	RM 19	2002	SRCS	Benicia	5/21/2003	105,465	FRH	790	M	92	Brown	Plemons
10/4/2005	49138	062757	RM 21	2002	SRCS	Benicia	4/29/2003	54,358	FRH	800	F	92	Brown	Plemons
10/4/2005	49130	062763	RM 22	2002	SRCS	Benicia	4/29/2003	53,522	FRH	820	M	92	Brown	Plemons
10/4/2005	49137	062761	RM 22	2002	SRCS	Benicia	4/29/2003	55,041	FRH	825	M	92	Brown	Plemons
10/4/2005	49154	062786	RM 20	2002	SRCS	Benicia	5/21/2003	105,692	FRH	875	M	92	Brown	Plemons
10/4/2005	49135	062763	RM 22	2002	SRCS	Benicia	4/29/2003	53,522	FRH	890	M	92	Brown	Plemons

Table B1. Coded-wire tag recoveries from the Yuba River escapement survey from September 27, 2005 to December 22, 2005 (cont.).

Date Rec	Head tag #	CWT #	Location	Brood Yr	Race	Rel Location	Rel Date	# Released	Origin	FL (mm)	Sex	Avg FL	Reader 1	Reader 2
10/4/2005	49172	062762	RM 19	2002	SRCS	Benicia	4/29/2003	54,307	FRH	755	F	93	Brown	Plemons
10/4/2005	49148	062790	RM 21	2002	SRCS	Live Oak	5/21/2003	108,680	FRH	790	M	94	Brown	Plemons
10/5/2005	49200	062685	RM 12	2002	FRCS	Live Oak	4/30/2003	54,186	FRH	930	M	77	Brown	Massa
10/5/2005	49199	062781	RM 12	2002	FRCS	Vierra's Resort	3/17/2003	24,938	FRH	885	M	74	Brown	Plemons
10/5/2005	49191	0601080801	RM 15	2002	FRCS	West Sacramento	4/30/2003	25,475	FRH	890	M	79	Ocean Salmon	n/a
10/5/2005	49183	shed	RM 17	n/a	n/a	n/a	n/a	n/a	n/a	710	F	n/a	Brown	Ocean Salmon
10/5/2005	49187	shed	RM 15	n/a	n/a	n/a	n/a	n/a	n/a	760	F	n/a	Brown	Ocean Salmon
10/5/2005	49185	062760	RM 16	2002	SRCS	Benicia	4/29/2003	54,357	FRH	610	F	92	Brown	Massa
10/5/2005	49179	062757	RM 12	2002	SRCS	Benicia	4/29/2003	54,358	FRH	710	F	92	Brown	Massa
10/5/2005	49188	062787	RM 15	2002	SRCS	Benicia	5/21/2003	105,465	FRH	830	M	92	Brown	Massa
10/5/2005	49197	062759	RM 12	2002	SRCS	Benicia	4/29/2003	55,376	FRH	730	M	92	Brown	Plemons
10/5/2005	49195	062756	RM 13	2002	SRCS	Benicia	4/28/2003	54,359	FRH	735	M	92	Brown	Plemons
10/5/2005	49189	062785	RM 15	2002	SRCS	Benicia	5/21/2003	105,706	FRH	765	F	92	Brown	Plemons
10/5/2005	49193	062763	RM 14	2002	SRCS	Benicia	4/29/2003	53,522	FRH	845	M	92	Brown	Plemons
10/5/2005	49194	062786	RM 13	2002	SRCS	Benicia	5/21/2003	105,692	FRH	905	M	92	Brown	Plemons
10/5/2005	49192	062789	RM 14	2002	SRCS	Live Oak	5/21/2003	105,181	FRH	815	F	94	Brown	Plemons
10/5/2005	49181	062787	RM 18	2002	SRCS	Benicia	5/21/2003	105,465	FRH	730	M	92	Brown	Plemons
10/5/2005	49201	062760	RM 12	2002	SRCS	Benicia	4/29/2003	54,357	FRH	735	F	92	Brown	Plemons
10/5/2005	49196	062761	RM 12	2002	SRCS	Benicia	4/29/2003	55,041	FRH	780	M	92	Brown	Plemons
10/5/2005	49180	062786	RM 17	2002	SRCS	Benicia	5/21/2003	105,692	FRH	790	F	92	Brown	Plemons
10/5/2005	49190	062759	RM 15	2002	SRCS	Benicia	4/29/2003	55,376	FRH	800	M	92	Brown	Plemons
10/5/2005	49184	062785	RM 16	2002	SRCS	Benicia	5/21/2003	105,706	FRH	810	M	92	Brown	Plemons
10/5/2005	49182	062786	RM 17	2002	SRCS	Benicia	4/29/2003	55,041	FRH	860	M	92	Brown	Plemons
10/5/2005	49198	062763	RM 12	2002	SRCS	Benicia	4/29/2003	53,522	FRH	910	M	92	Brown	Plemons
10/5/2005	49186	062793	RM 15	2002	SRCS	Live Oak	5/19/2003	97,602	FRH	825	F	94	Brown	Plemons
10/6/2005	49203	062697	RM 04	2001	FRCS	West Sacramento	4/17/2002	45,972	FRH	850	M	85	Brown	Plemons
10/6/2005	49204	062685	RM 03	2002	FRCS	Live Oak	4/30/2003	54,186	FRH	820	F	77	Brown	Plemons
10/6/2005	49202	shed	RM 11	n/a	n/a	n/a	n/a	n/a	n/a	905	M	n/a	Brown	Ocean Salmon
10/11/2005	49265	062768	RM 22	2002	FRCS	Live Oak	4/30/2003	54,493	FRH	825	M	77	Brown	Plemons
10/11/2005	49282	0601080802	RM 20	2002	FRCS	West Sacramento	5/15/2003	25,292	FRH	735	F	78	Brown	Plemons
10/11/2005	49289	0601080803	RM 20	2002	FRCS	West Sacramento	5/15/2003	24,992	FRH	765	F	78	Brown	Plemons
10/11/2005	49267	0601070007	RM 22	2001	FRCS	Elkhorn Boat Ramp	2/5/2002	24,566	FRH	800	M	78	Brown	Plemons
10/11/2005	49255	062775	RM 22	2002	FRCS	Crockett	6/10/2003	55,611	FRH	765	F	92	Brown	Plemons
10/11/2005	49252	062738	RM 22	2001	FRCS	Wickland Oil Net Pen	4/23/2002	105,753	FRH	870	F	94	Brown	Plemons
10/11/2005	49291	062736	RM 20	2002	FRCS	Wickland Oil Net Pen	5/6/2002	106,336	FRH	700	F	101	Brown	Plemons
10/11/2005	49293	0601080802	RM 19	2002	FRCS	West Sacramento	5/15/2003	25,292	FRH	890	M	78	Ocean Salmon	n/a
10/11/2005	49284	0601080807	RM 20	2002	FRCS	Port Chicago	5/1/2003	25,209	FRH	850	M	82	Ocean Salmon	n/a
10/11/2005	49280	shed	RM 21	n/a	n/a	n/a	n/a	n/a	n/a	660	F	n/a	Brown	Ocean Salmon
10/11/2005	49290	shed	RM 20	n/a	n/a	n/a	n/a	n/a	n/a	680	F	n/a	Brown	Ocean Salmon
10/11/2005	49269	shed	RM 22	n/a	n/a	n/a	n/a	n/a	n/a	690	F	n/a	Brown	Ocean Salmon
10/11/2005	49292	shed	RM 20	n/a	n/a	n/a	n/a	n/a	n/a	830	M	n/a	Brown	Ocean Salmon
10/11/2005	49262	062786	RM 22	2002	SRCS	Benicia	5/21/2003	105,692	FRH	660	F	92	Brown	Plemons
10/11/2005	49257	062757	RM 22	2002	SRCS	Benicia	4/29/2003	54,358	FRH	695	F	92	Brown	Plemons
10/11/2005	49260	062763	RM 22	2002	SRCS	Benicia	4/29/2003	53,522	FRH	705	F	92	Brown	Plemons
10/11/2005	49258	062759	RM 22	2002	SRCS	Benicia	4/29/2003	55,376	FRH	710	F	92	Brown	Plemons
10/11/2005	49286	062785	RM 20	2002	SRCS	Benicia	5/21/2003	105,706	FRH	710	F	92	Brown	Plemons
10/11/2005	49277	062762	RM 21	2002	SRCS	Benicia	4/29/2003	54,307	FRH	720	F	92	Brown	Plemons
10/11/2005	49254	062759	RM 22	2002	SRCS	Benicia	4/29/2003	55,376	FRH	730	F	92	Brown	Plemons
10/11/2005	49268	062787	RM 22	2002	SRCS	Benicia	5/21/2003	105,465	FRH	730	F	92	Brown	Plemons
10/11/2005	49273	062758	RM 21	2002	SRCS	Benicia	4/29/2003	54,318	FRH	735	F	92	Brown	Plemons
10/11/2005	49263	062757	RM 22	2002	SRCS	Benicia	4/29/2003	54,358	FRH	735	F	92	Brown	Plemons
10/11/2005	49287	062756	RM 20	2002	SRCS	Benicia	4/28/2003	54,359	FRH	735	F	92	Brown	Plemons
10/11/2005	49253	062760	RM 22	2002	SRCS	Benicia	4/29/2003	54,357	FRH	740	F	92	Brown	Plemons
10/11/2005	49256	062761	RM 22	2002	SRCS	Benicia	4/29/2003	55,041	FRH	740	F	92	Brown	Plemons
10/11/2005	49278	062785	RM 21	2002	SRCS	Benicia	5/21/2003	105,706	FRH	740	M	92	Brown	Plemons
10/11/2005	49264	062762	RM 22	2002	SRCS	Benicia	4/29/2003	54,307	FRH	755	F	92	Brown	Plemons
10/11/2005	49279	062760	RM 21	2002	SRCS	Benicia	4/29/2003	54,357	FRH	755	F	92	Brown	Plemons
10/11/2005	49251	062786	RM 22	2002	SRCS	Benicia	5/21/2003	105,692	FRH	760	F	92	Brown	Plemons
10/11/2005	49285	062785	RM 20	2002	SRCS	Benicia	5/21/2003	105,706	FRH	760	F	92	Brown	Plemons
10/11/2005	49271	062763	RM 21	2002	SRCS	Benicia	4/29/2003	53,522	FRH	765	F	92	Brown	Plemons
10/11/2005	49281	062757	RM 20	2002	SRCS	Benicia	4/29/2003	54,358	FRH	765	F	92	Brown	Plemons
10/11/2005	49275	062757	RM 21	2002	SRCS	Benicia	4/29/2003	54,358	FRH	770	F	92	Brown	Plemons
10/11/2005	49266	062756	RM 22	2002	SRCS	Benicia	4/28/2003	54,359	FRH	770	F	92	Brown	Plemons
10/11/2005	49261	062763	RM 22	2002	SRCS	Benicia	4/29/2003	53,522	FRH	775	F	92	Brown	Plemons
10/11/2005	49288	062758	RM 20	2002	SRCS	Benicia	4/29/2003	54,318	FRH	775	F	92	Brown	Plemons
10/11/2005	49259	062463	RM 22	2002	SRCS	Benicia	4/29/2003	53,522	FRH	825	F	92	Brown	Plemons
10/11/2005	49276	062756	RM 21	2002	SRCS	Benicia	4/28/2003	54,359	FRH	865	M	92	Brown	Plemons
10/11/2005	49270	062761	RM 22	2002	SRCS	Benicia	4/29/2003	55,041	FRH	865	M	92	Brown	Plemons
10/11/2005	49283	062762	RM 20	2002	SRCS	Benicia	4/29/2003	54,307	FRH	690	F	93	Brown	Plemons
10/11/2005	49272	062762	RM 21	2002	SRCS	Benicia	4/29/2003	54,307	FRH	805	M	93	Brown	Plemons
10/12/2005	49210	062765	RM 15	2002	FRCS	Live Oak	4/15/2003	54,435	FRH	830	M	75	Brown	Plemons
10/12/2005	49295	062774	RM 18	2002	FRCS	Crockett	6/10/2003	53,377	FRH	735	F	92	Brown	Plemons
10/12/2005	49297	shed	RM 17	n/a	n/a	n/a	n/a	n/a	n/a	745	F	n/a	Brown	Ocean Salmon
10/12/2005	49300	shed	RM 16	n/a	n/a	n/a	n/a	n/a	n/a	795	M	n/a	Brown	Ocean Salmon
10/12/2005	49211	062785	RM 14	2002	SRCS	Benicia	5/21/2003	105,706	FRH	680	F	92	Brown	Plemons
10/12/2005	49294	062786	RM 18	2002	SRCS	Benicia	5/21/2003	105,692	FRH	730	F	92	Brown	Plemons
10/12/2005	49299	062761	RM 17	2002	SRCS	Benicia	4/29/2003	55,041	FRH	740	F	92	Brown	Plemons

Table B1. Coded-wire tag recoveries from the Yuba River escapement survey from September 27, 2005 to December 22, 2005 (cont.).

Date Rec	Head tag #	CWT #	Location	Brood Yr	Race	Rel Location	Rel Date	# Released	Origin	FL (mm)	Sex	Avg FL	Reader 1	Reader 2
10/12/2005	49208	062786	RM 15	2002	SRCS	Benicia	5/21/2003	105,692	FRH	765	F	92	Brown	Plemons
10/12/2005	49207	062758	RM 15	2002	SRCS	Benicia	4/29/2003	54,318	FRH	835	M	92	Brown	Plemons
10/12/2005	49296	062761	RM 18	2002	SRCS	Benicia	4/29/2003	55,041	FRH	840	M	92	Brown	Plemons
10/12/2005	49212	062761	RM 13	2002	SRCS	Benicia	4/29/2003	55,041	FRH	870	M	92	Brown	Plemons
10/12/2005	49298	062786	RM 17	2002	SRCS	Benicia	5/21/2003	105,692	FRH	870	F	92	Brown	Plemons
10/12/2005	49209	062759	RM 15	2002	SRCS	Benicia	4/29/2003	55,376	FRH	885	M	92	Brown	Plemons
10/13/2005	49214	062786	RM 11	2002	SRCS	Benicia	5/21/2003	105,692	FRH	740	M	92	Brown	Plemons
10/13/2005	49217	062763	RM 22	2002	SRCS	Benicia	4/29/2003	53,522	FRH	770	F	92	Brown	Plemons
10/13/2005	49213	062785	RM 11	2002	SRCS	Benicia	5/21/2003	105,706	FRH	880	M	92	Brown	Plemons
10/18/2005	49222	0601080804	RM 21	2002	FRCS	West Sacramento	4/15/2003	24,505	FRH	740	F	72	Brown	Plemons
10/18/2005	49220	0601080804	RM 22	2002	FRCS	West Sacramento	4/15/2003	24,505	FRH	745	F	72	Brown	Plemons
10/18/2005	49227	0501040406	RM 20	2003	FRCS	West Sacramento	4/15/2004	25,101	FRH	540	M	73	Brown	Plemons
10/18/2005	49226	0601080802	RM 20	2002	FRCS	West Sacramento	5/15/2003	25,292	FRH	700	F	78	Brown	Plemons
10/18/2005	49223	062737	RM 20	2001	FRCS	Wickland Oil Net Pen	4/12/2002	107,348	FRH	735	F	94	Brown	Plemons
10/18/2005	49228	0501020103	RM 19	2002	FRCS	Clarksburg	3/7/2003	47,176	CNFH	865	M	62	Ocean Salmon	n/a
10/18/2005	49227	shed	RM 20	n/a	n/a	n/a	n/a	n/a	n/a	540	M	n/a	Brown	Ocean Salmon
10/18/2005	49225	062787	RM 20	2002	SRCS	Benicia	5/21/2003	105,465	FRH	720	F	92	Brown	Massa
10/18/2005	49224	062787	RM 20	2002	SRCS	Benicia	5/21/2003	105,465	FRH	730	M	92	Brown	Massa
10/18/2005	49216	062757	RM 22	2002	SRCS	Benicia	4/29/2003	54,358	FRH	850	M	92	Brown	Massa
10/18/2005	49215	062762	RM 22	2002	SRCS	Benicia	4/29/2003	54,307	FRH	765	F	93	Brown	Massa
10/18/2005	49218	062762	RM 22	2002	SRCS	Benicia	4/29/2003	54,307	FRH	860	M	93	Brown	Massa
10/18/2005	49221	062760	RM 21	2002	SRCS	Benicia	4/29/2003	54,357	FRH	730	F	92	Brown	Plemons
10/18/2005	49219	062759	RM 22	2002	SRCS	Benicia	4/29/2003	55,376	FRH	770	F	92	Brown	Plemons
10/19/2005	49231	0601080802	RM 15	2002	FRCS	West Sacramento	5/15/2003	25,292	FRH	630	F	78	Brown	Massa
10/19/2005	49232	0601080807	RM 15	2002	FRCS	Port Chicago	5/1/2003	25,209	FRH	830	M	82	Ocean Salmon	n/a
10/19/2005	49234	shed	RM 13	n/a	n/a	n/a	n/a	n/a	n/a	800	F	n/a	Brown	Ocean Salmon
10/19/2005	49235	062758	RM 12	2002	SRCS	Benicia	4/29/2003	54,318	FRH	640	F	92	Brown	Massa
10/19/2005	49233	062758	RM 14	2002	SRCS	Benicia	4/29/2003	54,318	FRH	700	F	92	Brown	Massa
10/19/2005	49229	062760	RM 18	2002	SRCS	Benicia	4/29/2003	54,357	FRH	740	F	92	Brown	Massa
10/19/2005	49320	062785	RM 16	2002	SRCS	Benicia	5/21/2003	105,706	FRH	800	F	92	Brown	Plemons
10/20/2005	49236	062761	RM 11	2002	SRCS	Benicia	4/29/2003	55,041	FRH	820	M	92	Brown	Plemons
10/25/2005	49238	shed	RM 19	n/a	n/a	n/a	n/a	n/a	n/a	270	M	n/a	Brown	Ocean Salmon
10/25/2005	49237	shed	RM 22	n/a	n/a	n/a	n/a	n/a	n/a	730	F	n/a	Brown	Ocean Salmon
10/27/2005	49240	0501020103	RM 09	2002	FRCS	Clarksburg	3/7/2003	47,176	CNFH	970	M	62	Brown	Plemons
10/27/2005	49239	062792	RM 11	2002	SRCS	Live Oak	5/21/2003	108,477	FRH	695	F	94	Brown	Plemons
11/2/2005	49242	0501020105	RM 22	2002	FRCS	Clarksburg	2/21/2003	49,848	CNFH	865	F	53	Brown	Plemons
11/2/2005	49243	062090	RM 22	2001	FRCS	Wickland Oil Net Pen	5/7/2002	263,768	FRH	895	F	94	Brown	Plemons
11/2/2005	49244	shed	RM 20	n/a	n/a	n/a	n/a	n/a	n/a	760	F	n/a	Brown	Ocean Salmon
11/2/2005	49241	shed	RM 22	n/a	n/a	n/a	n/a	n/a	n/a	760	F	n/a	Brown	Ocean Salmon
11/10/2005	49245	shed	RM 11	n/a	n/a	n/a	n/a	n/a	n/a	835	M	n/a	Brown	Ocean Salmon
12/6/2005	74601	shed	RM 22	n/a	n/a	n/a	n/a	n/a	n/a	715	F	n/a	Brown	Ocean Salmon
12/15/2005	74603	062667	RM 05	2001	FRCS	Wickland Oil Net Pen	6/20/2002	237,231	NFH	860	M	96	Brown	Massa