Research Related to Transportation of Juvenile Salmonids on the Columbia and Snake Rivers, 1998

Douglas M. Marsh, Jerrel R. Harmon, Neil N. Paasch, Kenneth L. Thomas, Kenneth W. McIntyre, Benjamin P. Sandford, and Gene M. Matthews

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Fish Ecology Division
Northwest Fisheries Science Center
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EXECUTIVE SUMMARY

In 1998, the National Marine Fisheries Service continued two principal research projects related to smolt transportation: an assessment of survival benefits for steelhead smolts released at Tongue Point in the upper estuary vs. those released at Skamania Light, the standard release site, and an evaluation of transportation vs. inriver migration of spring/summer chinook salmon smolts at Lower Granite Dam.

Estuarine Release-Site Study

We completed the 3-year smolt marking phase of this study in spring 1994 and have now completed the adult recovery phase. Complete adult returns for the 1992 and 1993 smolt marking years were reported by Marsh et al. (1997, 1998), respectively, and those for the 1994 smolt marking year are reported here. Adult returns for the first two study years were much lower than expected, and returns for the 1994 study year continued this trend. Adult returns to lower Granite Dam totaled only 120 (0.20% of the juveniles released) fish from the Tongue Point release and 49 (0.07% of the juveniles released) fish from the Skamania Light release. The Tongue Point to Skamania Light adult-return ratio was 3.0, with a 95% confidence interval of 1.8 to 5.2. These results contradict the findings from 1992 and 1993, when adult return rates for the two release sites were virtually identical. We do not have a satisfactory explanation for these divergent results. It is difficult to understand, however, how releasing steelhead smolts at Tongue Point could result in a threefold higher adult return rate than releasing them at Skamania Light. We presume that the 1994 study results are anomalous. However, the low adult return rates for all three study years precluded any meaningful statistical analysis.

Spring/Summer Chinook Salmon Transportation Study--Lower Granite Dam

In spring 1998, we continued a 3-year marking study initiated in 1995 to evaluate transportation vs. inriver migration of spring/summer chinook salmon smolts at Lower Granite Dam. The study was designed to compare survival to adulthood between smolts transported to below Bonneville Dam with those allowed to migrate downstream volitionally from the Lower Granite Dam tailrace under optimized inriver survival conditions.

From 6 April through 29 June, we PIT tagged 116,849 yearling smolts at Lower Granite Dam. Of this total, 45,441 were transported and released below Bonneville Dam, while 70,651 were released into the Lower Granite Dam tailrace. Post-marking delayed mortality (24-hour) averaged 1.1% for the period. Inriver migrating fish collected at

downstream dams were returned to the river using PIT-tag diversion systems (slide gates).

We also continued the recovery of adult spring/summer chinook salmon from smolts tagged in 1995 and 1996. Adult returns for the 1995 study year were completed at Lower Granite Dam. Of the 929 total adults recovered at the dam, 866 were utilized in the transport to inriver adult return ratio (T/I) analysis. The combined hatchery and wild T/I was 1.7, with a 1.4 to 2.1 95% confidence interval (CI). The T/Is were 1.7 (95% CI 1.4, 2.1) for hatchery fish and 1.9 (95% CI 1.3, 2.9) for wild fish. For inriver migrants that were not detected after release, the T/Is dropped to 1.5 (95% CI 1.2, 2.0) and 1.5 (95% CI 1.2, 2.0) for hatchery and wild fish, respectively. Regression analyses indicated that river flow and spill had little influence on study results.

Adult returns from the 1996 study are preliminary and very poor. Two-ocean adults numbered only 32 transports and 35 inriver migrating fish at Lower Granite Dam. When complete next year, total adult returns will likely be insufficient for meaningful statistical analysis.

Marine Mammal Abrasions--Lower Granite Dam

We continued to observe high abrasion levels from marine mammal teeth and claws on adult spring/summer chinook salmon sampled at Lower Granite Dam in 1998. Prevalence of abrasions was 28.6% on adults examined, with open wounds occurring on about 31.0% of the fish with abrasions.

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ESTUARINE RELEASE-SITE STUDY

Introduction

A growing body of evidence suggests that survival of juvenile salmonids can be enhanced by releasing them into upper areas of estuaries rather than farther upstream in freshwater areas. In Scandinavian countries, releases of hatchery-reared Atlantic salmon (*Salmo salar*) smolts directly into estuarine waters have resulted in increased survival compared to similar releases in fresh water (Gunnerod et al. 1988). Macdonald et al. (1988) and Levings et al. (1989) speculated that increased survival of salmonid juveniles released into estuarine areas was related to decreased predation and stress, increased food availability, and ease of osmoregulation in the estuary. In a 5-year study, Solazzi et al. (1991) released hatchery-reared coho salmon (*O. kisutch*) below Bonneville Dam at Tongue Point (upper intrusion of salt water in the estuary), and at several locations offshore in the Columbia River plume. They reported a smolt-to-adult survival rate 1.6 times higher for fish released at Tongue Point than for the Bonneville Dam release.

Smolts transported from the Snake River to the Skamania Light release site, located immediately below Bonneville Dam, must migrate approximately 150 km through the lower Columbia River before arriving at the estuary. Although the river is free-flowing in this reach, the area is known to harbor large numbers of predators, primarily northern pike-minnow (*Ptychocheilus oregonensis*) and various avian species. The studies mentioned above suggest that mortality from predation alone may be of sufficient magnitude to warrant the additional transport distance.

In spring 1992, the National Marine Fisheries Service (NMFS) began a 3-year study to determine whether marked hatchery and wild steelhead smolts, transported by barge and released in the upper estuary at Tongue Point, would return as adults to Lower Granite Dam in significantly greater numbers than those transported by barge and released at the traditional release site near Skamania Light. In spring 1993, we marked steelhead smolts for the second year of study, and in spring 1994, we marked steelhead smolts for the third and final year of this study. Spring/summer chinook salmon smolts were not included in the study because it was not feasible to mark the tremendously large numbers of this species required to detect expected small differences in survival. Depending upon the results of the study for steelhead, spring/summer chinook salmon may be tested in the future.

Final results for the 1992 and 1993 study years were reported in Marsh et al. (1997) and Marsh et al. (1998), respectively. Here we report final results for the 1994 study year.

Methods

Adult steelhead were recovered in each of the three years following each juvenile release year, with Lower Granite Dam as the primary evaluation point. Statistical analyses of the results were conducted with the methods described by Harmon et al. (1996).

Results and Discussion

Adult returns to Lower Granite Dam from steelhead smolts marked for the release-site study in 1994 are presented in Appendix Tables 1.0 through 2.7. Numbers of returning adults for the two study groups are the same as those reported in Marsh et al. (1997). Consistent with the 1992 and 1993 study years, adult returns for the 1994 study year were much lower than expected. A total of 120 fish from Tongue Point releases (0.20% of the release) and 49 fish from Skamania Light releases (0.07% of the release) were recovered. We constructed 95% confidence intervals (CI) around the mean Tongue Point/Skamania Light adult return ratio (T/S) (Harmon et al. 1996): T/S was 3.0, with a 95% CI of 1.8 to 5.2.

The 1994 results were inconsistent with results in 1992 and 1993, when adult return rates for the two release sites were virtually identical, resulting in T/S ratios of near 1.0. We do not have a satisfactory explanation for these conflicting results. Differences in adult return rates between the two 1994 release groups were relatively consistent over the eight smolt release replicates (released from 16 May to 4 June). This suggested that the overall T/S was not biased upward by one or two poor releases of fish at the Skamania Light release site or by some other transport-related problem for one or two of the releases at this site.

It is difficult to understand, however, how releasing steelhead smolts at Tongue Point could result in threefold higher adult return rate than releasing them roughly 147 km upstream at Skamania Light. If this observation was not an anomaly, then inriver mortality between the two lower river release sites would have to be considerably higher than inriver mortality through the eight lower dams on the Columbia and Snake Rivers, a highly unlikely possibility. Therefore, we presume that the 1994 study results are anomalous. However, the low adult return rates for all three study years preclude meaningful statistical analysis or conclusion regarding the efficacy of releasing steelhead smolts at Tongue Point.

Adult returns rates were much lower than expected for all three years of this study but were consistent with the overall poor adult returns observed for both steelhead and spring/summer chinook salmon from the same smolt migration years. Low river flows and higher-than-normal water temperatures during spring 1992 may have contributed to

the abysmal adult returns for that study year. However, we believe that periodic, exceptionally unfavorable estuary and/or early-ocean conditions (Ware and Thomson 1991, Beamish and Bouillon 1993, Lawson 1993, Hsieh et al. 1995, Roemmich and McGowan 1995) continued as the primary causative factors of poor adult returns, as posited by Achord et al. (1992) and Harmon et al. (1996).

TRANSPORTATION VS. INRIVER MIGRATION OF PIT-TAGGED SPRING/SUMMER CHINOOK SALMON SMOLTS--LOWER GRANITE DAM

Introduction

Research to evaluate the effects of transporting juvenile salmonids around dams began 30 years ago. Evaluations of transported yearling spring/summer chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*O. mykiss*) were conducted from various Snake River dams from 1968 through 1980. In addition, transportation of steelhead and subyearling summer/fall chinook salmon smolts was evaluated at McNary Dam on the Columbia River from 1978 through 1983.

Based on adult returns, results of these earlier transportation studies varied by species. For steelhead and subyearling chinook salmon, results consistently showed that significantly more marked/transported fish returned to the point of release than did marked fish released to migrate inriver. However, for yearling chinook salmon, study results were less consistent. Results from the earliest studies, during 1968-73, demonstrated conclusively that significantly more marked fish that were transported returned to the point of marking than did marked fish released to migrate inriver (Ebel et al. 1973, Slatick et al. 1975, Ebel 1980). However, most studies conducted during 1975-80 yielded inconclusive results because very low numbers of marked adults returned from either group (Park 1985).

Matthews (1992) postulated that severe physical trauma suffered by many smolts during collection and marking was a primary cause of low returns of spring/summer chinook salmon adults during the 1975-80 studies. From 1981 through 1984, the U.S. Army Corps of Engineers (COE) and fisheries agencies addressed this problem by improving many features of the smolt collection and bypass systems at dams, particularly at Lower Granite Dam. In addition, the preanesthetic system of handling and marking smolts (Matthews et al. 1986) was introduced at Lower Granite Dam in 1983. This system virtually eliminated the major physical trauma associated with the handling and marking process. All indications suggest that the modifications and improvements increased survival substantially.

A study to reevaluate smolt transportation of yearling chinook salmon migrants from the Snake River after substantial modifications to collection and bypass facilities were made was initiated at Lower Granite Dam in 1986. Spring/summer chinook salmon smolts were marked with CWTs and freeze brands in 1986 and 1989 at Lower Granite Dam. Approximately one-half of the marked smolts were placed in barges at Lower Granite Dam, and the remainder were trucked to a release site downstream from Little Goose Dam to continue their inriver migration.

Although significantly more barged fish returned as adults than those that migrated inriver, concern was expressed that the studies were compromised by transporting the inriver fish to below Little Goose Dam. The studies were further criticized because a small fraction of inriver migrating fish was inadvertently transported from McNary Dam and because inriver migration conditions at the time of the studies were not considered optimal. Thus, critics argued that inriver migrating fish were not afforded the full opportunity to remain inriver and survive at the highest rates possible.

Since 1989, a succession of low-flow years and ongoing construction and operation of a new bypass and collection system at Lower Monumental Dam have impeded further attempts to conduct transportation research using CWTs and freeze brands from Lower Granite Dam. However, a major fish-marking technology advance, the passive integrated transponder (PIT) tag (Prentice et al. 1990), along with recently developed PIT-tag diversion systems (Matthews et al. 1990, 1992; Achord et al. 1992; Harmon et al. 1995) installed at collector dams downstream from Lower Granite Dam, have provided the opportunity to conduct contemporary transportation studies directly from Lower Granite Dam.

The combination of these technologies allows release of inriver-migrating study fish directly into the Lower Granite Dam tailrace because a high percentage of the fish collected inadvertently at any downstream dam can now be returned to the river rather than transported. Furthermore, the collection history and final disposition of each inriver-migrating fish can now be recorded, so that individual records of fish inadvertently transported from any downstream dam can be eliminated or separated from the analysis.

The primary objective of this study is to compare adult returns to Lower Granite Dam between PIT-tagged spring/summer chinook salmon smolts transported from Lower Granite Dam to below Bonneville Dam and those allowed to migrate inriver from the tailrace of the dam under optimal conditions for inriver survival. In addition, the number of PIT-tagged fish released in-river will allow smolt-survival estimations between the Lower Granite and McNary Dam tailraces using the Single-Release Model (Iwamoto et al. 1994). This study requires tagging spring/summer chinook salmon smolts for a minimum of three years, not necessarily in succession. Here we report tagging results and other data from inriver-migrating study fish released during the third study year in 1998, and adult returns from the 1995 and 1996 study years.

Methods

Smolt Sampling and Tagging

During spring 1998, we tagged spring/summer chinook salmon smolts at Lower Granite Dam for the third year of a 3-year transportation study. Unlike the previous two years of marking (Marsh et al. 1996, 1997), we marked fish internally with standard PIT tags only (no imbedded coded-wire tag). As in previous years, we loaded some fish onto barges or trucks for transport and release below Bonneville Dam and released others directly into the Lower Granite Dam tailrace to continue their seaward migration.

For the initial tagging year (1995), we designed the study to test a minimum transport-to-inriver adult return survival ratio (T/I) of 1.3. For that year, Muir et al. (1996) estimated that inriver survival from Lower Granite Dam tailrace to McNary Dam tailrace was approximately 70%. If the per project survival rate remained at this level through the three remaining dams and reservoirs, a T/I of approximately 1.8 would be expected for adults returning to Lower Granite Dam. Based on this information, we adjusted the study design in 1996 so that the test would be sensitive enough to detect a minimum T/I of 1.5. In 1998, we again marked fish to test a minimum T/I of 1.5.

We calculated the numbers of marked fish required in both study groups using the following notation:

N_i = number of tagged inriver migrants

N_t = number of tagged transported fish

n_i = number of inriver migrants recovered as adults

n_t = number of transported fish recovered as adults

$p_i = n_i/N_i$ = proportion of inriver migrants returning as adults

$p_t = n_t/N_t$ = proportion of transported fish returning as adults

The T/I ratio (R) was estimated by

$$R = p_t / p_i ,$$

the variance of R (V(R)) was given by

$$V(R) \approx R^2 \left(\frac{1}{n_i} + \frac{1}{n_t}\right) ,$$

and the relative variance of R (RV) by

$$RV = \frac{V(R)}{R^2} \approx \frac{1}{n_i} + \frac{1}{n_t} .$$

The value for RV is the square of the coefficient of variation (CV). The sample sizes were then calculated by inserting the desired CV into this equation. The CV specifies the standard error as a percent of the ratio itself.

To maximize precision for a given sample size, we calculated the numbers of study fish to provide about equal numbers of expected adults returning in the transport and inriver migrant groups (i.e., $n_i = n_t$). By specifying the value of RV, the required number of returning adults was obtained from

$$RV \approx 1/n_i + 1/n_t = 2/n,$$

where $n = n_i = n_t$, and n was estimated from $n \approx 2/RV$. For spring chinook salmon, we desired a CV of 15.0% (S.E. = 0.23), and the number required in each returning group was

$$n \approx 2/RV = 2/(0.15)^2 = 2/0.0225 = 90.$$

We estimated a minimum adult return of transported fish to Lower Granite Dam of 0.2% for the 1996 smolt outmigration; thus, the required number of releases in this group was given as

$$N_t \approx n_t/p_t = 90/0.002 = 45{,}000.$$

If R is 1.5, then the required number of inriver migrants (N_i) was given as

$$N_i \approx N_t(1.5) = 45{,}000(1.5) = 67{,}500.$$

Thus, the total numbers of PIT-tagged spring chinook salmon required were 45,000 transports and 67,500 inriver migrants.

The basic collection and handling methodology followed that described by Marsh et al. (1996). As in 1996, we expected the spring/summer chinook salmon-to-steelhead ratio of collected smolts to be about 4-5 times smaller in 1998 than in 1995. A method of removing excess steelhead before they were anesthetized was developed in 1996 (Marsh et al. 1997). By employing this method, we were again able to bypass 60-80% of the steelhead back to a raceway without anesthetizing and handling them in the sorting trailer.

Inriver Migration

Study fish detected at Little Goose and Lower Monumental Dams were returned to the river. Marsh et al. (1996) provided details on how these fish were tracked as they passed through the collection systems at dams downstream from Lower Granite Dam. Prior to 1 June 1998, all fish (tagged and nontagged) collected at McNary Dam were bypassed to the river after passing through PIT-tag detectors; no fish were transported

from McNary Dam during this time. On 1 June, collection and transport operations began at McNary Dam, and the PIT-tag diversion system was used thereafter to return PIT-tagged fish back to the river.

We removed from the inriver data set records of fish that were detected at a dam but not detected later on a return-to-the-river detector coil at that dam. At the end of the smolt migration, we obtained from COE project biologists information regarding periods of time at each dam when all fish were bypassed to the river from raceways. We added back to the inriver data set records of fish whose final detections were on coils leading to raceways during these periods at each dam. At each dam, any fish detected exiting the fish and debris separator but not detected elsewhere was removed from the inriver data set. Fish whose final detections were on coils leading to sampling rooms were also removed from the inriver data set.

Adult Recoveries and Data Analysis

Adults are recovered in each of three years following the year when study fish were tagged and released as juveniles. The procedures for data analysis described by Marsh et al. (1996) will be modified to include estimation methodologies as described in Sandford and Smith (In prep.). Their methods adjusted the observed numbers of fish detected and transported or bypassed at downstream dams or not detected at all, for estimated bias associated with mortality between dams. The methods apportion the number of fish released at Lower Granite Dam into various downstream detection-history categories based on estimated detection percentages at the downstream dams.

Confidence intervals (95%) for various T/I ratios were calculated as follows. Release days were pooled until a minimum of 2 adults returned in both transport and inriver categories. Empirical variance estimates were calculated using these temporal replicates. Daily (or multiple-day pooled) facility collection numbers were used to weight the replicates to provide weighted seasonal T/I ratios applicable to the untagged population. The weighted mean ratios and confidence limits were then constructed on the natural logarithm scale (i.e., such ratio data were assumed to be log-normally distributed) and back-transformed..

For some datasets, there appeared to be a linear relationship of T/I ratio and release date and/or total river flow. We used the linear regression of T/I ratio on these explanatory variables to examine possible relationships that would account for observed fairly high temporal variability.

Results and Discussion

Smolt Sampling and Tagging

We sampled and PIT-tagged fish for the study from 6 April through 29 June. During this period, we tagged 116,849 yearling spring/summer chinook salmon (Table 1 and Appendix Tables 3.0 and 4.0), or 7.4% of the total number of yearling spring/summer chinook salmon collected at Lower Granite Dam in 1998. The number of fish tagged daily ranged from 9 to 8,550. Of the 116,849 fish tagged, 70,651 were released into the Lower Granite Dam tailrace and 45,441 were transported to below Bonneville Dam. Hatchery and wild fish proportions were nearly identical between the two treatment groups (Table 1).

Table 1. Numbers and mean fork length of wild and hatchery spring/summer chinook salmon smolts PIT tagged and released inriver at Lower Granite Dam or transported below Bonneville Dam, 1998.

	Hatchery			Wild			
	number	percent	mean fork length (mm)	number	percent	mean fork length (mm)	Totals
Released inriver							
Tagged	61,124	85.6	135.8	10,279	14.4	115.7	71,403
Released	60,613	85.8	135.8	10,038	14.2	115.8	70,651
Transported							
Tagged	38,757	85.3	136.0	6,689	14.7	115.6	45,446
Released	38,752	85.3	136.0	6,689	14.7	115.6	45,441

Based on counts from the inriver holding tank, post-marking delayed mortality (24 hour) averaged 1.1% over the entire tagging season. This value is exceptionally low, considering that we tagged virtually every fish sampled. Only a few fish that were either very severely injured or exhibited obvious symptoms of gross bacterial kidney disease were rejected for tagging. By tracking each fish's unique PIT-tag code, we determined the condition of each mortality when it was tagged. Descaling appeared to have the

largest impact on post-marking delayed mortality. When tagged, 2.7% of all fish were recorded as descaled; however, 14.8% of the 24-h delayed mortalities had been recorded as descaled during tagging.

Our inability to efficiently recover post-marking mortalities from the transport holding raceways introduced a small bias into the study. We collected and removed from the inriver data set the records from virtually all mortalities of fish marked for the inriver releases, but only an unknown fraction of those from mortalities of fish marked for transport. Assuming that marked transport fish experienced the same delayed mortality rate prior to release as marked inriver fish, approximately 500 (1.1%) marked transport fish that we recorded as released alive were actually released postmortem. This bias will slightly skew the adult return T/I downward.

We recorded fork lengths of all of the fish during tagging. During the course of marking, we encountered fish that were obviously of hatchery origin, but had partial or no fin clips. In 1996, we also observed this problem and investigated whether fork length could be used as an indicator of whether a fish was of wild or hatchery origin. The resulting analysis, described by Marsh et al. (1997) and applied to this year's data, showed that a fork length of 123 mm could be used as a maximum length for wild fish. Therefore, during our 1998 marking, we classified any unclipped fish longer than 123 mm as of hatchery origin.

Inriver Migration

As inriver study fish continued their seaward migration, some were re-collected at dams downstream from Lower Granite Dam. Of the 70,651 inriver fish released, 49,631 (70.3%) were detected at least once at a downstream collector dam (Table 2 and Appendix Table 5.0). As expected, the largest number of first-time detections occurred at Little Goose Dam.

Table 2. Numbers and percentages of spring/summer chinook salmon smolts PIT tagged and released at Lower Granite Dam in spring 1998 and subsequently detected at Little Goose, Lower Monumental, and McNary Dams. Percentages are based on the total numbers of inriver fish released.

Dam	First detections	Second detections	Third detections
Little Goose Dam			
Number detected	30,107		
% of release	42.6		
Lower Monumental Dam			
Numbers detected	11,869	8,806	
% of release	16.8	12.5	
McNary Dam			
Numbers detected	7,655	8,138	2,226
% of release	10.8	11.5	3.1
Totals			
Numbers detected	49,631	16,944	2,226
% of release	70.3	24.0	3.1

Table 3 (Appendix Tables 6.0 through 8.0) shows total numbers and ultimate dispositions of inriver fish detected at each dam.

The PIT-tag diversion system at Little Goose Dam again returned PIT-tagged fish to the river with the lowest efficiency of the three diversion systems located at collector dams downstream from Lower Granite Dam. By comparing total facility detections with post-diversion detections on coils leading to the river, we determined that 7.2% of the fish collected at Little Goose Dam were not diverted back to the river, and we removed records of these fish from the inriver data set.

Table 3. Final disposition of PIT-tagged spring/summer chinook salmon smolts released at Lower Granite Dam in spring 1998 and subsequently detected at Little Goose, Lower Monumental, and McNary Dams (includes definitions for final dispositions).

	Number of smolts		
Final disposition*	Little Goose Dam	Lower Monumental Dam	McNary Dam
River	27,942	19,620	9,415
Bypassed	0	36	8,599
Sample	312	146	2
Transported	1,781	843	2
Unknown	72	30	0
Totals			
Observed	30,107	20,675	18,018
Removed from study	2,165	1,019	4
Removed from study (%)	7.2	4.9	< 0.1
To river	27,942	19,656	18,012

*Definitions

Disposition	Last coil observation	Special circumstances	Ultimate destination	Study status
River	Diversion or river return		River	Retained
Bypassed	Raceway	Raceway emptied to river	River	Retained
Sample	Sample		Unknown	Removed
Transported	Raceway		Barge/Truck	Removed
Unknown	Separator		Unknown	Removed

Using the same method at Lower Monumental Dam, we determined that 4.9% of the collected fish fell into this category. We added records back to the inriver data set from fish detected on coils leading to raceways during periods when all fish were returned to the river at both dams. No fish were returned to the river from the raceways at Little Goose Dam, and only 36 fish were returned to the river from raceways at Lower Monumental Dam. Since all fish were returned to the river at McNary Dam prior to 1 June, very few records of the inriver study fish collected at this dam required removal from the inriver data set.

From 7 April through 30 June, we released 70,651 PIT-tagged spring/summer chinook salmon smolts into the Lower Granite Dam tailrace. Based upon detections at John Day and Bonneville Dams, we estimated that approximately 76.1% of these fish survived to the McNary Dam tailrace.

Adult Recoveries and Data Analysis

1995 Study Year--At Lower Granite Dam in 1998, we recovered age-3-ocean adult spring/summer chinook salmon from the 1995 study year (Table 4 and Appendix Tables 9.0 through 10.2). The first and last adults were recorded at the dam on 21 April and 16 August, respectively.

We recovered 146 age-3-ocean adults at the dam, bringing the total number of jacks and adults recovered from the 1995 releases to 929. However, we eliminated 63 fish from the analysis for a variety of reasons including PIT tags that were not recorded during smolt tagging, adult identification that was limited to the freeze brand only, and inriver study fish that were transported after being collected at dams downstream from Lower Granite Dam. Of the 866 fish remaining in the analysis, 541 and 325 were from the transport and inriver releases, respectively.

Overall smolt-to-adult return rates (SARs) to Lower Granite Dam were 0.50% for the transported group and 0.26% for all inriver fish (including those bypassed once or more than once downstream from Lower Granite Dam), for an overall T/I of 1.9 (95% CI 1.8, 2.1). When we compared the transport SAR to the SAR of inriver fish never again detected at a downstream dam after release from Lower Granite Dam, the overall T/I dropped to 1.4 (95% CI 1.1, 1.8).

Hatchery and wild fish accounted for 80.1 and 19.9% of the returning adults, respectively. When tagged as smolts, the percentages of hatchery and wild fish tagged were 77 and 23%, respectively (Marsh et al. 1996), although the wild fraction was bolstered to some extent because some hatchery fish were not adipose-fin-clipped.

Transport SARs were 0.54 for hatchery fish and 0.38 for wild fish, while SARs for all inriver fish were 0.28 for hatchery fish and 0.18 for wild fish. The respective overall T/Is for hatchery and wild fish were 1.9 (95% CI 1.7, 2.1) and 2.1 (95% CI 1.7, 2.6).

Table 4. Preliminary summary of recovered adult spring/summer chinook salmon marked at Lower Granite Dam in 1995 for the transportation study (recoveries through 19 October 1998). Jaw tag recoveries above Lower Granite Dam are all listed (recoveries reported through 28 October 1998).

		Adult returns at Lower Granite Dam		Jaw tag recoveries			
Group[a]	Number released	Number	%	Hatcheries	Sports fishery	Spawning grounds	Traps
1995							
Transport							
Hatchery	83,354	450	0.54	98	10	2[b]	36
Wild	24,102	91	0.38	5	0	4	3
Total	107,456	541	0.50	103	10	6	39
Inriver[c]							
Hatchery	97,294	276	0.28	79	10	0	25
Wild	27,491	49	0.18	6	1	1	2
Total	124,785	325	0.26	85	11	1	27
Transported inrivers[c]							
Hatchery	6,278	25	0.40	4	0	1[b]	1
Wild	3,861	15	0.39	0	0	0	0
Total	10,139	40	0.39	4	0	1	1

[a] Based upon fin clips, fish were classified as hatchery, wild, or unknown when tagged as juveniles. However, many fish were likely mis-classified because high numbers of hatchery fish were poorly fin clipped or received no fin clips (see Marsh et al. 1997).

[b] Each of these catagories contains one carcass found in the mainstem Snake River by rafters.

[c] Adjusted as described in Sandford and Smith (In prep.).

The seasonal T/Is indicated a transportation benefit for yearling chinook salmon in 1995. However, the study design and PIT-tag data allow more refined analyses of SARs and T/Is than a simple calculation of a seasonal average. Calculating the statistics for groups of fish by the period when they were marked as smolts revealed an interesting time trend in the data. For both hatchery and wild fish tagged before early May, SARs were low for both the transport and downstream-migrant groups, and T/Is approximated 1.0 (Fig. 1).

Transport SARs increased abruptly and dramatically in early May. The SAR for the transported hatchery group tagged on 6 May was approximately 250% of the SAR from groups tagged previously. However, SARs for the inriver group did not increase coincidently but remained relatively static. Resulting T/Is for hatchery fish tagged during the later period ranged between 2.0 and 8.0. Similarly, SARs for wild transported fish increased abruptly by roughly 700% on 9 May and remained at the higher level for the rest of the season. Inriver wild SARs also remained relatively static, trending slightly downward throughout the season. Finally, SARs for all study groups tended to be relatively low during the latter part of April, coincidental with peak fish abundance at Lower Granite Dam.

When we adjusted the T/Is for the observed temporal differences in SARs and for the daily collection rates at Lower Granite Dam prior to 12 May, the overall T/I ratio decreased to 1.7 (95% CI 1.4, 2.1) when compared to all inriver fish, while the hatchery and wild T/Is decreased to 1.7 (95% CI 1.4, 2.1) and 1.9 (95% CI 1.3, 2.9), respectively. When transports were compared to inriver fish not observed at a Snake River dam below Lower Granite Dam, the overall T/I ratio was 1.5 (95% CI 1.2, 1.9), while the hatchery and wild T/Is decreased to 1.5 (95% CI 1.2, 2.0) and 1.5 (95% CI 1.2, 2.0), respectively.

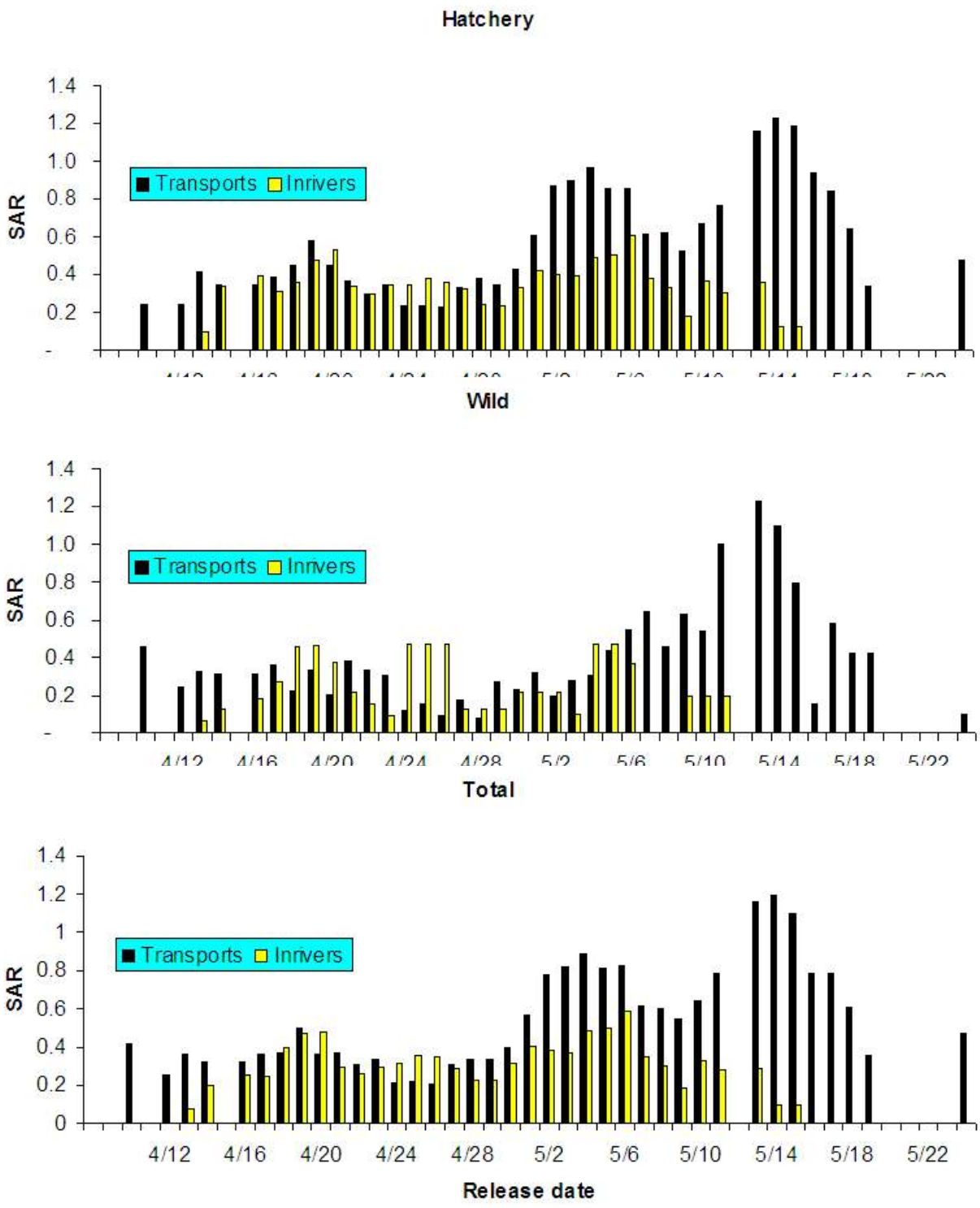

Figure 1. Smolt-to-adult-return rates (SARs) vs date of release. Data are presented as 3-day running averages and data after 24 May are pooled.

We had to pool all of the data after 11 May because of the small number of inriver adult returns. The overall, hatchery, and wild T/Is after 11 May were 18.7, 30.2, and 11.1, respectively, when compared to all inriver fish. When compared to inriver fish not observed at a Snake River dam below Lower Granite Dam, the overall, and hatchery T/Is were 14.6 and 11.3. No wild adults returned from this inriver group (969 smolts), so no T/I could be calculated. The SAR for transported fish after 11 May was 0.68%.

We regressed T/Is and inriver SARs against Snake River flows in 1995. In these analyses, we pooled adult returns in 5-day groups released through 12 May 1995. Releases after 12 May were not included in the regressions because very few inriver adults returned from the groups of smolts marked after that time. Both hatchery and wild inriver SARs showed a slightly negative relationship to increasing flow (Fig. 2). Similarly, T/Is for both groups unexpectedly increased as flow increased (Fig. 3). River flow and spill volumes appeared to exert little influence on 1995 study results.

The common belief that survival of the inriver-migrating group has the greatest influence on T/I values was not supported by the above analysis, at least during this study year. On the contrary, T/I values were driven more by SARs of transported fish. Moreover, study results indicated that something occurred virtually overnight in 1995 that greatly benefitted transported fish, but not their inriver-migrating cohorts. Differences between the two groups in arrival timing below Bonneville Dam suggested that survival below the dam was relatively low until early May and then increased abruptly.

Past studies have documented little mortality during actual transport, and recent juvenile radio-tag studies have indicated rapid migration and high survival to the Columbia River estuary after release. Transported fish arrived below Bonneville Dam about 3 days post-marking, while inriver-migrating fish arrived at a similar point 2-3 weeks later. Thus many of the transported study fish (approximately one-half) arrived below Bonneville Dam in April or early May while the great majority of inriver-migrating study fish marked concurrently did not arrive there until after early to mid-May when more favorable survival conditions apparently existed downstream from Bonneville Dam.

A similar SAR pattern occurred for smolts transported during the 1990 outmigration (Harmon et al. 1993), although survival increased much later in May 1990 than in May 1995. Transport SARs increased by roughly 400 to 600% after mid-May. The exact timing of the survival increase was harder to pinpoint in 1990 because fish were batch-marked with CWTs and brands. The same mass mark was used over a period of days, so, the exact day a fish with a particular brand was marked was unknown.

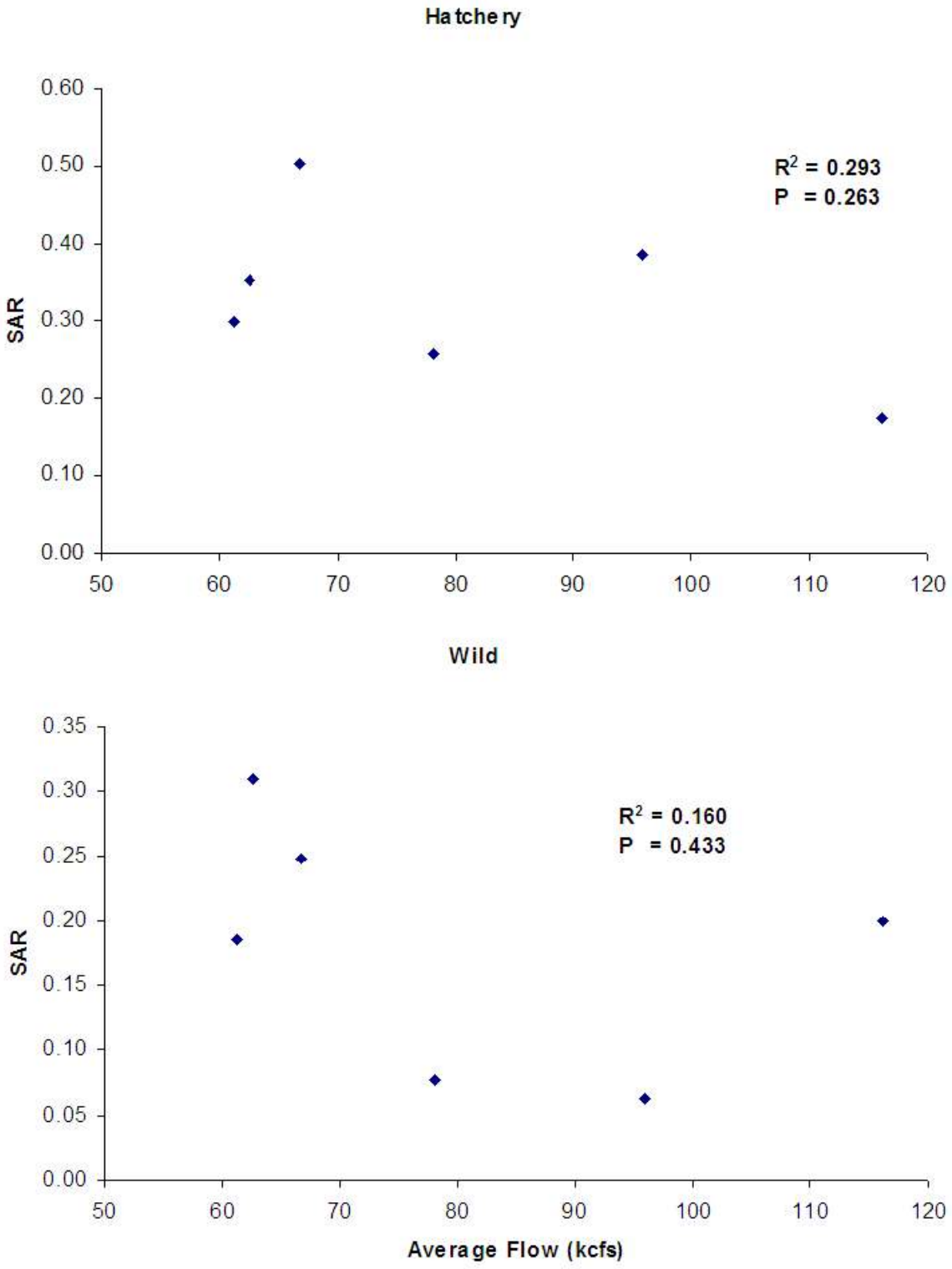

Figure 2 Inriver smolt-to-adult return ratios (SARs) versus flow (pooled over 5 days).

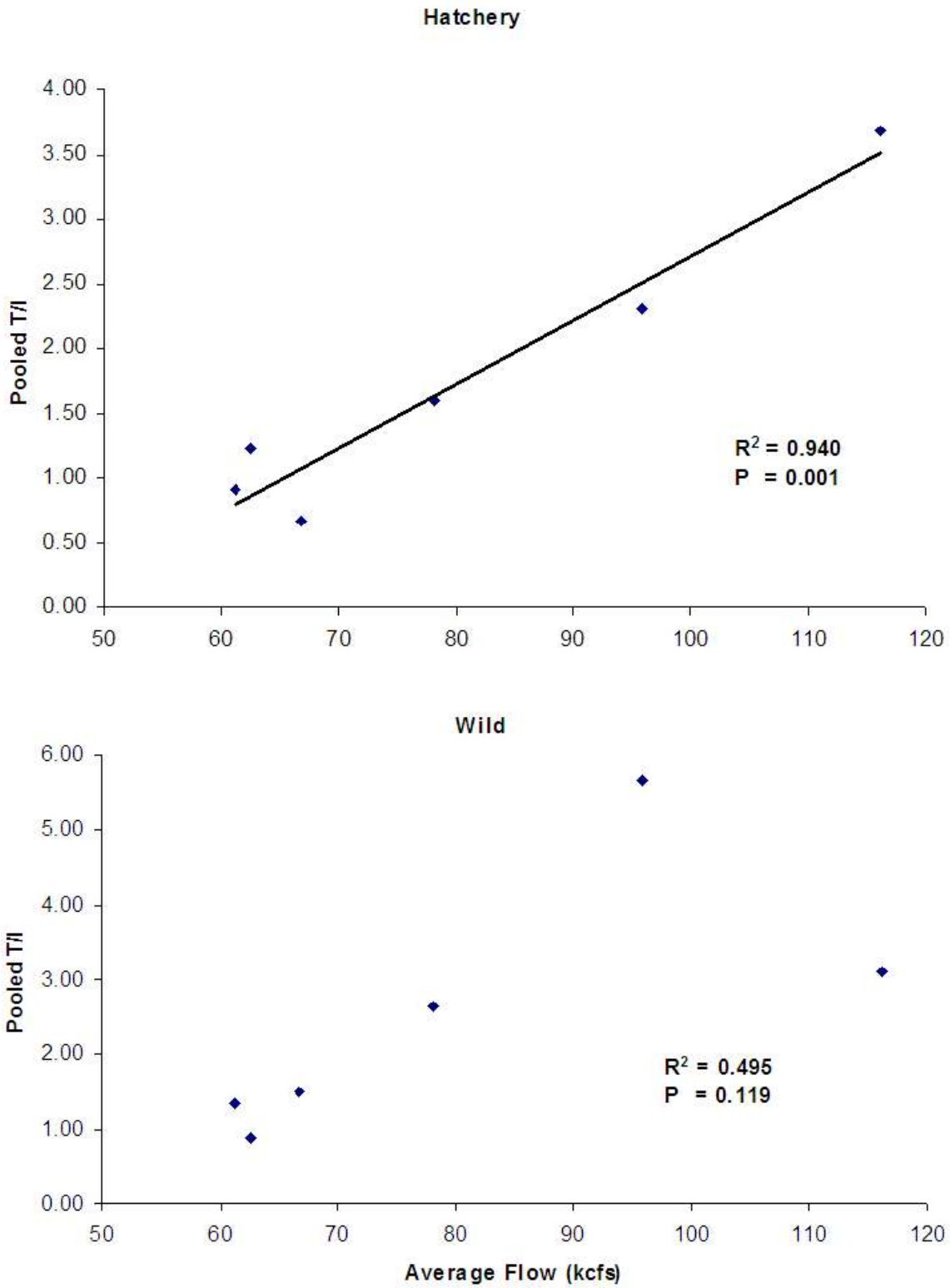

Figure 3. Transport/Inriver ratios (T/Is) versus flow (pooled over 5 days).

The estimated SAR was 3.3% for wild yearling chinook salmon transported during the first week of June 1990. Unfortunately, an inriver-migrating group was not marked that year for comparison. This within-year SAR pattern was not apparent in earlier studies; however, detection of time trends in SARs or T/Is was hampered by inconsistent marking and replication strategies.

To our knowledge, there are no apparent temporal differences in migrational behavior, physiology, disease, or transport methodologies to explain the abrupt and sustained SAR increases for transported fish during the second half of the 1990 and 1995 smolt migrations. The pattern is more likely related to arrival timing of smolts in the estuary and near-ocean environments in recent years. Conditions that might vary annually in these environments include predator abundance and dynamics (birds, fish, and marine mammals), alternative prey for those predators, (anchovies, herring, and sand lance) and abundance of salmonid prey (enhanced survival of fast-growing, robust smolts). Changes in marine predator/prey dynamics coincidental with the 1976/77 oceanic regime shift (Hare et al. 1999) particularly early in ocean residence (Hargreaves 1997) likely play a major role in the recent low annual SARs and high within- and between-year variations in SARs.

If the SAR pattern observed in 1990 and 1995 continues into the future, it would have important implications for potential management actions. Transportation of smolts early in the season would provide little to no benefit. Logic, however, suggests that the 1990 and 1995 results are probably atypical over longer time frames. If survival were invariably poor or disadvantageous for early-migrating smolts, it is unlikely that early migration would be a common attribute of these wild salmon populations, as has been documented in recent years (Achord et al. 1997). Surely, natural selection pressures would have seriously impeded, if not altogether prevented, the development of early migration timing.

During tagging in 1995, we recorded 3.7% of the smolts as descaled (Marsh et al. 1996). However, 4.5% of returning adults had been recorded as descaled at the time of smolt tagging. This indicated that, while descaling played an important role in short-term survival (20% of our 1.6% 24-hour mortality was recorded as having been descaled at tagging), there appears to have been no long-term effect of descaling on survival to adulthood.

The modified PIT tag (containing a blank CWT) (Marsh et al. 1996) performed well. Of the 896 adults passing through the CWT detectors while they were active, 888 (99.1%) were diverted into the adult trap located in the Lower Granite Dam fish ladder. Also, the PIT tag and the in-ladder adult PIT-tag detection system were highly efficient.

Of the 906 returning adults, 892 (98.5%) were detected by both the in-ladder PIT-tag detectors in the trap and by a hand-held detector during a later physical examination of the fish. The remaining fourteen fish were detected only by the hand-held detector.

1996 Study Year--In 1998, we recovered age-2-ocean spring/summer chinook salmon adults tagged as smolts at Lower Granite Dam in 1996 (Table 5 and Appendix Tables 11.0 and 12.2). The first adult was observed on 22 April and the last on 16 September 1998.

We recovered 79 age-2-ocean adults during 1998. However, we eliminated 4 fish from the analysis for a variety of reasons including PIT tags that had not been recorded during smolt tagging, identification of adults that was restricted to the freeze brand, and inriver study fish that had been transported at dams downstream from Lower Granite Dam. Also, as noted in Marsh et. al 1997, fish marked on 25 April required removal from the study because an undetermined number of fish marked for transport were inadvertently released to the river during barge-loading on the morning of 26 April. This resulted in the removal of an additional 3 adults from the total returns.

Of these 72 adults, 33 were transported as smolts from Lower Granite Dam and 39 were released as smolts into the tailrace of Lower Granite Dam. Of the latter adults, two were collected as smolts at a downstream dam. One of these was never observed on PIT-tag detectors leading back to the river and the other was observed on PIT-tag detectors leading to transportation. Therefore, we removed both of them from the analysis of the inriver study group. Based upon returns (including jacks) of 38 transported and 41 inriver adults, the combined hatchery and wild preliminary T/I was 1.3. A 95% CI will be calculated when adult returns are complete in 1999.

Hatchery and wild fish accounted for 86.9 and 13.1% of the returning adults, respectively. When marked as smolts, the percentages of hatchery and wild fish tagged were 81.6 and 19.4, respectively (Marsh et al. 1997). As a result, age-2-ocean SARs were unexpectedly higher for hatchery than wild fish. Transport SARs were 0.09% for hatchery fish and 0.07% for wild fish, while inriver SARs were 0.07% for hatchery fish and 0.03% for wild fish. The respective overall T/Is for hatchery and wild fish were 1.2 and 2.3. Inriver SARs for fish bypassed only at Lower Granite Dam were 0.11% for hatchery fish and 0.08% for wild fish. The respective T/Is for hatchery and wild fish were 0.8 and 0.9. These data are preliminary, and 95% CIs will be calculated for both groups when adult returns are complete in 1999.

Table 5. Preliminary summary of recovered adult spring/summer chinook salmon marked at Lower Granite Dam in 1996 for the transportation study (recoveries through 19 October 1998). Jaw tag recoveries above Lower Granite Dam are all listed (recoveries reported through 28 October 1998).

Group[a]	Number released	Adult returns at Lower Granite Dam		Jaw tag recoveries			
		Number	%	Hatcheries	Sports fishery	Spawning grounds	Traps
1996[b]							
Transport							
Hatchery	35,858	31	0.09	3	0	0	2
Wild	8,048	6	0.07	0	0	0	0
Unknown	32	0	0	0	0	0	0
Total	43,938	37	0.08	3	0	0	2
Inriver							
Hatchery	50,595	36	0.07	3	2	1	0
Wild	12,538	4	0.03	0	0	0	0
Unknown	83	0	0	0	0	0	0
Total	63,216	40	0.06	3	2	1	0
Transported inrivers							
Hatchery	1,564	2	0.13	1	0	0	0
Wild	489	0	0	0	0	0	0
Unknown	7	0	0	0	0	0	0
Total	2,060	2	0.10	1	0	0	0

a Based upon fin clips, fish were classified as hatchery, wild, or unknown when tagged as juveniles. However, many fish were likely mis-classified because high numbers of hatchery fish were poorly fin clipped or received no fin clips (see Marsh et al. 1997).

b Three adults (1 inriver and 2 transports) returned from the 25 April tagging but are not counted here. All fish marked on that day were removed from the study due to barge loading problems (see Marsh et al. 1997).

MARINE MAMMAL ABRASIONS-LOWER GRANITE DAM

We continued to monitor the prevalence of marine mammal tooth and claw abrasions on adult spring/summer chinook salmon at Lower Granite Dam during 1998. Prevalence of abrasions averaged 28.6% on adults examined, with 31.0% of abrasions consisting of open wounds of varying severity (Table 6). As in the past, abrasion prevalence was generally higher during the early segment of the run (Matthews et al. 1992; Achord et al. 1992; Harmon et al. 1993, 1995, 1996; Marsh et al. 1996, 1997, 1998). The extent of abrasion prevalence suggests that marine mammals may seriously impact depressed Snake River spring/summer chinook salmon populations (and likely other stocks as well) as they enter and pass through the lower Columbia River.

Table 6. Weekly prevalence (9 April to 9 August) of marine mammal abrasions on adult spring/summer chinook salmon at Lower Granite Dam in 1998.

Date	Sample size	Incidence
9-12 April	1	0.0
13-19 April	12	50.0
20-26 April	127	44.1
27 April-3 May	327	36.1
4-10 May	798	27.3
11-17 May	583	26.2
18-24 May	268	31.7
25-31 May	28	35.7
1-7 June	158	22.8
8-14 June	390	27.2
15-21 June	391	30.9
22-28 June	306	31.0
29 June-5 July	198	24.7
6-12 July	97	15.5
13-19 July	48	10.4
20-26 July	22	0.0
27 July-2 August	4	0.0
3-9 August	1	100.0
Total	3,759	Average 28.6*

* Open wounds were associated with 31% of the abrasions.

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APPENDIX: Data Tables

Appendix Table 1.0.--Summary of all recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point in 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9401A 9401B 9401C 9401D 9401E 9401F 9401G 9401H
1994 L. GRANITE LGR RELEASE SITE: TONGUE POINT STEELHEAD
Brands Used: RAV 1 RAV 2 RAV 3 RAV 4 RAPP1 RAPP2 RASU2 RASU3
Wire Codes Used: 233004 232357 232424 232437 232439 232441 232443 233017
NUMBER RELEASED: 60036

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	65	55	0	120	0.200
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	13	7	0	20	0.033
CLEARWATER R.	0	0	4	0	4	0.007
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES						
DWORSHAK H.	0	5	0	0	5	0.008
PAHSIMEROI H.	0	1	0	0	1	0.002
DESCHUTES R. HATCHERIES	0	1	0	0	1	0.002
WALLOWA H.	0	3	1	0	4	0.007
SAWTOOTH H. AND TRAP	0	2	0	0	2	0.003
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	90	67	0	157	0.262
PERCENT OF RECOVERY %	0.0	57.3	42.7	0.0		

Appendix Table 1.1.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point on 16 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9401A
1994 L.GRANITE LGR RELEASE SITE: TONGUE POINT STEELHEAD
Brands Used: RAV 1
Wire Codes Used: 233004
NUMBER RELEASED: 9302

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	18	15	0	33	0.355
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	3	1	0	4	0.043
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES						
DWORSHAK H.	0	1	0	0	1	0.011
DESCHUTES R. HATCHERIES	0	1	0	0	1	0.011
SAWTOOTH H. AND TRAP	0	1	0	0	1	0.011
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	24	16	0	40	0.430
PERCENT OF RECOVERY	%	0.0	60.0	40.0		0.0

Appendix Table 1.2.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point on 18 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9401B
1994 L.GRANITE LGR RELEASE SITE TONGUE POINT STEELHEAD
Brands Used: RAV 2
Wire Codes Used: 232357
NUMBER RELEASED: 8796

		YEAR OF RETURN					
RECOVERY AREA		1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
LOWER GRANITE TRAP		0	10	7	0	17	0.193
OCEAN FISHERIES		0	0	0	0	0	0.000
RIVER SPORT							
SNAKE R.	0	1	0	0	1	0.011	
CLEARWATER R.	0	0	2	0	2	0.023	
RIVER COMMERCIAL		0	0	0	0	0	0.000
INDIAN FISHERIES		0	0	0	0	0	0.000
HATCHERIES							
DWORSHAK H.		0	4	0	0	4	0.045
WALLOWA H.		0	3	0	0	3	0.034
STREAM SURVEY		0	0	0	0	0	0.000
TOTALS		0	18	9	0	27	0.307
PERCENT OF RECOVERY%		0.0	66.7	33.3	0.0		

Appendix Table 1.3.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point on 22 May 1994.

Master File Date : 23 July 1997 RELEASE GROUPS INCLUDED: 9401C
1994 L.GRANITE LGR RELEASE SITE: TONGUE POINT STEELHEAD
Brands Used: RAV 3 Wire Codes Used: 232424 NUMBER RELEASED: 9140

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	11	9	0	20	0.219
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	1	0	0	1	0.011
CLEARWATER R.	0	0	1	0	1	0.011
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES						
PAHSIMEROI H.	0	1	0	0	1	0.011
SAWTOOTH H. AND TRAP	0	1	0	0	1	0.011
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	14	10	0	24	0.263
PERCENT OF RECOVERY %	0.0	58.3	41.7	0.0		

Appendix Table 1.4.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point on 24 May 1994.

Master File Date : 23 July 1997 RELEASE GROUPS INCLUDED: 9401D
1994 L.GRANITE LGR RELEASE SITE: TONGUE POINT STEELHEAD
Brands Used: RAV 4
Wire Codes Used: 232437
NUMBER RELEASED: 9041

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	6	9	0	15	0.166
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	3	2	0	5	0.055
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES 0	0	0	0		0	0.000
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	9	11	0	20	0.221
PERCENT OF RECOVERY %	0.0	45.0	55.0	0.0		

Appendix Table 1.5.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point on 29 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9401E
1994 L.GRANITE LGR RELEASE SITE: TONGUE POINT STEELHEAD
Brands Used: RAPP1
Wire Codes Used: 232439
NUMBER RELEASED: 8767

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	11	11	0	22	0.251
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	4	3	0	7	0.080
CLEARWATER R.	0	0	1	0	1	0.011
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	15	15	0	30	0.342
PERCENT OF RECOVERY %	0.0	50.0	50.0	0.0		

Appendix Table 1.6.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point on 31 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9401F

1994 L.GRANITE LGR RELEASE SITE TONGUE POINT STEELHEAD
Brands Used: RAPP2
Wire Codes Used: 232441
NUMBER RELEASED: 4900

		YEAR OF RETURN					
RECOVERY AREA		1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
LOWER GRANITE TRAP		0	5	0	0	5	0.102
OCEAN FISHERIES		0	0	0	0	0	0.000
RIVER SPORT							
SNAKE R.		0	1	0	0	1	0.020
RIVER COMMERCIAL		0	0	0	0	0	0.000
INDIAN FISHERIES		0	0	0	0	0	0.000
HATCHERIES		0	0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0	0.000
TOTALS		0	6	0	0	6	0.122
PERCENT OF RECOVERY	%	0.0	100.0	0.0	0.0		

Appendix Table 1.7.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point on 2 Jun 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9401G
1994 L.GRANITE LGR RELEASE SITE TONGUE POINT STEELHEAD
Brands Used: RASU2
Wire Codes Used: 232443
NUMBER RELEASED: 7054

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	4	2	0	6	0.085
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	0	1	0	1	0.014
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	4	3	0	7	0.099
PERCENT OF RECOVERY %	0.0	57.1	42.9	0.0		

Appendix Table 1.8.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to Tongue Point on 4 Jun 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9401H
1994 L.GRANITE LGR RELEASE SITE TONGUE POINT
STEELHEAD
Brands Used: RASU3
Wire Codes Used: 233017
NUMBER RELEASED: 3036

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	0	2	0	2	0.066
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES						
WALLOWA H.	0	0	1	0	1	0.033
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	0	3	0	3	0.099
PERCENT OF RECOVERY %	0.0	0.0	100.0	0.0		

Appendix Table 2.0.--Summary of all recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam in 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9402A 9402B 9402C 9402D 9402E 9402F 9402G 9402H
1994 L.GRANITE LGR RELEASE SITE BELOW BONNEVILLE STEELHEAD
Brands Used: LAF 1 LAF 2 LAF 3 LAF 4 LAS 1 LAS 2 LAAN2 LAAN3
Wire Codes Used: 233016 232356 232423 232436 232438 232440 232442 233018
NUMBER RELEASED: 68314

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	25	24	0	49	0.072
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	5	1	0	6	0.009
CLEARWATER R.	0	1	3	0	4	0.006
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES						
FALL INDIAN NET	0	1	2	0	3	0.004
HATCHERIES						
DWORSHAK H.	0	1	0	0	1	0.001
PAHSIMEROI H.	0	1	1	0	2	0.003
HELLS CANYON (OXBOW) H.	0	0	1	0	1	0.001
DESCHUTES R. HATCHERIES	0	3	0	0	3	0.004
WALLOWA H.	0	2	0	0	2	0.003
SAWTOOTH H. AND TRAP	0	0	1	0	1	0.001
IMNAHA RIVER TRAP	0	2	0	0	2	0.003
BIG SHEEP CR. TRAP	0	2	0	0	2	0.003
BIG CANYON TRAP	0	0	2	0	2	0.003
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	43	35	0	78	0.114
PERCENT OF RECOVERY %	0.0	55.1	44.9	0.0		

Appendix Table 2.1.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam on 16 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9402A
1994 L.GRANITE LGR RELEASE SITE BELOW BONNEVILLE
STEELHEAD
Brands Used: LAF 1
Wire Codes Used: 233016
NUMBER RELEASED: 10080

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	3	6	0	9	0.089
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
CLEARWATER R.	0	0	1	0	1	0.010
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES						
DESCHUTES R. HATCHERIES	0	2	0	0	2	0.020
BIG CANYON TRAP	0	0	1	0	1	0.010
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	5	8	0	13	0.129
PERCENT OF RECOVERY %	0.0	38.5	61.5	0.0		

Appendix Table 2.2.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam on 18 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9402B
1994 L.GRANITE LGR RELEASE SITE BELOW BONNEVILLE
STEELHEAD
Brands Used: LAF 2
Wire Codes Used: 232356
NUMBER RELEASED: 9965

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	1	5	0	6	0.060
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	1	1	0	2	0.020
CLEARWATER R.	0	0	2	0	2	0.020
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES						
DWORSHAK H.	0	1	0	0	1	0.010
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	3	8	0	11	0.110
PERCENT OF RECOVERY %	0.0	27.3	72.7	0.0		

Appendix Table 2.3.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam on 22 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9402C
1994 L.GRANITE LGR RELEASE SITE BELOW BONNEVILLE
STEELHEAD
Brands Used: LAF 3
Wire Codes Used: 232423
NUMBER RELEASED: 10282

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	2	3	0	5	0.049
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES						
HELLS CANYON (OXBOW) H.	0	0	1	0	1	0.010
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	2	4	0	6	0.058
PERCENT OF RECOVERY %	0.0	33.3	66.7	0.0		

Appendix Table 2.4.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam on 24 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9402D
1994 L.GRANITE LGR RELEASE SITE BELOW BONNEVILLE
STEELHEAD
Brands Used: LAF 4
Wire Codes Used: 232436
NUMBER RELEASED: 10143

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	9	6	0	15	0.148
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	1	0	0	1	0.010
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES						
FALL INDIAN NET	0	1	0	0	1	0.010
HATCHERIES						
PAHSIMEROI H.	0	1	1	0	2	0.020
WALLOWA H.	0	2	0	0	2	0.020
IMNAHA RIVER TRAP	0	1	0	0	1	0.010
BIG SHEEP CR. TRAP	0	1	0	0	1	0.010
BIG CANYON TRAP	0	0	1	0	1	0.010
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	16	8	0	24	0.237
PERCENT OF RECOVERY%	0.0	66.7	33.3	0.0		

Appendix Table 2.5.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam on 29 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9402E
1994 L.GRANITE LGR RELEASE SITE BELOW BONNEVILLE
STEELHEAD
Brands Used: LAS 1
Wire Codes Used: 232438
NUMBER RELEASED: 9963

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	6	2	0	8	0.080
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
CLEARWATER R.	0	1	0	0	1	0.010
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES						
FALL INDIAN NET	0	0	1	0	1	0.010
HATCHERIES						
SAWTOOTH H. AND TRAP	0	0	1	0	1	0.010
IMNAHA RIVER TRAP	0	1	0	0	1	0.010
BIG SHEEP CR. TRAP	0	1	0	0	1	0.010
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	9	4	0	13	0.130
PERCENT OF RECOVERY %	0.0	69.2	30.8	0.0		

Appendix Table 2.6.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam on 31 May 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9402F
1994 L.GRANITE LGR RELEASE SITE BELOW BONNEVILLE
STEELHEAD
Brands Used: LAS 2
Wire Codes Used: 232440
NUMBER RELEASED: 6303

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	0	1	0	1	0.016
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES	0	0	0	0	0	0.000
HATCHERIES						
DESCHUTES R. HATCHERIES	0	1	0	0	1	0.016
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	1	1	0	2	0.032
PERCENT OF RECOVERY %	0.0	50.0	50.0	0.0		

Appendix Table 2.7.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam on 2 Jun 1994.

Master File Date : 23 July 1997
RELEASE GROUPS INCLUDED: 9402G
1994 L.GRANITE LGR RELEASE SITE BELOW BONNEVILLE
STEELHEAD
Brands Used: LAAN2
Wire Codes Used: 232442
NUMBER RELEASED: 8176

	YEAR OF RETURN					
RECOVERY AREA	1994	1995	1996	1997	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
LOWER GRANITE TRAP	0	4	1	0	5	0.061
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
SNAKE R.	0	3	0	0	3	0.037
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERIES						
FALL INDIAN NET	0	0	1	0	1	0.012
HATCHERIES	0	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	7	2	0	9	0.110
PERCENT OF RECOVERY %	0.0	77.8	22.2	0.0		

Appendix Table 3.0 Total yearling spring/summer chinook salmon collected and tagged at Lower Granite Dam, 1998.

				Tagged								Post-tagging mortality					
	Collection			Inriver			Transport			Total tagged		Inriver			Transport		
Tag date	Hatchery	Wild	Total	Hatchery	Wild	Total	Hatchery	Wild	Total	Number	(%)	Hatchery	Wild	Total	Hatchery	Wild	Total
4/6/98	4,740	5,300	10,040	354	331	685	275	214	489	1,174	11.7	0	0	0	0	0	0
4/7/98	7,050	6,210	13,260	69	54	123	63	58	121	244	1.8	0	0	0	0	0	0
4/8/98	3,020	2,960	5,980	210	242	452	201	99	300	752	12.6	0	2	2	0	0	0
4/9/98	3,180	1,900	5,080	530	262	792	325	227	552	1,344	26.5	0	0	0	0	0	0
4/10/98	1,940	1,260	3,200	1,872	536	2,408	1,262	359	1,621	4,029	125.9	12	4	16	0	0	0
4/11/98	2,460	1,620	4,080	1,540	415	1,955	885	302	1,187	3,142	77.0	15	3	18	0	0	0
4/12/98	2,500	1,540	4,040	2,031	462	2,493	1,213	368	1,581	4,074	100.8	12	5	17	0	0	0
4/13/98	3,520	1,540	5,060	1,211	270	1,481	904	202	1,106	2,587	51.1	12	3	15	0	0	0
4/14/98	4,360	1,600	5,960	3,530	625	4,155	1,688	311	1,999	6,154	103.3	26	8	34	0	0	0
4/15/98	6,400	2,020	8,420	1,856	472	2,328	1,262	311	1,573	3,901	46.3	12	8	20	0	0	0
4/16/98	16,820	6,140	22,960	1,295	207	1,502	1,119	191	1,310	2,812	12.2	16	7	23	0	0	0
4/17/98	11,350	4,400	15,750	1,968	299	2,267	1,137	231	1,368	3,635	23.1	17	16	33	0	0	0
4/18/98	11,200	4,450	15,650	1,347	262	1,609	1,064	111	1,175	2,784	17.8	16	9	25	0	0	0
4/19/98	12,050	3,750	15,800	3,769	450	4,219	2,001	459	2,460	6,679	42.3	31	17	48	1	0	1
4/20/98	20,650	4,400	25,050	1,493	216	1,709	833	106	939	2,648	10.6	20	12	32	1	0	1
4/21/98	18,700	3,350	22,050	1,922	282	2,204	1,249	179	1,428	3,632	16.5	18	8	26	0	0	0
4/22/98	42,650	8,200	50,850	4,328	647	4,975	3,159	416	3,575	8,550	16.8	54	23	77	2	0	2
4/23/98	48,150	7,900	56,050	4,000	515	4,515	2,487	273	2,760	7,275	13.0	33	16	49	0	0	0
4/24/98	46,900	8,500	55,400	1,815	185	2,000	881	51	932	2,932	5.3	14	8	22	0	0	0
4/25/98	58,700	6,100	64,800	2,877	313	3,190	1,558	110	1,668	4,858	7.5	14	10	24	0	0	0
4/26/98	67,100	7,700	74,800	1,282	142	1,424	703	74	777	2,201	2.9	3	5	8	0	0	0
4/27/98	66,900	7,500	74,400	1,211	77	1,288	880	69	949	2,237	3.0	3	1	4	0	0	0
4/28/98	60,000	8,100	68,100	3,122	245	3,368	1,858	124	1,982	5,349	7.9	43	14	57	0	0	0
4/29/98	63,450	9,600	73,050	1,676	104	1,780	1,049	73	1,122	2,902	4.0	7	0	7	0	0	0
4/30/98	36,150	7,500	43,650	1,528	123	1,651	985	58	1,043	2,694	6.2	3	0	3	0	0	0

Appendix Table 3.0 Continued.

				Tagged								Post-tagging mortality					
	Collection			Inriver			Transport			Total tagged		Inriver			Transport		
Tag date	Hatchery	Wild	Total	Hatchery	Wild	Total	Hatchery	Wild	Total	Number	(%)	Hatchery	Wild	Total	Hatchery	Wild	Total
5/1/98	46,950	6,750	53,700	2,355	292	2,647	969	222	1,191	3,838	7.1	24	6	30	0	0	0
5/2/98	40,950	4,650	45,600	857	107	964	722	96	818	1,782	3.9	5	0	5	0	0	0
5/3/98	63,600	10,350	73,950	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/4/98	66,750	19,050	85,800	393	57	450	479	60	539	989	1.2	1	3	4	0	0	0
5/5/98	70,950	14,700	85,650	1,253	192	1,445	862	83	945	2,390	2.8	6	5	11	0	0	0
5/6/98	70,050	9,900	79,950	2,256	283	2,539	1,352	104	1,456	3,995	5.0	9	2	11	0	0	0
5/7/98	56,100	11,400	67,500	911	130	1,041	814	107	921	1,962	2.9	20	4	24	0	0	0
5/8/98	43,800	6,600	50,400	1,140	111	1,251	872	99	971	2,222	4.4	4	4	8	0	0	0
5/9/98	25,050	5,550	30,600	1,365	232	1,597	822	146	968	2,565	8.4	18	25	43	0	0	0
5/10/98	37,650	8,100	45,750	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/11/98	41,550	7,950	49,500	1,058	200	1,258	704	88	792	2,051	4.1	5	5	10	0	0	0
5/12/98	18,300	4,350	22,650	164	16	180	189	29	218	398	1.8	0	0	0	0	0	0
5/13/98	14,550	3,900	18,450	626	51	677	471	83	554	1,231	6.7	6	0	6	0	0	0
5/14/98	16,500	3,750	20,250	631	77	708	518	48	566	1,274	6.3	31	6	37	0	0	0
5/15/98	17,550	3,300	20,850	165	48	213	129	30	159	372	1.8	2	0	2	0	0	0
5/16/98	14,250	2,400	16,650	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/17/98	5,400	1,950	7,350	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/18/98	3,300	3,450	6,750	73	20	93	46	16	62	155	2.3	1	0	1	0	0	0
5/19/98	4,500	2,400	6,900	36	9	45	38	6	44	89	1.3	0	0	0	0	0	0
5/20/98	2,250	750	3,000	287	141	428	260	40	300	728	24.3	0	1	1	1	0	1
5/21/98	1,500	900	2,400	104	29	133	81	16	97	230	9.6	0	0	0	0	0	0
5/22/98	1,800	300	2,100	110	43	153	78	39	117	270	12.9	0	1	1	0	0	0
5/23/98	2,200	1,500	3,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/24/98	4,300	2,200	6,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/25/98	2,100	3,100	5,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/26/98	2,500	3,200	5,700	37	39	76	21	28	49	125	2.2	0	0	0	0	0	0

Appendix Table 3.0 Continued.

				Tagged								Post-tagging mortality					
	Collection			Inriver			Transport			Total tagged		Inriver			Transport		
Tag date	Hatchery	Wild	Total	Hatchery	Wild	Total	Hatchery	Wild	Total	Number	(%)	Hatchery	Wild	Total	Hatchery	Wild	Total
5/27/98	1,760	1,600	3,360	40	42	82	17	34	51	133	4.0	0	0	0	0	0	0
5/28/98	830	630	1,460	14	36	50	14	17	31	81	5.5	0	0	0	0	0	0
5/29/98	460	770	1,230	18	19	37	8	10	18	55	4.5	0	0	0	0	0	0
5/30/98	250	310	560	8	11	19	5	7	12	31	5.5	0	0	0	0	0	0
5/31/98	190	240	430	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/1/98	60	20	80	6	7	13	3	5	8	21	26.3	0	0	0	0	0	0
6/2/98	120	120	240	5	4	9	2	2	4	13	5.4	0	0	0	0	0	0
6/3/98	110	60	170	4	4	8	1	2	3	11	6.5	0	0	0	0	0	0
6/4/98	80	70	150	8	3	11	5	1	6	17	11.3	0	0	0	0	0	0
6/5/98	150	80	230	12	7	19	8	2	10	29	12.6	0	0	0	0	0	0
6/6/98	230	80	310	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/7/98	120	60	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/8/98	80	120	200	5	1	6	1	2	3	9	4.5	0	0	0	0	0	0
6/9/98	80	80	160	3	3	6	1	2	3	9	5.6	0	0	0	0	0	0
6/10/98	60	90	150	2	9	11	2	4	6	17	11.3	0	0	0	0	0	0
6/11/98	28	76	104	3	4	7	5	1	6	13	12.5	0	0	0	0	0	0
6/12/98	30	55	85	13	10	23	7	8	15	38	44.7	0	0	0	0	0	0
6/13/98	135	120	255	7	12	19	11	4	15	34	13.3	0	0	0	0	0	0
6/14/98	290	215	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/15/98	105	120	225	9	11	20	11	5	16	36	16.0	0	0	0	0	0	0
6/16/98	80	140	220	11	15	26	10	12	22	48	21.8	0	0	0	0	0	0
6/17/98	90	185	275	24	10	34	5	21	26	60	21.8	0	0	0	0	0	0
6/18/98	125	250	375	12	10	22	6	15	21	43	11.5	0	0	0	0	0	0
6/19/98	168	174	342	14	7	21	6	12	18	39	11.4	0	0	0	0	0	0
6/20/98	90	156	246	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 3.0 Continued.

				Tagged								Post-tagging mortality					
	Collection			Inriver			Transport			Total tagged		Inriver			Transport		
Tag date	Hatchery	Wild	Total	Hatchery	Wild	Total	Hatchery	Wild	Total	Number	(%)	Hatchery	Wild	Total	Hatchery	Wild	Total
6/21/98	102	174	276	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/22/98	156	200	356	67	45	112	36	46	82	194	54.5	0	0	0	0	0	0
6/23/98	420	408	828	43	75	118	26	64	90	208	25.1	0	0	0	0	0	0
6/24/98	336	612	948	23	20	43	17	15	32	75	7.9	0	0	0	0	0	0
6/25/98	188	156	344	33	28	61	23	23	46	107	31.1	0	0	0	0	0	0
6/26/98	300	260	560	49	31	80	36	24	60	140	25.0	0	0	0	0	0	0
6/27/98	356	324	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/28/98	276	184	460	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/29/98	510	366	876	34	42	76	23	35	58	134	15.3	0	0	0	0	0	0
	1,302,705	274,495	1,577,200	61,124	10,279	71,403	38,757	6,689	45,446	116,849	7.4	513	241	754	5	0	5

* We were unable to break out the hatchery and wild percent tagged because not all hatchery fish were clipped. We determined which of the unclipped fish were wild and which were hatchery (see Marsh et al. 1997) but the agencies which recorded the collection numbers classified all unclipped fish as wild fish.

Appendix Table 4.0 Release numbers by date for yearling spring/summer chinook salmon tagged at Lower Granite Dam, 1998.

Release date	Number released					
	Inriver			Transport		
	Hatchery	Wild	Total	Hatchery	Wild	Total
4/7/98	354	331	685	338	272	610
4/8/98	69	54	123			0
4/9/98	210	240	450	526	326	852
4/10/98	530	262	792			0
4/11/98	1,860	532	2,392	2,147	661	2,808
4/12/98	1,526	412	1,938			0
4/13/98	2,019	457	2,476	2,117	570	2,687
4/14/98	1,199	267	1,466			0
4/15/98	3,504	617	4,121	1,688	311	1,999
4/16/98	1,844	464	2,308			0
4/17/98	1,279	200	1,479	2,381	502	2,883
4/18/98	1,951	283	2,234			0
4/19/98	1,331	253	1,584	2,201	342	2,543
4/20/98	3,739	433	4,172			0
4/21/98	1,473	204	1,677	2,940	583	3,523
4/22/98	1,904	274	2,178			0
4/23/98	4,274	624	4,898	4,299	579	4,875
4/24/98	3,966	499	4,465			0
4/25/98	1,801	177	1,978	3,369	324	3,692
4/26/98	2,863	303	3,166	124	10	134
4/27/98	1,279	137	1,416	2,137	174	2,311
4/28/98	1,208	76	1,284	880	69	949
4/29/98	3,080	231	3,311	1,858	124	1,982
4/30/98	1,669	104	1,773	1,049	73	1,122
5/1/98	1,525	123	1,648	985	58	1,043
5/2/98	2,331	286	2,617	969	222	1,191
5/3/98	852	107	959	722	96	818
5/4/98	-	-	-	-	-	-
5/5/98	392	54	446	479	60	539
5/6/98	1,247	187	1,434	862	83	945
5/7/98	2,247	281	2,528	1,351	104	1,456
5/8/98	891	126	1,017	814	107	921
5/9/98	1,136	107	1,243	1,034	129	1,163
5/10/98	1,347	207	1,554	660	116	776
5/11/98	-	-	-	-	-	-
5/12/98	1,053	195	1,248	704	88	792
5/13/98	164	16	180	189	29	218
5/14/98	620	51	671	471	83	554
5/15/98	600	71	671	518	48	566
5/16/98	163	48	211	129	30	159
5/17/98	-	-	-	-	-	-
5/18/98	-	-	-	-	-	-

Appendix Table 4.0 Continued.

Release date	Number released					
	Inriver			Transport		
	Hatchery	Wild	Total	Hatchery	Wild	Total
5/19/98	72	20	92	46	16	62
5/20/98	36	9	45	38	6	44
5/21/98	287	140	427			0
5/22/98	104	29	133	340	56	396
5/23/98	110	42	152	78	39	117
5/24/98	-	-	-	-	-	-
5/25/98	-	-	-	-	-	-
5/26/98	-	-	-	-	-	-
5/27/98	37	39	76	38	62	100
5/28/98	40	42	82			0
5/29/98	14	36	50	22	27	49
5/30/98	18	19	37			0
5/31/98	8	11	19	5	7	12
6/1/98	-	-	-	-	-	-
6/2/98	6	7	13	5	7	12
6/3/98	5	4	9			0
6/4/98	4	4	8	6	3	9
6/5/98	8	3	11			0
6/6/98	12	7	19	8	2	10
6/7/98	-	-	-	-	-	-
6/8/98			0	1	2	3
6/9/98	5	1	6			0
6/10/98	3	3	6	3	6	9
6/11/98	2	9	11			0
6/12/98	3	4	7	12	9	21
6/13/98	13	10	23			0
6/14/98	7	12	19	11	4	15
6/15/98	-	-	-	-	-	-
6/16/98	9	11	20	21	17	38
6/17/98	11	15	26			0
6/18/98	24	10	34	11	36	47
6/19/98	12	10	22			0
6/20/98	14	7	21	6	12	18
6/21/98	-	-	-	-	-	-
6/22/98			0	36	46	82
6/23/98	67	45	112			0
6/24/98	43	75	118	43	79	122
6/25/98	23	20	43			0
6/26/98	33	28	61	59	47	106
6/27/98	49	31	80			0
6/28/98	-	-	-	-	-	-
6/29/98	-	-	-	-	-	-
6/30/98	34	42	76	23	35	58
	60,613	10,038	70,651	38,753	6,691	45,441

Appendix Table 5.0 Observations (detections) of yearling spring/summer chinook salmon released into the Lower Granite Dam tailrace, 1998.

	Little Goose	Lower Monumental		McNary			Total			Total	Total
File name	1st Obs	1st Obs	2nd Obs	1st Obs	2nd Obs	3rd Obs	1st Obs	2nd Obs	3rd Obs	obs	released
DMM98096.IR1	175	109	47	128	79	12	412	126	12	550	685
DMM98097.IR1	33	20	6	24	14	13	77	20	13	110	123
DMM98098.IR1	77	50	21	45	34	3	172	55	3	230	257
DMM98098.IR2	55	40	10	33	36	15	128	46	15	189	193
DMM98099.IR1	174	114	62	100	76	6	388	138	6	532	595
DMM98099.IR2	59	36	17	38	21	40	133	38	40	211	197
DMM98100.IR1	385	297	99	309	196	20	991	295	20	1,306	1541
DMM98100.IR2	216	169	52	163	92	1	548	144	1	693	851
DMM98101.IR1	324	225	92	238	166	38	787	258	38	1,083	1174
DMM98101.IR2	212	138	63	134	108	22	484	171	22	677	764
DMM98102.IR1	399	282	105	249	204	37	930	309	37	1,276	1395
DMM98102.IR2	320	203	72	188	146	30	711	218	30	959	1081
DMM98103.IR1	258	187	58	155	141	19	600	199	19	818	880
DMM98103.IR2	184	99	48	95	76	19	378	124	19	521	586
DMM98104.IR1	707	398	173	401	320	54	1,506	493	54	2,053	2261
DMM98104.IR2	615	305	148	317	283	50	1,237	431	50	1,718	1860
DMM98105.IR1	455	211	102	216	179	37	882	281	37	1,200	1304
DMM98105.IR2	322	199	82	191	147	24	712	229	24	965	1004
DMM98106.IR1	366	157	85	156	137	40	679	222	40	941	990
DMM98106.IR2	178	84	40	68	69	12	330	109	12	451	489
DMM98107.IR1	508	226	112	202	205	46	936	317	46	1,299	1313
DMM98107.IR2	363	149	100	119	118	28	631	218	28	877	921
DMM98108.IR1	401	150	73	143	138	26	694	211	26	931	944
DMM98108.IR2	271	109	64	80	104	26	460	168	26	654	640
DMM98109.IR1	988	284	183	291	348	66	1,563	531	66	2,160	2128
DMM98109.IR2	940	277	188	267	340	68	1,484	528	68	2,080	2043

Appendix Table 5.0 Continued.

File name	Little Goose 1st Obs	Lower Monumental 1st Obs	Lower Monumental 2nd Obs	McNary 1st Obs	McNary 2nd Obs	McNary 3rd Obs	Total 1st Obs	Total 2nd Obs	Total 3rd Obs	Total obs	Total released
DMM98110.IR1	485	151	111	158	150	38	794	261	38	1,093	1116
DMM98110.IR2	252	71	66	69	89	19	392	155	19	566	561
DMM98111.IR1	652	172	155	221	206	43	1,045	361	43	1,449	1467
DMM98111.IR2	303	87	56	98	94	13	488	150	13	651	711
DMM98112.IR1	897	275	203	284	281	67	1,456	484	67	2,007	2120
DMM98112.IR2	782	265	211	219	252	59	1,266	463	59	1,788	1844
DMM98112.IR3	408	121	89	122	137	29	651	226	29	906	934
DMM98113.IR1	1,057	350	241	297	308	64	1,704	549	64	2,317	2388
DMM98113.IR2	899	294	219	258	264	50	1,451	483	50	1,984	2078
DMM98114.IR1	56	11	13	11	13	2	78	26	2	106	108
DMM98114.IR2	322	119	100	72	68	23	513	168	23	704	766
DMM98114.IR3	238	100	75	72	67	22	410	142	22	574	613
DMM98114.IR4	197	74	59	56	38	10	327	97	10	434	491
DMM98115.IR1	917	322	295	166	170	48	1,405	465	48	1,918	2020
DMM98115.IR2	119	37	29	19	32	7	175	61	7	243	262
DMM98115.IR3	390	137	144	64	62	23	591	206	23	820	884
DMM98116.IR1	429	133	123	44	48	23	606	171	23	800	829
DMM98116.IR2	272	115	82	26	48	12	413	130	12	555	587
DMM98117.IR1	684	203	224	52	89	37	939	313	37	1,289	1284
DMM98118.IR1	1,230	411	406	85	170	67	1,726	576	67	2,369	2372
DMM98118.IR2	495	140	142	40	64	32	675	206	32	913	939
DMM98119.IR1	109	34	42	3	16	4	146	58	4	208	219
DMM98119.IR2	533	174	173	38	75	24	745	248	24	1,017	1033
DMM98119.IR3	269	89	82	11	37	12	369	119	12	500	521
DMM98120.IR1	636	225	210	39	102	19	900	312	19	1,231	1247
DMM98120.IR2	183	79	54	18	28	7	280	82	7	369	401
DMM98121.IR1	660	215	229	67	92	36	942	321	36	1,299	1289
DMM98121.IR2	661	243	236	61	100	41	965	336	41	1,342	1328

Appendix Table 5.0 Continued.

File name	Little Goose 1st Obs	Lower Monumental 1st Obs	Lower Monumental 2nd Obs	McNary 1st Obs	McNary 2nd Obs	McNary 3rd Obs	Total 1st Obs	Total 2nd Obs	Total 3rd Obs	Total obs	Total released
DMM98122.IR2	462	168	158	56	76	24	686	234	24	944	959
DMM98124.IR2	219	80	61	19	32	9	318	93	9	420	446
DMM98125.IR1	271	96	88	25	54	20	392	142	20	554	505
DMM98125.IR2	527	161	138	44	71	46	732	209	46	987	929
DMM98126.IR1	283	139	118	26	76	37	448	194	37	679	581
DMM98126.IR2	1,017	407	433	96	212	125	1,520	645	125	2,290	1947
DMM98127.IR1	52	19	24	4	13	7	75	37	7	119	97
DMM98127.IR2	470	220	206	36	118	58	726	324	58	1,108	920
DMM98128.IR1	50	32	24	6	26	6	88	50	6	144	114
DMM98128.IR2	506	281	226	56	136	67	843	362	67	1,272	1129
DMM98129.IR1	252	105	107	21	50	30	378	157	30	565	489
DMM98129.IR2	555	218	233	54	105	52	827	338	52	1,217	1065
DMM98131.IR1	138	47	55	5	24	14	190	79	14	283	243
DMM98131.IR2	586	168	239	46	76	43	800	315	43	1,158	1005
DMM98132.IR2	101	36	36	4	15	7	141	51	7	199	180
DMM98133.IR2	346	114	110	20	41	12	480	151	12	643	671
DMM98134.IR1	74	33	21	12	10	-	119	31	-	150	159
DMM98134.IR2	231	92	65	28	27	10	351	92	10	453	512
DMM98135.IR2	80	33	19	11	7	2	124	26	2	152	211
DMM98138.IR2	35	15	9	3	3	3	53	12	3	68	92
DMM98139.IR2	14	4	1	3	2	-	21	3	-	24	45
DMM98140.IR2	141	54	32	21	7	4	216	39	4	259	427
DMM98141.IR2	32	9	5	8	1	-	49	6	-	55	133
DMM98142.IR2	64	21	19	5	3	1	90	22	1	113	152
DMM98146.IR1	18	16	5	2	5	2	36	10	2	48	76
DMM98147.IR1	15	21	5	6	6	1	42	11	1	54	82
DMM98148.IR1	11	12	1	2	4	-	25	5	-	30	50

Appendix Table 5.0 Continued.

File name	Little Goose 1st Obs	Lower Monumental 1st Obs	Lower Monumental 2nd Obs	McNary 1st Obs	McNary 2nd Obs	McNary 3rd Obs	Total 1st Obs	Total 2nd Obs	Total 3rd Obs	Total obs	Total released
DMM98149.IR1	10	9	4	-	2	1	19	6	1	26	37
DMM98150.IR1	3	4	1	-	-	-	7	1	-	8	19
DMM98152.IR1	3	1	-	1	-	-	5	-	-	5	13
DMM98153.IR1	2	2	1	-	1	-	4	2	-	6	9
DMM98154.IR1	-	2	-	-	-	-	2	-	-	2	8
DMM98155.IR1	-	4	-	1	2	-	5	2	-	7	11
DMM98156.IR1	1	3	-	1	-	-	5	-	-	5	19
DMM98159.IR1	2	1	2	-	-	-	3	2	-	5	6
DMM98160.IR1	-	3	-	-	-	-	3	-	-	3	6
DMM98161.IR1	3	3	1	-	1	-	6	2	-	8	11
DMM98162.IR1	5	1	2	-	10	-	6	12	-	18	7
DMM98163.IR1	7	7	4	-	1	-	14	5	-	19	23
DMM98164.IR1	5	5	2	2	1	-	12	3	-	15	19
DMM98166.IR1	5	1	1	2	-	-	8	1	-	9	20
DMM98167.IR1	5	4	3	3	-	1	12	3	1	16	26
DMM98168.IR1	8	9	3	2	9	-	19	12	-	31	34
DMM98169.IR1	-	-	-	-	-	-	-	-	-	-	22
DMM98170.IR1	16	3	9		4	2	19	13	2	34	21
DMM98173.IR1	85	5	40	1	6	11	91	46	11	148	112
DMM98174.IR1	93	9	46	2	11	12	104	57	12	173	118
DMM98175.IR1	34	2	15	-	3	5	36	18	5	59	43
DMM98176.IR1	38	7	18	-	4	11	45	22	11	78	61
DMM98177.IR1	57	10	26	-	4	11	67	30	11	108	80
DMM98180.IR1	55	8	19	1	2	9	64	21	9	94	76
Totals	30,107	11,869	8,806	7,655	8,138	2,226	49,631	16,944	2,226	68,801	70,651

Appendix Table 6.0. Locations of observations (detections) of PIT-tagged spring/summer chinook salmon within the Little Goose Dam juvenile fish facility, 1998.

Date observed	Sep Div	Div	Sep	Sep Samp	Sample	Sep Race	Race	Sep Samp Race	Total observed
12-Apr-98	2	-	-	-	-	-	-	-	2
13-Apr-98	3	-	-	-	-	-	-	-	3
14-Apr-98	2	-	-	-	-	-	-	-	2
15-Apr-98	7	-	-	1	-	-	-	-	8
16-Apr-98	14	-	-	4	-	-	-	-	18
17-Apr-98	37	1	-	3	-	-	-	2	43
18-Apr-98	83	-	-	7	-	-	-	3	93
19-Apr-98	105	-	-	6	-	-	-	6	117
20-Apr-98	97	-	1	9	-	-	-	2	109
21-Apr-98	373	-	1	30	-	3	-	10	417
22-Apr-98	369	2	1	17	-	5	2	10	406
23-Apr-98	755	1	-	27	2	1	1	24	811
24-Apr-98	1,767	5	3	30	1	1	7	10	1,824
25-Apr-98	1,915	-	1	17	-	3	8	6	1,950
26-Apr-98	2,625	6	4	16	-	2	11	4	2,668
27-Apr-98	1,988	1	4	12	-	125	13	9	2,152
28-Apr-98	1,237	3	2	16	-	109	6	5	1,378
29-Apr-98	869	2	4	5	-	27	2	3	912
30-Apr-98	1,058	1	7	2	-	24	5	2	1,099
01-May-98	671	15	5	4	-	52	4	2	753
02-May-98	865	1	1	5	-	21	5	1	899
03-May-98	1,524	2	2	7	-	43	12	7	1,597
04-May-98	1,853	7	1	10	-	65	9	10	1,955
05-May-98	1,228	9	3	15	2	29	8	7	1,301
06-May-98	960	3	2	6	-	22	6	1	1,000
07-May-98	758	1	3	-	-	35	5	-	802
08-May-98	237	-	4	-	-	7	462	-	710
09-May-98	474	1	4	-	-	6	342	-	827
10-May-98	819	-	8	-	-	32	2	-	861
11-May-98	660	-	3	-	-	17	1	1	682
12-May-98	599	3	2	1	-	11	2	1	619
13-May-98	646	13	2	6	-	8	1	1	677
14-May-98	395	-	-	4	-	10	3	-	412
15-May-98	471	1	2	3	-	6	5	-	488
16-May-98	390	-	-	6	-	6	1	1	404

Appendix Table 6.0. Continued.

Date observed	Sep Div	Div	Sep	Sep Samp	Sample	Sep Race	Race	Sep Samp Race	Total observed
17-May-98	293	-	-	3	-	10	1	1	308
18-May-98	213	-	1	2	-	6	2	1	225
19-May-98	207	-	1	6	-	1	-	-	215
20-May-98	175	-	-	2	-	5	1	-	183
21-May-98	119	1	-	6	-	2	-	1	129
22-May-98	102	-	-	4	-	2	1	-	109
23-May-98	85	-	-	4	-	2	-	-	91
24-May-98	87	-	-	1	-	3	1	1	93
25-May-98	95	1	-	2	1	1	-	-	100
26-May-98	83	-	-	2	-	3	-	-	88
27-May-98	43	-	-	-	-	2	1	-	46
28-May-98	26	-	-	-	-	3	-	-	29
29-May-98	10	1	-	-	-	2	-	-	13
30-May-98	10	-	-	-	-	-	-	-	10
31-May-98	15	-	-	2	-	-	-	-	17
01-Jun-98	9	-	-	-	-	-	-	-	9
02-Jun-98	8	-	-	1	-	-	-	-	9
03-Jun-98	4	-	-	-	-	-	-	1	5
04-Jun-98	1	-	-	-	-	-	-	-	1
05-Jun-98	1	-	-	1	-	2	-	-	4
06-Jun-98	4	-	-	-	-	-	-	-	4
07-Jun-98	1	-	-	-	-	-	-	-	1
10-Jun-98	-	-	-	-	1	-	-	-	1
12-Jun-98	2	-	-	-	-	-	-	-	2
13-Jun-98	1	-	-	-	-	-	-	-	1
14-Jun-98	4	-	-	-	-	-	-	-	4
15-Jun-98	4	-	-	-	-	-	-	-	4
16-Jun-98	4	-	-	-	-	-	-	-	4
17-Jun-98	7	-	-	-	-	-	-	-	7
18-Jun-98	1	-	-	-	-	-	-	-	1
19-Jun-98	4	-	-	-	-	-	-	-	4
20-Jun-98	2	-	-	-	-	-	-	-	2
21-Jun-98	7	-	-	-	-	-	-	-	7
22-Jun-98	5	-	-	-	-	-	-	-	5
23-Jun-98	3	-	-	-	-	-	-	-	3
24-Jun-98	4	-	-	-	-	-	-	-	4
25-Jun-98	30	-	-	-	-	-	-	-	30

Appendix Table 6.0. Continued.

Date observed	Sep Div	Div	Sep	Sep Samp	Sample	Sep Race	Race	Sep Samp Race	Total observed
26-Jun-98	46	-	-	-	-	1	-	-	47
27-Jun-98	47	-	-	-	-	-	-	-	47
28-Jun-98	35	-	-	-	-	1	-	-	36
29-Jun-98	29	-	-	-	-	-	-	-	29
30-Jun-98	26	-	-	-	-	-	-	-	26
01-Jul-98	12	-	-	-	-	-	-	-	12
02-Jul-98	20	-	-	-	-	-	1	-	21
03-Jul-98	22	-	-	-	-	-	-	-	22
04-Jul-98	9	-	-	-	-	-	-	-	9
05-Jul-98	9	-	-	-	-	-	-	-	9
06-Jul-98	6	-	-	-	-	-	-	-	6
07-Jul-98	9	-	-	-	-	-	-	-	9
08-Jul-98	15	-	-	-	-	-	-	-	15
09-Jul-98	8	-	-	-	-	-	-	-	8
10-Jul-98	14	-	-	-	-	-	-	-	14
11-Jul-98	16	-	-	-	-	-	-	-	16
12-Jul-98	7	-	-	-	-	-	-	-	7
14-Jul-98	1	-	-	-	-	-	-	-	1
15-Jul-98	2	-	-	-	-	-	-	-	2
16-Jul-98	1	-	-	-	-	-	-	-	1
17-Jul-98	-	-	-	-	-	1	-	-	1
22-Jul-98	1	-	-	-	-	-	-	-	1
07-Aug-98	1	-	-	-	-	-	-	-	1
Totals	27,861	81	72	305	7	717	931	133	30,107

Appendix Table 7.0 Locations of observations (detections) of PIT-tagged spring/summer chinook salmon within the Lower Monumental Dam juvenile fish facility, 1998.

Date observed	Sep Div	Div	Sep	Sep Samp	Sample	Sep Race	Race	Total observed
15-Apr-98	1	-	1	-	-	-	-	2
16-Apr-98	1	-	-	-	-	1	-	2
17-Apr-98	3	-	-	-	-	-	-	3
18-Apr-98	13	-	-	-	-	-	-	13
19-Apr-98	15	-	-	-	-	-	1	16
20-Apr-98	39	-	1	7	-	28	-	75
21-Apr-98	130	-	1	3	-	10	-	144
22-Apr-98	200	-	-	5	-	5	-	210
23-Apr-98	363	-	1	3	-	4	-	371
24-Apr-98	692	-	-	9	-	3	-	704
25-Apr-98	1,014	-	4	11	-	12	1	1,042
26-Apr-98	926	3	1	19	-	11	-	960
27-Apr-98	780	-	-	3	-	9	-	792
28-Apr-98	909	-	-	4	-	20	-	933
29-Apr-98	914	1	1	-	-	20	6	942
30-Apr-98	713	-	3	1	-	23	2	742
01-May-98	668	-	3	-	-	11	-	682
02-May-98	766	-	-	-	-	19	-	785
03-May-98	880	1	3	2	-	9	-	895
04-May-98	919	-	1	9	-	9	-	938
05-May-98	839	-	1	7	-	5	1	853
06-May-98	963	2	-	14	-	9	2	990
07-May-98	891	1	-	5	-	4	1	902
08-May-98	741	-	2	1	-	207	-	951
09-May-98	408	-	-	3	-	305	2	718
10-May-98	436	-	-	-	-	2	-	438
11-May-98	608	-	1	1	-	1	-	611
12-May-98	525	1	-	-	-	7	1	534
13-May-98	724	2	-	2	-	7	-	735
14-May-98	610	-	1	1	-	8	-	620
15-May-98	448	-	1	4	-	4	1	458
16-May-98	421	-	-	3	-	6	-	430
17-May-98	396	-	-	7	-	5	-	408
18-May-98	280	-	-	-	-	4	-	284
19-May-98	209	-	-	3	-	3	-	215
20-May-98	147	-	-	-	-	2	-	149
21-May-98	134	-	-	1	-	1	-	136

Appendix Table 7.0. Continued.

Date observed	Sep Div	Div	Sep	Sep Samp	Sample	Sep Race	Race	Total observed
22-May-98	140	-	2	1	-	2	1	146
23-May-98	124	1	-	3	-	21	1	150
24-May-98	38	-	-	1	-	18	-	57
25-May-98	47	5	-	1	1	-	-	54
26-May-98	63	-	-	3	-	3	1	70
27-May-98	77	-	1	-	-	1	-	79
28-May-98	44	-	-	-	-	-	-	44
29-May-98	18	-	-	-	-	-	-	18
30-May-98	18	-	-	1	-	-	1	20
31-May-98	9	-	-	-	-	1	-	10
01-Jun-98	18	-	-	1	-	1	-	20
02-Jun-98	14	-	-	1	-	1	-	16
03-Jun-98	3	-	-	1	-	-	-	4
04-Jun-98	7	-	-	-	-	1	-	8
05-Jun-98	6	-	-	-	-	-	-	6
06-Jun-98	1	-	-	1	-	-	-	2
07-Jun-98	3	-	-	-	-	-	-	3
08-Jun-98	2	-	-	2	-	-	-	4
09-Jun-98	10	-	-	-	-	-	-	10
10-Jun-98	1	-	-	-	-	-	-	1
12-Jun-98	1	-	-	-	-	-	-	1
14-Jun-98	3	-	-	-	-	-	-	3
15-Jun-98	3	-	-	-	-	-	-	3
16-Jun-98	6	-	-	-	-	-	-	6
17-Jun-98	9	-	-	-	-	-	-	9
18-Jun-98	5	-	-	-	-	-	-	5
19-Jun-98	3	-	-	-	-	-	-	3
20-Jun-98	2	-	-	-	-	-	-	2
22-Jun-98	5	-	-	-	-	-	-	5
23-Jun-98	1	-	-	-	-	-	-	1
24-Jun-98	6	-	-	-	-	-	-	6
25-Jun-98	3	-	-	-	-	-	-	3
26-Jun-98	5	-	-	-	-	-	-	5
27-Jun-98	11	-	-	-	-	-	-	11
28-Jun-98	17	-	-	-	-	-	-	17
29-Jun-98	19	-	-	-	-	-	-	19
30-Jun-98	11	-	-	-	-	-	-	11
01-Jul-98	11	-	-	-	-	-	-	11
02-Jul-98	5	-	-	-	-	-	-	5
03-Jul-98	10	-	-	-	-	-	-	10

Appendix Table 7.0. Continued.

Date observed	Sep Div	Div	Sep	Sep Samp	Sample	Sep Race	Race	Total observed
04-Jul-98	4	-	-	-	-	-	-	4
05-Jul-98	10	-	-	-	-	-	-	10
06-Jul-98	5	-	-	-	-	-	-	5
07-Jul-98	4	1	-	-	-	-	-	5
08-Jul-98	3	-	-	-	-	-	-	3
09-Jul-98	5	-	-	-	-	-	-	5
10-Jul-98	8	-	-	-	-	-	-	8
11-Jul-98	9	-	-	-	-	-	-	9
12-Jul-98	7	-	-	-	-	-	-	7
13-Jul-98	1	-	-	-	-	-	-	1
14-Jul-98	3	-	-	-	-	-	-	3
15-Jul-98	9	-	-	1	-	-	-	10
16-Jul-98	4	-	-	-	-	-	-	4
17-Jul-98	6	-	-	-	-	-	-	6
18-Jul-98	8	-	-	-	-	-	-	8
19-Jul-98	5	-	-	-	-	-	-	5
20-Jul-98	2	-	-	-	-	-	-	2
21-Jul-98	6	-	-	-	-	-	-	6
22-Jul-98	7	-	1	-	-	-	-	8
23-Jul-98	8	-	-	-	-	-	-	8
24-Jul-98	1	-	-	-	-	-	-	1
25-Jul-98	1	-	-	-	-	-	-	1
26-Jul-98	3	-	-	-	-	-	-	3
27-Jul-98	2	-	-	-	-	-	-	2
28-Jul-98	3	-	-	-	-	-	-	3
30-Jul-98	1	-	-	-	-	-	-	1
01-Aug-98	1	-	-	-	-	-	-	1
02-Aug-98	1	-	-	-	-	-	-	1
04-Aug-98	1	-	-	-	-	-	-	1
14-Aug-98	2	-	-	-	-	-	-	2
11-Sep-98	-	-	-	1	-	-	-	1
Total		19,635	18	30	146	1	823	22

Appendix Table 8.0 Locations of observations (detections) of PIT-tagged spring/summer chinook salmon within the McNary Dam juvenile fish facility, 1998

Date observed	Sep Div	Div	Sep*	Sep Samp*	Sep Sample Div*	Sa mp*	Sep Race*	Race*	Total observed
19-Apr-98	-	-	1	-	-	-	-	-	1
21-Apr-98	-	-	5	-	-	-	-	-	5
22-Apr-98	-	-	6	-	-	-	-	-	6
23-Apr-98	13	-	8	2	-	-	1	-	24
24-Apr-98	129	-	2	6	-	-	-	-	137
25-Apr-98	174	-	1	1	-	-	-	-	176
26-Apr-98	375	-	-	12	-	-	-	-	387
27-Apr-98	812	1	6	12	-	-	-	-	831
28-Apr-98	837	-	7	10	-	-	-	-	854
29-Apr-98	199	-	395	7	-	-	55	-	656
30-Apr-98	235	-	544	48	-	-	-	-	827
01-May-98	609	1	682	143	-	1	68	-	1,504
02-May-98	827	-	936	136	-	-	24	-	1,923
03-May-98	924	-	975	110	-	1	-	-	2,010
04-May-98	778	1	772	88	-	-	-	-	1,639
05-May-98	451	1	515	57	-	-	-	-	1,024
06-May-98	200	-	278	57	-	-	-	-	535
07-May-98	156	1	194	36	-	-	40	-	427
08-May-98	132	1	205	55	-	-	-	-	393
09-May-98	133	-	171	61	-	-	-	-	365
10-May-98	154	-	179	36	-	-	-	-	369
11-May-98	217	-	197	44	-	-	-	-	458
12-May-98	75	-	185	31	-	-	-	-	291
13-May-98	80	-	68	12	-	-	-	-	160
14-May-98	118	-	111	23	-	-	-	-	252
15-May-98	148	-	169	29	-	-	-	-	346
16-May-98	124	-	179	16	-	-	-	-	319
17-May-98	135	-	97	1	6	-	30	1	270
18-May-98	185	-	181	-	2	-	-	-	368
19-May-98	258	-	39	-	5	-	-	-	302
20-May-98	224	-	-	5	-	-	-	-	229
21-May-98	151	-	17	-	-	-	-	-	168
22-May-98	75	-	40	-	3	-	2	-	120
23-May-98	103	-	-	5	1	-	-	-	109
24-May-98	84	-	5	3	-	-	-	-	92

Appendix Table 8.0. Continued.

Date observed	Sep Div	Div	Sep*	Sep Samp*	Sep Sample Div*	Sa mp*	Sep Race*	Race*	Total observed
25-May-98	22	-	24	-	-	1	-	-	47
26-May-98	43	-	31	4	-	-	-	-	78
27-May-98	26	-	22	2	-	-	-	-	50
28-May-98	9	-	21	2	-	-	-	-	32
29-May-98	11	-	20	-	-	-	-	-	31
30-May-98	5	-	10	-	-	-	1	-	16
31-May-98	1	-	1	-	-	-	-	-	2
01-Jun-98	5	-	3	-	-	-	-	-	8
02-Jun-98	4	2	-	-	-	-	-	-	6
03-Jun-98	7	-	-	-	-	-	-	-	7
04-Jun-98	4	-	-	-	-	-	1	-	5
05-Jun-98	6	-	-	-	-	-	-	-	6
06-Jun-98	5	-	-	-	-	-	-	-	5
07-Jun-98	1	-	-	-	-	-	-	-	1
11-Jun-98	2	-	-	-	-	-	-	-	2
12-Jun-98	1	-	-	-	-	-	-	-	1
13-Jun-98	4	-	-	-	-	-	-	-	4
16-Jun-98	1	-	-	-	-	-	-	-	1
17-Jun-98	1	-	-	-	-	-	-	-	1
19-Jun-98	5	-	-	-	-	-	-	-	5
21-Jun-98	2	-	-	-	-	-	-	-	2
22-Jun-98	5	-	-	-	-	-	-	-	5
23-Jun-98	1	-	-	-	-	-	-	-	1
25-Jun-98	1	-	-	-	-	-	-	-	1
26-Jun-98	1	-	-	-	-	-	-	-	1
29-Jun-98	1	-	-	-	-	-	-	-	1
30-Jun-98	3	-	-	-	-	-	-	-	3
01-Jul-98	3	-	-	-	-	-	-	-	3
02-Jul-98	11	-	-	-	-	-	-	-	11
03-Jul-98	9	-	-	-	-	-	-	-	9
04-Jul-98	4	-	-	-	-	-	-	-	4
05-Jul-98	2	-	-	-	-	-	-	-	2
06-Jul-98	4	-	-	-	-	-	-	-	4
07-Jul-98	6	-	-	-	-	-	-	-	6
08-Jul-98	6	-	-	-	-	-	1	-	7
09-Jul-98	3	-	-	-	-	-	-	-	3

Appendix Table 8.0. Continued.

Date observed	Sep Div	Div	Sep*	Sep Samp*	Sep Sample Div*	Sa mp*	Sep Race*	Race*	Total observed
10-Jul-98	2	-	-	-	-	-	-	-	2
11-Jul-98	2	-	-	-	-	-	-	-	2
12-Jul-98	2	-	-	-	-	-	-	-	2
13-Jul-98	2	-	-	-	-	-	-	-	2
14-Jul-98	3	-	-	-	-	-	-	-	3
15-Jul-98	1	-	-	-	-	-	-	-	1
16-Jul-98	4	-	-	-	-	-	-	-	4
17-Jul-98	1	-	-	-	-	-	-	-	1
18-Jul-98	5	-	-	-	-	-	-	-	5
19-Jul-98	1	-	-	-	-	-	-	-	1
20-Jul-98	2	-	-	1	-	-	-	-	3
21-Jul-98	6	-	-	-	-	-	-	-	6
22-Jul-98	3	-	-	1	-	-	-	-	4
23-Jul-98	2	-	-	-	-	-	-	-	2
24-Jul-98	4	-	-	-	-	-	-	-	4
25-Jul-98	3	-	-	-	-	-	-	-	3
26-Jul-98	6	-	-	-	-	-	-	-	6
28-Jul-98	1	-	-	-	-	-	-	-	1
29-Jul-98	2	-	-	-	-	-	-	-	2
30-Jul-98	2	-	-	-	-	-	-	-	2
31-Jul-98	1	-	-	-	-	-	-	-	1
02-Aug-98	1	-	-	-	-	-	-	-	1
03-Aug-98	4	-	-	-	-	-	-	-	4
04-Aug-98	4	-	-	-	-	-	-	-	4
05-Aug-98	2	1	-	-	-	-	-	-	3
14-Aug-98	-	-	-	-	-	-	1	-	1
Totals	9,406	9	7,302	1,056	17	3	224	1	18,018

*Note: Prior to 1 June 1998, all fish entering the McNary Dam juvenile fish facility were bypassed to the river. Transportation from McNary Dam began on 1 June.

Appendix Table 9.0 Total adult returns (hatchery and wild) to Lower Granite Dam from spring/summer chinook salmon smolts tagged as inriver migrants at Lower Granite Dam in spring 1995. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Length: Adult return date Bonn	Length: Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Upstream tagging (mm)	return (mm)	adult recovery[a] Date	adult recovery[a] Location[b]
4/10/95	7/4/97	225D243522[c]		C5003	---	890		NR
4/11/95	5/26/96	225B68765D[c]		T2106	---	540	7/8/96	RPDTRP
	5/29/96	225C7E5C64		T0170	139	510	7/4/96	RPDTRP
	5/5/98	225C706C25[c]		C3269	---	970		NR
	5/10/98	225C1A120F		C3274	---	820		NR
	6/6/98	225A61256A		C5028	---	990		NR
4/12/95	5/9/97	225C3F450A[c]		C3026	144	720		NR
	5/26/97	225C385032[c]		-----	---	790		NR
	6/3/97	225E182D29		C4038	140	780		NR
4/13/95	5/9/98	225D682671[c]		C2329	---	820		NR
4/14/95	5/28/97	225B755A21		C3124	133	750		NR
	5/31/97	225C5C5A3A		C2216	---	680		NR
	6/27/98	225E151A16		C4149	---	930		NR
4/15/95	5/21/97	225D50412A		C3066	---	770		NR
	5/25/97	224156371B		C2145	---	760		NR
	6/5/97	225D29667D		C2241	---	760		NR
	6/9/97	225D6E1B18		C2252	---	750		NR
	6/22/97	225B726D2E[c]		C2289	---	740		NR
	6/24/98	225D411B27		C5042	---	960		NR
6/12/98	6/29/98	225C272834[c]		C3303	110	840		NR
4/16/95	5/8/97	225D696428		C2026	---	770		NR
	5/25/97	225D6B175C		C2143	---	790	5/27/97	Oxbow TRP
	6/12/97	225C7C6438		C3196	---	720	8/13/97	SECESR
4/17/95	7/18/96	225D563066		T0201	---	410		NR
	5/13/97	225C7C6C7E		C2096	---	760	7/7/97	RAPH
	5/26/97	225C6B0D34		C4022	---	790		NR
	5/28/97	224E7F024E		C3127	---	750		NR
	6/16/97	225D51555A		C3212	---	720		NR
	7/5/97	225A6C6768		C4094	---	810	8/19/97	IMNAHW
	5/11/98	225C733623		C3280	---	890		NR
4/18/95	5/11/97	225C0B5C66		C2068	---	690	5/29/97	Oxbow TRP
	5/12/97	225C4C693C		--NA-	---	---	6/25/97	RAPH
	5/21/97	225E166B42		C3071	---	800		NR

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	Length	adult return Date	adult recovery[a] Location[b]
4/18/95	6/1/97	2250154C1E		C3151	---	790		NR	
	6/6/97	225D785619		C3169	---	790		NR	
	6/9/97	225C024629		C3186	---	750		NR	
	6/16/97	225D743F5D[c]		C3213	---	790		NR	
	6/22/97	225A6B0826		C3224	---	740		NR	
	6/29/97	225C087C16		C4087	---	840		NR	
	7/2/97	225B1B3906		C3245	---	770	7/22/97	IMNAHW	
	7/9/97	225D6B2515		C4096	---	780		NR	
	4/30/98	225B784062		C4106	---	840		NR	
	6/24/98	225B006218		C5043	---	920		NR	
4/19/95	5/27/96	225B157B77[c]		T0162	---	520	6/28/96	KOOS	
	5/29/96	2241427C53		T0168	---	460		NR	
	6/4/96	224160024F		T0186	---	450	7/6/96	RPDTRP	
	6/20/96	22414E694F		T0193	118	490		NR	
	5/8/97	225D233822		C3011	138	780	7/1/97	LSALR	
	5/9/97	225013621E		C2054	---	710		NR	
	5/13/97	2246655C77		C2093	---	740	6/29/97	RAPH	
	5/21/97	224E5A7B20		C3067	---	830		NR	
	5/22/97	226066683B		C4010	---	790		NR	
	5/23/97	225D475D1B		C3090	---	720		LSR/RR	
	5/25/97	226021097C[c]		C2156	---	690		NR	
	5/25/97	225B1F2857		C3086	---	770		NR	
	5/27/97	225B16333B		C2161	---	760		NR	
	5/27/97	222863735F		C2173	---	720		NR	
	5/31/97	2260555705[c]		C2215	---	720		NR	
	6/1/97	224E747563		-----	---	760		LOOH	
	6/10/97	222A16345E		C3190	---	740	7/10/97	RAPH	
	6/12/97	22464D582D		C2264	---	780		NR	
	6/16/97	225E7C475B		C4078	---	810		NR	
	6/18/97	225E325241[c]		C2280	---	730		NR	
	6/24/97	222A247D5E		C2300	---	790		NR	
	7/1/97	224F007606		C4090	---	790		NR	
	7/4/97	225C4C3349		C4067	119	780		NR	
	7/5/97	22415C6102		C3248	---	790	9/2/97	JOHNSC	
	5/1/98	222A233D58		C4108	---	920		NR	
	5/4/98	225A767E2F		C2319	---	830	9/6/98	REDR	
	5/4/98	225D4A0436		C5016	---	1050		NR	
4/20/95	5/12/97	225E21640D		C3036	---	800		NR	
	5/12/97	22604B172C		C2071	---	740	7/11/97	RAPH	
	5/16/97	22287E2B3D		C1011	---	720		NR	
	5/25/97	225D105850		C3103	---	730		NR	
	6/1/97	22454B0719		C3148	152	770		NR	

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging recovery[a] Date	Upstream tagging recovery[a] Location[b]
4/20/95	6/2/97	224657635D	C3154	---	760		NR	
	6/3/97	2245553B68	C4040	---	820	7/31/97	RAPH	
	6/15/97	22603E7560	C2273	135	720		NR	
	7/3/97	225E7D466C	C4066	---	810		NR	
4/21/95	5/1/97	22484B4445[c]	C3002	---	760		NR	
	5/6/97	2245560952[c]	C1004	---	640		NR	
	5/9/97	22493C393F	C3020	147	790		NR	
	5/10/97	22603B3422[c]	C2063	---	750		NR	
	5/16/97	225F3D7119	C3062	---	790	7/21/97	RAPH	
	5/25/97	2245247454	C3097	---	820		NR	
	5/31/97	2260504557	C2214	---	750		NR	
	5/31/97	22482E5661	C2219	---	720		NR	
	6/1/97	225F35514D	C3149	---	780		NR	
	6/3/97	225F524019	C2235	141	760	7/17/97	RAPH	
	6/12/97	22482F4728	C4060	---	790		NR	
	6/14/97	2248473123	C2272	---	770		NR	
4/30/98	5/17/98	22602F4F17	C5022	---	950		NR	
4/22/95	5/30/96	22603B1615	T0171	139	500	7/15/96	RPDTRP	
	5/8/97	2246544420	C3022	---	790		NR	
	5/13/97	225F72565E	C3046	---	750		NR	
	5/15/97	225E691863	C3056	---	790		NR	
	5/17/97	2246725422	-NA-	---	---		NR	
	5/28/97	224662686F	C3122	---	820	7/12/97	RAPH	
	5/30/97	22604E045D	C2193	---	650		NR	
	6/10/97	2260480949	C3193	---	710		NR	
	7/13/97	2246247F16	C3254	140	780	8/19/97	IMNAHW	
	6/23/98	2260592A25	C3298	---	870		NR	
4/23/95	6/24/96	22450E7E01	T0194	148	580	7/11/96	RPDTRP	
	4/30/97	2245612509	C2001	---	730	7/13/97	LSR/RR	
	5/8/97	225F6D4B1B	C2037	---	750		RAPH	
	5/14/97	22473D482D	-----	---	740		NR	
	5/27/97	225F6E0163	C2164	---	720		NR	
	6/13/97	22464D4718	C4063	---	740		NR	
4/24/95	5/30/96	226005053B	T0169	---	420	7/3/96	RPDTRP	
	6/20/96	22460D0C51	T0192	---	510		NR	
	5/7/97	22460A246B	C3010	142	780	6/28/97	LSR/RR	
	5/7/97	222A3A623B	C3013	---	770		NR	
	5/23/97	2247372102	C3089	146	740	7/7/97	KOOS	
	5/24/97	2245376F64	C2138	---	710	6/11/97	KOOS	
	7/3/97	22457B090A	C2311	120	630		NR	

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number		Length Upstream tagging (mm)	Length Upstream tagging (mm)	adult return Date	adult recovery[a] Location[b]
4/24/95	5/2/98	2246664B77		C5013	---	880	6/25/98	KOOS	
4/25/95	5/31/96	2247577E38		T0176	---	420		NR	
	6/4/96	22493E603A		T2107	---	530	7/8/96	CROTRP	
	5/3/97	22462C2C51		C2005	---	740		NR	
	5/9/97	224743761E		C2058	---	770	7/17/97	RAPH	
	5/10/97	2247670A5D		C2060	133	750	6/9/97	KOOS	
	5/13/97	22462B7D0A		C2088	---	740	7/18/97	RAPH	
	5/22/97	22457C106E		C4014	---	---	6/30/97	RAPH	
	5/23/97	226053764E		C2127	---	690		NR	
	5/28/97	2250077D4B		C2177	139	720	7/25/97	RAPH	
	7/16/97	224805641B		C3257	---	720		NR	
	5/6/98	2247097142		C4118	---	940	7/23/98	DWOR	
	6/5/98	2247714A23		C5030	---	920		NR	
	6/15/98	2246421119		C3289	---	950		NR	
	6/25/98	2249231B4C		C5044	---	960		NR	
4/26/95	5/8/96	22606E575A		T0150	---	500	6/25/96	RPDTRP	
	5/25/96	2246273E3F		T0160	---	500	6/28/96	KOOS	
	5/27/96	22492F6E2A		T0163	---	490		NR	
	5/31/96	2248623F44		T0174	---	500		NR	
	5/7/97	2246577117		C2027	---	690		NR	
	5/9/97	225E745651		C2040	---	800	7/17/97	RAPH	
	5/12/97	2246155326		C1007	---	760		NR	
	5/25/97	2260767B3E		C2147	---	700		NR	
	5/28/97	22477E4F32		C2172	---	630	8/20/97	RAPH	
	6/12/97	2247545519		C4059	132	770	6/27/97	KOOS	
	4/25/98	22467C483C		C4103	---	890		NR	
	5/19/98	2261023E0C		-LGH-	---	830		NR	
4/27/95	5/16/96	22467B1418		T2103	---	450	7/17/96	RPDTRP	
	5/6/97	225D2D1441		-NA-	---	---		NR	
	5/7/97	22477E541D		C4004	---	820	6/17/97	KOOS	
	5/10/97	224161737C		C1005	---	740		NR	
	5/22/97	2245651E29		C2118	---	760		NR	
	5/23/97	2249290170		C2134	---	740		NR	
	5/29/97	2246525516[c]		C3132	---	740		NR	
	6/3/97	22610B6A52[c]		C3159	---	710		NR	
	5/6/98	22467C3773		C4115	---	910		NR	
	5/8/98	225E213975		C2327	---	890		NR	
4/28/95	5/18/96	22457D7234		T0156	---	460		NR	
	5/9/97	225E794A3C		C2053	177	760	7/16/97	RAPH	
	5/10/97	22472A7312		C4007	---	810		NR	

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
4/28/95	5/13/97	225D376120	C2079	---	700		NR	
	5/13/97	2246477C04	C3043	---	800	6/29/97	LSALR	
	5/30/97	225B0B2A03	C4035	---	790		NR	
	6/3/97	225D320F2A	C2232	132	700	8/15/97	RAPH	
	6/6/97	225E40146B	C2244	149	720		NR	
	6/22/98	224677051E	C4146	---	930		NR	
4/29/95	5/17/96	225F561F59	T0155	---	430		NR	
	5/6/97	22492A681C	C2021	---	680		NR	
	5/8/97	225D050065	C2044	---	740		NR	
	5/10/97	224733656D	C3030	142	800	6/8/97	CLWRNF	
	5/10/97	2247060740	C2059	---	760	6/24/97	RAPH	
	5/15/97	2247721211	C2103	---	710	7/15/97	RAPH	
	5/25/97	222A302800	C2150	---	720	6/30/97	LSALR	
	5/28/97	224813224B	C3119	142	780		NR	
	5/30/97	2260462B42	C2194	---	740	7/15/97	RAPH	
	5/31/97	225C7F1261	C2209	---	780		NR	
	6/2/97	225D366851	C3155	---	710		NR	
	6/3/97	225E5A2816	C4039	---	770		NR	
	6/6/97	2248295C6C	C3171	---	760		NR	
	6/8/97	2247086411	C3182	---	760	7/23/97	RAPH	
	6/13/97	225E2A6F78	C3202	---	740		NR	
	6/16/97	22482E7662	C4075	---	850	8/8/97	IMNAHW	
	6/22/97	2248160064	C2291	---	720	7/25/97	RAPH	
4/30/95	5/15/96	2245541D51	T0153	---	480	7/1/96	RPDTRP	
	5/16/96	2249360C4B	T0154	---	460		NR	
	6/1/96	225E546A67	T0178	---	430		NR	
	5/2/97	22474E7368	C2002	---	700		NR	
	5/7/97	22480A275D	C2019	139	730	7/7/97	RAPH	
	5/10/97	2247606F61	C1006	---	720	6/26/97	RAPH	
	5/10/97	225F145760	C2062	---	740		NR	
	5/11/97	225D1F474D	C2069	---	750		NR	
	5/13/97	2245716863	C3042	---	750		NR	
	5/14/97	22480F580A	C3045	---	810		NR	
	5/14/97	2245212172	-NA-	138	---		NR	
	5/19/97	2247741660	C3064	---	780	7/16/97	RAPH	
	5/22/97	2247745C6B	C2123	---	730	7/6/97	CROTRP	
	5/26/97	22454B7C4C	C3108	137	770		NR	
	6/4/97	225B5D314A	C4041	---	810	7/23/97	RAPH	
	6/6/97	225D51747A	C3172	---	810		NR	
	6/13/97	225C6C550A	C2267	---	640		NR	
	5/10/98	2248261A13	C2331	---	890		NR	

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length (mm)	Length (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
5/1/95	5/29/96	225A523106	T0166	128	460	7/5/96	RPDTRP	
	5/4/97	224834382F	C2006	---	710	7/11/97	RAPH	
	5/4/97	22473A1B42	C2007	142	690	6/29/97	LSR/RR	
	5/5/97	2250282969[c]	C2010	145	760		NR	
	5/8/97	2250045D3B	C2024	---	720		NR	
	5/9/97	224E620560[c]	C2045	---	780		NR	
	5/13/97	225F5E4042	C2095	103	760		NR	
	5/14/97	225E321B5D	-NA-	138	---		Oxbow TRP	
	5/25/97	2247097827	C2154	---	730		NEWSOC	
	5/26/97	2260327418	C3104	---	760		NR	
	6/1/97	225C7A2876	C2227	---	740		NR	
	6/4/97	225D02355E	C2239	---	710		NR	
	6/9/97	22480B2270	C4053	---	810		NR	
	6/12/97	224F4B4E78	C4058	124	770	7/3/97	KOOS	
	6/15/97	22605A4349	C2274	---	690		NR	
	4/25/98	2245740F0C	C4104	---	870		NR	
	4/25/98	225C177703[c]	C4102	---	880		NR	
	6/13/98	2250224D39	C5033	---	930	7/30/98	DWOR	
5/2/95	6/26/96	225C0A344E	T0196	---	510	7/25/96	SALSFW	
	5/11/97	225B237F7D	C2065	---	670	7/3/97	LSR/RR	
	5/26/97	225C270071	C2162	---	700	7/9/97	LSALR	
	5/30/97	225C0C403B	C2197	---	770		NR	
	6/1/97	225D1C4207[c]	C3150	---	840	8/13/97	DWOR	
	6/3/97	225B573059	C3161	---	760		NR	
	6/3/97	225B351D34	C3157	147	690		NR	
	6/4/97	225B6B4653	C2240	---	760		NR	
	6/6/97	222A241178	C3170	---	780	8/13/97	DWOR	
	6/12/97	2250143814	C4061	---	790	7/29/97	DWOR	
	6/27/97	225C484341	C2306	---	710	8/29/97	RAPH	
	7/1/97	225D7D675F[c]	C2310	133	670		NR	
	5/24/98	2250392074	C4130	---	860	6/6/98	CLWRNF	
5/3/95	5/25/97	225A446106	C2149	---	730		NR	
	5/25/97	225041357E	C3094	---	760		NR	
	5/25/97	225D02001A	C2158	---	730		NR	
	6/9/97	225B391C4C[c]	C4051	---	770		NR	
	6/12/97	224F580658	C3197	---	780	7/17/97	RAPH	
	6/14/97	2245166E44	C3209	---	790		NR	
	6/26/97	225A722929	C4085	---	850	8/19/97	IMNAHW	
	5/3/98	225C321A09	C3265	123	870		NR	
	5/3/98	225C1C4932	C4112	---	930		DWOR	
	5/10/98	2250174025	C3277	131	860		NR	
	5/26/98	2241512134	C2343	---	870		NR	

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging recovery[a] Date	Upstream tagging recovery[a] Location[b]
5/3/95	6/20/98	224E715275	C5038	---	930		NR	
5/4/95	5/6/97	225B784F29	C1002	---	720	6/30/97	LSR/RR	
	5/8/97	224F6C7126	C2036	---	780		NR	
	5/9/97	225C49587A	C0001	---	690		NR	
	5/10/97	224F665618[c]	C2056	---	750		NR	
	5/10/97	224F3A7A11	C2057	---	750		NR	
	5/11/97	222A192A60	C3034	---	810	6/3/97	Oxbow TRP	
	5/12/97	222A19763B	C3040	---	740		NR	
	5/21/97	222870186B	C2119	---	720		NR	
	5/22/97	2250652438	C2120	142	730	7/4/97	RAPH	
	5/23/97	225A754453	C1012	---	620		NR	
	5/23/97	224F3F007F	C2132	---	740	7/16/97	RAPH	
	5/26/97	2241442063	C3107	---	720		LSR/RR	
	5/27/97	2250224272	C3120	138	800	7/25/97	RAPH	
	5/28/97	225D6E7E5B	C4024	140	800	7/22/97	RAPH	
	5/28/97	225B6B0C58	C2183	---	730		NR	
	5/29/97	225C19761C	C2192	---	790		NR	
	5/29/97	224F453511	C4025	---	790	7/16/97	RAPH	
	5/30/97	222A310568	C2203	---	760		NR	
	5/31/97	2228623A57	C2205	---	720		NR	
	5/31/97	224F6B1A72	C2222	---	780		NR	
	5/31/97	222A3B7768	C3145	---	780		NR	
	5/31/97	225E4A3804	C2201	---	730		NR	
	6/6/97	224F645817	C3174	---	810	7/21/97	RAPH	
	6/9/97	2241455B22	C3180	---	710		NR	
	6/12/97	225C503647	C4057	---	750	7/9/97	WALTONC	
	6/20/97	225B1A0C56	C4080	146	780	7/2/97	KOOS	
	6/27/97	224F754B06	C3236	---	810		NR	
	5/4/98	2228744105[c]	C4068	---	870	7/11/98	SNAKER	
	5/10/98	2250315213[c]	C2332	129	850		NR	
	5/14/98	225C3F0169	C4122	150	890		NR	
	5/22/98	224F55595B	C4129	---	900		NR	
5/5/95	5/26/96	2251015D47	T0161	---	530	7/8/96	RPDTRP	
	6/4/96	2249550131	T0187	---	480	7/3/96	RPDTRP	
	6/4/96	2249174760	T0188	---	490	6/25/96	DWOR	
	7/6/96	2250311A2C	T0199	---	510	7/30/96	SALSFW	
	5/5/97	225B364C63	C2013	---	690	8/12/97	DWOR	
	5/6/97	22414E310E	C2023	---	740		NR	
	5/8/97	225B5A7829	C2030	138	780		NR	
	5/8/97	2251431B16	C2047	---	720		NR	
	5/9/97	22286D554E[c]	C2041	137	780		NR	
	5/12/97	222866321D	C2080	---	770	7/12/97	RAPH	

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length Upstream tagging (mm)	Length adult return (mm)	Adult return Date	Adult return Location[b]
5/5/95	5/13/97	2249697115	C3044	---	790	7/10/97	RAPH	
	5/15/97	2251046E35	C2102	148	720	7/6/97	RAPH	
	5/22/97	225C5A1E32	C3077	---	750		NR	
	5/22/97	225127395B	C2121	153	770		NR	
	5/24/97	224F415567	C3092	---	760	7/10/97	RAPH	
	5/25/97	22512A3914	C3095	---	750	7/22/97	DWOR	
	5/27/97	222A2A0D66	C3117	---	810	7/22/97	RAPH	
	5/28/97	22504E7301	C2182	---	700	7/11/97	RAPH	
	6/2/97	2250594541	C2231	---	740		NR	
	6/15/97	22512A7F43	C2275	---	760		NR	
	7/1/97	224F4A3C5C	C4091	---	810		NR	
	5/7/98	224F4E4A7A	C3272	149	890		NR	
	5/11/98	22506A477D	C3278	---	790		NR	
	5/14/98	22506C0C3E	C3283	148	900		NR	
	8/16/98	22287E4016	-----	---	---		NR	
5/6/95	6/11/96	225A53004C	T0190	---	500	7/2/96	DWOR	
	5/11/97	22506F552F	C2064	---	750	7/4/97	LSALR	
	5/13/97	225D444B38	C2094	136	770	7/8/97	LSR/RR	
	5/13/97	225126194C	C2087	---	740		NR	
	5/26/97	22503D2775	C3100	---	790	7/29/97	DWOR	
	5/28/97	22495A703E	C2169	131	770	7/22/97	DWOR	
	5/31/97	2250612D51	C2200	---	780		NR	
	6/1/97	224F417E35	C2225	142	740		NR	
	6/9/97	225C53330D	C2255	---	690		NR	
	6/19/97	225077210A	C2281	---	780	7/14/97	DWOR	
	5/3/98	22512B6375	C3264	---	890		NR	
	7/3/98	2245383000	C5046	131	910		NR	
5/7/95	6/3/96	2251242A41	T0182	---	470	7/5/96	RPDTRP	
	5/3/97	22493D4A38[c]	C3003	---	740		NR	
	5/5/97	224934754D	C2008	---	740	7/1/97	LSALR	
	5/14/97	22494B2275	C3052	---	770	7/12/97	RAPH	
	5/21/97	224942624F	C2116	---	780		NR	
	5/25/97	2251485400	C2148	---	750	7/4/97	LSALR	
	5/26/97	22493E3427	C2163	---	780		NR	
	5/27/97	2249316305	-----	---	760		LOOH	
	5/27/97	225069641A	C2166	---	740	7/11/97	RAPH	
	5/29/97	2249367855	C2190	---	680		NR	
	6/4/97	22611C0049[c]	C4042	148	800		NR	
	6/6/97	22505D4074	C2245	146	750	8/12/97	DWOR	
	6/13/97	2228717459	C2270	---	750		NR	
	6/13/97	22513F1840	C4070	137	830		NR	
	6/22/97	22613B3F17	C3226	135	720	7/23/97	SALSFW	

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number		Length Upstream tagging (mm)	Length adult return (mm)	recovery[a] Date	recovery[a] Location[b]
5/7/95	4/30/98	226123722A		C4105	---	760		NR	
	5/5/98	225069453A		C4114	---	910		NR	
	5/14/98	22494F5744		C3282	---	800		NR	
5/8/95	6/4/96	226129144E[c]		T0185	---	430		NR	
	5/20/97	22514F2E09		C2114	---	770		NR	
	5/28/97	2261455D7F		C2184	---	700		NR	
	6/5/97	2261302D79		C2243	148	720		NR	
	6/20/97	22495B1347		C2286	---	710	7/17/97	RAPH	
	6/23/97	226118557B[c]		C2298	---	760		NR	
	7/1/97	2251187137		C2309	---	760		NR	
	7/7/97	2249156F42		C3249	---	780		NR	
	5/10/98	2251061B6F		C2330	---	880		NR	
	5/19/98	2249630121		C5024	102	910		NR	
5/9/95	5/10/97	22626A5D53		C3031	---	780	7/7/97	RAPH	
	5/28/97	2262575E70		C3125	---	730		NR	
	5/9/98	2247360953		C3275	---	850		NR	
5/10/95	5/24/97	2262675257		C2139	---	700	7/5/97	LSALR	
	5/30/97	2261471D61		C3133	---	780	7/15/97	RAPH	
	6/6/97	2250203025		C2247	145	720	7/15/97	RAPH	
	6/19/97	2261602706		C2282	---	730		NR	
	7/7/97	22615E6950		C3250	---	830		NR	
	7/10/97	224E60520D		C2316	---	750		NR	
	5/17/98	2262756136		C5023	---	1030		NR	
	6/13/98	2262016D7C[c]		C4138	---	900		NR	
5/11/95	5/3/97	2261652B42		C3006	---	780	5/29/97	Oxbow TRP	
	5/27/97	22627E5929		C2165	---	770		NR	
	5/30/97	2261527D6F		C1013	---	660	7/17/97	RAPH	
	6/9/97	22614A2A5E		C2259	149	700	7/28/97	RAPH	
	6/12/97	2262787C78[c]		C3195	---	770	8/8/97	RAPH	
	6/30/97	2261641E12		C2307	---	700		NR	
	5/24/98	2262200D05		C5026	---	880		NR	
	6/8/98	226159692F		C4135	---	880		NR	
5/29/98	6/19/98	22621B7518[c]		C5036	---	970		NR	
5/14/95	5/9/97	22622A1739[c]		C3021	---	770	7/23/97	RAPH	
	5/12/97	2263064F50		C2074	---	770		NR	
5/15/95	6/4/97	226315591F[c]		C3160	---	760		NR	
5/25/95	6/28/97	227E750526		C3238	---	790		NR	

Appendix Table 9.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	At adult Jaw tag number	Length At smolt (mm)	Length Upstream tagging (mm)	return Date	adult recovery[a] Location[b]
5/29/95		5/30/97	227F165079[c]	C4033	112	740	NR	
6/3/95		6/21/97	227F17082C	C3220	---	790	NR	
6/11/95	5/26/98	6/22/98	227F1D1862[c]	C2349	---	870	NR	
6/13/95		6/3/97	227E632E73[c]	C2238	---	710	NR	
6/15/95		5/4/97	227E42155C	C3007	---	730	NR	
6/22/95		5/5/98	227E6D7214	C3268	134	840	NR	

Total adult returns:

Jacks	32
2-ocean	275
3-ocean	58

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

[c] These fish were released into the tailrace of Lower Granite Dam and were subsequently collected at a downstream dam where they were not observed to have been returned to the river. They were not used in any calculations.

Appendix Table 9.1 Total adult returns to Lower Granite Dam from hatchery spring/summer chinook salmon smolts tagged as inriver migrants at Lower Granite Dam in spring 1995. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging date	Adult return recovery[a] Date	Adult return recovery[a] Location[b]
4/11/95	5/26/96	225B68765D[c]	T2106	---	540		7/8/96	RPDTRP	
	5/29/96	225C7E5C64	T0170	139	510		7/4/96	RPDTRP	
4/12/95	5/9/97	225C3F450A[c]	C3026	144	720			NR	
	6/3/97	225E182D29	C4038	140	780			NR	
4/14/95	5/31/97	225C5C5A3A	C2216	---	680			NR	
4/15/95	5/21/97	225D50412A	C3066	---	770			NR	
	5/25/97	224156371B	C2145	---	760			NR	
	6/5/97	225D29667D	C2241	---	760			NR	
	6/9/97	225D6E1B18	C2252	---	750			NR	
4/16/95	5/8/97	225D696428	C2026	---	770			NR	
4/17/95	5/13/97	225C7C6C7E	C2096	---	760		7/7/97	RAPH	
	5/26/97	225C6B0D34	C4022	---	790			NR	
	5/28/97	224E7F024E	C3127	---	750			NR	
	7/5/97	225A6C6768	C4094	---	810		8/19/97	IMNAHW	
4/18/95	5/21/97	225E166B42	C3071	---	800			NR	
	6/1/97	2250154C1E	C3151	---	790			NR	
	6/16/97	225D743F5D[c]	C3213	---	790			NR	
	7/2/97	225B1B3906	C3245	---	770		7/22/97	IMNAHW	
	4/30/98	225B784062	C4106	---	840			NR	
4/19/95	5/27/96	225B157B77[c]	T0162	---	520		6/28/96	KOOS	
	5/29/96	2241427C53	T0168	---	460			NR	
	6/4/96	224160024F	T0186	---	450		7/6/96	RPDTRP	
	5/8/97	225D233822	C3011	138	780		7/1/97	LSALR	
	5/9/97	225013621E	C2054	---	710			NR	
	5/21/97	224E5A7B20	C3067	---	830			NR	
	5/22/97	226066683B	C4010	---	790			NR	
	5/23/97	225D475D1B	C3090	---	720			LSR/RR	
	5/25/97	225B1F2857	C3086	---	770			NR	
	5/27/97	225B16333B	C2161	---	760			NR	
	5/27/97	222863735F	C2173	---	720			NR	
	6/1/97	224E747563	-----	---	760			LOOH	
	6/10/97	222A16345E	C3190	---	740		7/10/97	RAPH	
	6/12/97	22464D582D	C2264	---	780			NR	

Appendix Table 9.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length (mm)	Upstream tagging (mm)	return adult recovery[a] Date	return adult recovery[a] Location[b]
4/19/95	6/16/97	225E7C475B		C4078	---	810		NR
	6/18/97	225E325241[c]		C2280	---	730		NR
	6/24/97	222A247D5E		C2300	---	790		NR
	5/1/98	222A233D58		C4108	---	920		NR
4/20/95	5/12/97	225E21640D		C3036	---	800		NR
	5/12/97	22604B172C		C2071	---	740	7/11/97	RAPH
	5/16/97	22287E2B3D		C1011	---	720		NR
	5/25/97	225D105850		C3103	---	730		NR
	6/1/97	22454B0719		C3148	152	770		NR
	6/3/97	2245553B68		C4040	---	820	7/31/97	RAPH
	6/15/97	22603E7560		C2273	135	720		NR
4/21/95	5/1/97	22484B4445[c]		C3002	---	760		NR
	5/9/97	22493C393F		C3020	147	790		NR
	5/10/97	22603B3422[c]		C2063	---	750		NR
	5/16/97	225F3D7119		C3062	---	790	7/21/97	RAPH
	5/25/97	2245247454		C3097	---	820		NR
	5/31/97	2260504557		C2214	---	750		NR
	5/31/97	22482E5661		C2219	---	720		NR
	6/1/97	225F35514D		C3149	---	780		NR
	6/12/97	22482F4728		C4060	---	790		NR
	6/14/97	2248473123		C2272	---	770		NR
4/22/95	5/30/96	22603B1615		T0171	139	500	7/15/96	RPDTRP
	5/8/97	2246544420		C3022	---	790		NR
	5/13/97	225F72565E		C3046	---	750		NR
	5/15/97	225E691863		C3056	---	790		NR
	5/17/97	2246725422		-NA-	---	---		NR
	5/28/97	224662686F		C3122	---	820	7/12/97	RAPH
	5/30/97	22604E045D		C2193	---	650		NR
	7/13/97	2246247F16		C3254	140	780	8/19/97	IMNAHW
4/23/95	6/24/96	22450E7E01		T0194	148	580	7/11/96	RPDTRP
	4/30/97	2245612509		C2001	---	730	7/13/97	LSR/RR
	5/8/97	225F6D4B1B		C2037	---	750		RAPH
	5/14/97	22473D482D		-----	---	740		NR
	5/27/97	225F6E0163		C2164	---	720		NR
4/24/95	5/30/96	226005053B		T0169	---	420	7/3/96	RPDTRP
	6/20/96	22460D0C51		T0192	---	510		NR
	5/7/97	22460A246B		C3010	142	780	6/28/97	LSR/RR
	5/7/97	222A3A623B		C3013	---	770		NR
	5/23/97	2247372102		C3089	146	740	7/7/97	KOOS

Appendix Table 9.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
4/24/95	5/24/97	2245376F64	C2138	---	710	6/11/97	KOOS	
	5/2/98	2246664B77	C5013	---	880	6/25/98	KOOS	
4/25/95	5/31/96	2247577E38	T0176	---	420		NR	
	6/4/96	22493E603A	T2107	---	530	7/8/96	CROTRP	
	5/3/97	22462C2C51	C2005	---	740		NR	
	5/9/97	224743761E	C2058	---	770	7/17/97	RAPH	
	5/10/97	2247670A5D	C2060	133	750	6/9/97	KOOS	
	5/13/97	22462B7D0A	C2088	---	740	7/18/97	RAPH	
	5/22/97	22457C106E	C4014	---	---	6/30/97	RAPH	
	5/23/97	226053764E	C2127	---	690		NR	
	5/28/97	2250077D4B	C2177	139	720	7/25/97	RAPH	
	7/16/97	224805641B	C3257	---	720		NR	
	5/6/98	2247097142	C4118	---	940	7/23/98	DWOR	
4/26/95	5/8/96	22606E575A	T0150	---	500	6/25/96	RPDTRP	
	5/25/96	2246273E3F	T0160	---	500	6/28/96	KOOS	
	5/27/96	22492F6E2A	T0163	---	490		NR	
	5/31/96	2248623F44	T0174	---	500		NR	
	5/7/97	2246577117	C2027	---	690		NR	
	5/9/97	225E745651	C2040	---	800	7/17/97	RAPH	
	5/12/97	2246155326	C1007	---	760		NR	
	5/25/97	2260767B3E	C2147	---	700		NR	
	6/12/97	2247545519	C4059	132	770	6/27/97	KOOS	
	4/25/98	22467C483C	C4103	---	890		NR	
	5/19/98	2261023E0C	-LGH-	---	830		NR	
4/27/95	5/16/96	22467B1418	T2103	---	450	7/17/96	RPDTRP	
	5/6/97	225D2D1441	-NA-	---	---		NR	
	5/7/97	22477E541D	C4004	---	820	6/17/97	KOOS	
	5/10/97	224161737C	C1005	---	740		NR	
	5/22/97	2245651E29	C2118	---	760		NR	
	5/23/97	2249290170	C2134	---	740		NR	
	5/29/97	2246525516[c]	C3132	---	740		NR	
	5/6/98	22467C3773	C4115	---	910		NR	
	5/8/98	225E213975	C2327	---	890		NR	
4/28/95	5/18/96	22457D7234	T0156	---	460		NR	
	5/9/97	225E794A3C	C2053	177	760	7/16/97	RAPH	
	5/10/97	22472A7312	C4007	---	810		NR	
	5/13/97	225D376120	C2079	---	700		NR	
	5/13/97	2246477C04	C3043	---	800	6/29/97	LSALR	
	5/30/97	225B0B2A03	C4035	---	790		NR	
	6/3/97	225D320F2A	C2232	132	700	8/15/97	RAPH	

Appendix Table 9.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
4/28/95	6/6/97	225E40146B	C2244	149	720		NR	
4/29/95	5/17/96	225F561F59	T0155	---	430		NR	
	5/6/97	22492A681C	C2021	---	680		NR	
	5/8/97	225D050065	C2044	---	740		NR	
	5/10/97	224733656D	C3030	142	800	6/8/97	CLWRNF	
	5/10/97	2247060740	C2059	---	760	6/24/97	RAPH	
	5/15/97	2247721211	C2103	---	710	7/15/97	RAPH	
	5/25/97	222A302800	C2150	---	720	6/30/97	LSALR	
	5/28/97	224813224B	C3119	142	780		NR	
	5/30/97	2260462B42	C2194	---	740	7/15/97	RAPH	
	5/31/97	225C7F1261	C2209	---	780		NR	
	6/2/97	225D366851	C3155	---	710		NR	
	6/3/97	225E5A2816	C4039	---	770		NR	
	6/6/97	2248295C6C	C3171	---	760		NR	
	6/8/97	2247086411	C3182	---	760	7/23/97	RAPH	
	6/13/97	225E2A6F78	C3202	---	740		NR	
	6/16/97	22482E7662	C4075	---	850	8/8/97	IMNAHW	
	6/22/97	2248160064	C2291	---	720	7/25/97	RAPH	
4/30/95	5/15/96	2245541D51	T0153	---	480	7/1/96	RPDTRP	
	5/16/96	2249360C4B	T0154	---	460		NR	
	6/1/96	225E546A67	T0178	---	430		NR	
	5/2/97	22474E7368	C2002	---	700		NR	
	5/7/97	22480A275D	C2019	139	730	7/7/97	RAPH	
	5/10/97	2247606F61	C1006	---	720	6/26/97	RAPH	
	5/11/97	225D1F474D	C2069	---	750		NR	
	5/13/97	2245716863	C3042	---	750		NR	
	5/14/97	22480F580A	C3045	---	810		NR	
	5/14/97	2245212172	-NA-	138	---		NR	
	5/19/97	2247741660	C3064	---	780	7/16/97	RAPH	
	5/22/97	2247745C6B	C2123	---	730	7/6/97	CROTRP	
	5/26/97	22454B7C4C	C3108	137	770		NR	
	6/4/97	225B5D314A	C4041	---	810	7/23/97	RAPH	
	6/6/97	225D51747A	C3172	---	810		NR	
	6/13/97	225C6C550A	C2267	---	640		NR	
	5/10/98	2248261A13	C2331	---	890		NR	
5/1/95	5/29/96	225A523106	T0166	128	460	7/5/96	RPDTRP	
	5/4/97	224834382F	C2006	---	710	7/11/97	RAPH	
	5/4/97	22473A1B42	C2007	142	690	6/29/97	LSR/RR	
	5/5/97	2250282969[c]	C2010	145	760		NR	
	5/8/97	2250045D3B	C2024	---	720		NR	
	5/9/97	224E620560[c]	C2045	---	780		NR	

Appendix Table 9.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
5/1/95	5/13/97	225F5E4042		C2095	103	760		NR
	5/14/97	225E321B5D		-NA-	138	---		Oxbow TRP
	5/26/97	2260327418		C3104	---	760		NR
	6/1/97	225C7A2876		C2227	---	740		NR
	6/4/97	225D02355E		C2239	---	710		NR
	6/9/97	22480B2270		C4053	---	810		NR
	6/12/97	224F4B4E78		C4058	124	770	7/3/97	KOOS
	6/15/97	22605A4349		C2274	---	690		NR
	4/25/98	2245740F0C		C4104	---	870		NR
	4/25/98	225C177703[c]		C4102	---	880		NR
	6/13/98	2250224D39		C5033	---	930	7/30/98	DWOR
5/2/95	6/26/96	225C0A344E		T0196	---	510	7/25/96	SALSFW
	5/11/97	225B237F7D		C2065	---	670	7/3/97	LSR/RR
	5/26/97	225C270071		C2162	---	700	7/9/97	LSALR
	5/30/97	225C0C403B		C2197	---	770		NR
	6/1/97	225D1C4207[c]		C3150	---	840	8/13/97	DWOR
	6/3/97	225B573059		C3161	---	760		NR
	6/3/97	225B351D34		C3157	147	690		NR
	6/4/97	225B6B4653		C2240	---	760		NR
	6/6/97	222A241178		C3170	---	780	8/13/97	DWOR
	6/12/97	2250143814		C4061	---	790	7/29/97	DWOR
	6/27/97	225C484341		C2306	---	710	8/29/97	RAPH
	7/1/97	225D7D675F[c]		C2310	133	670		NR
	5/24/98	2250392074		C4130	---	860	6/6/98	CLWRNF
5/3/95	5/25/97	225A446106		C2149	---	730		NR
	5/25/97	225041357E		C3094	---	760		NR
	5/25/97	225D02001A		C2158	---	730		NR
	6/9/97	225B391C4C[c]		C4051	---	770		NR
	6/12/97	224F580658		C3197	---	780	7/17/97	RAPH
	6/14/97	2245166E44		C3209	---	790		NR
	6/26/97	225A722929		C4085	---	850	8/19/97	IMNAHW
	5/3/98	225C321A09		C3265	123	870		NR
	5/3/98	225C1C4932		C4112	---	930		DWOR
	5/10/98	2250174025		C3277	131	860		NR
	5/26/98	2241512134		C2343	---	870		NR
	6/20/98	224E715275		C5038	---	930		NR
5/4/95	5/6/97	225B784F29		C1002	---	720	6/30/97	LSR/RR
	5/8/97	224F6C7126		C2036	---	780		NR
	5/9/97	225C49587A		C0001	---	690		NR
	5/10/97	224F665618[c]		C2056	---	750		NR
	5/10/97	224F3A7A11		C2057	---	750		NR

Appendix Table 9.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
5/4/95	5/11/97	222A192A60	C3034	---	810	6/3/97	Oxbow TRP	
	5/12/97	222A19763B	C3040	---	740		NR	
	5/21/97	222870186B	C2119	---	720		NR	
	5/22/97	2250652438	C2120	142	730	7/4/97	RAPH	
	5/23/97	225A754453	C1012	---	620		NR	
	5/23/97	224F3F007F	C2132	---	740	7/16/97	RAPH	
	5/26/97	2241442063	C3107	---	720		LSR/RR	
	5/27/97	2250224272	C3120	138	800	7/25/97	RAPH	
	5/28/97	225D6E7E5B	C4024	140	800	7/22/97	RAPH	
	5/28/97	225B6B0C58	C2183	---	730		NR	
	5/29/97	225C19761C	C2192	---	790		NR	
	5/29/97	224F453511	C4025	---	790	7/16/97	RAPH	
	5/30/97	222A310568	C2203	---	760		NR	
	5/31/97	2228623A57	C2205	---	720		NR	
	5/31/97	224F6B1A72	C2222	---	780		NR	
	5/31/97	222A3B7768	C3145	---	780		NR	
	5/31/97	225E4A3804	C2201	---	730		NR	
	6/6/97	224F645817	C3174	---	810	7/21/97	RAPH	
	6/9/97	2241455B22	C3180	---	710		NR	
	6/12/97	225C503647	C4057	---	750	7/9/97	WALTONC	
	6/20/97	225B1A0C56	C4080	146	780	7/2/97	KOOS	
	5/4/98	2228744105[c]	C4068	---	870	7/11/98	SNAKER	
	5/14/98	225C3F0169	C4122	150	890		NR	
	5/22/98	224F55595B	C4129	---	900		NR	
5/5/95	5/26/96	2251015D47	T0161	---	530	7/8/96	RPDTRP	
	6/4/96	2249550131	T0187	---	480	7/3/96	RPDTRP	
	6/4/96	2249174760	T0188	---	490	6/25/96	DWOR	
	7/6/96	2250311A2C	T0199	---	510	7/30/96	SALSFW	
	5/5/97	225B364C63	C2013	---	690	8/12/97	DWOR	
	5/6/97	22414E310E	C2023	---	740		NR	
	5/8/97	225B5A7829	C2030	138	780		NR	
	5/8/97	2251431B16	C2047	---	720		NR	
	5/9/97	22286D554E[c]	C2041	137	780		NR	
	5/12/97	222866321D	C2080	---	770	7/12/97	RAPH	
	5/13/97	2249697115	C3044	---	790	7/10/97	RAPH	
	5/15/97	2251046E35	C2102	148	720	7/6/97	RAPH	
	5/22/97	225C5A1E32	C3077	---	750		NR	
	5/22/97	225127395B	C2121	153	770		NR	
	5/24/97	224F415567	C3092	---	760	7/10/97	RAPH	
	5/25/97	22512A3914	C3095	---	750	7/22/97	DWOR	
	5/27/97	222A2A0D66	C3117	---	810	7/22/97	RAPH	
	5/28/97	22504E7301	C2182	---	700	7/11/97	RAPH	
	6/2/97	2250594541	C2231	---	740		NR	

Appendix Table 9.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	Length	return adult recovery[a] Date	return adult recovery[a] Location[b]
5/5/95	6/15/97	22512A7F43		C2275	---	760		NR	
	7/1/97	224F4A3C5C		C4091	---	810		NR	
	5/7/98	224F4E4A7A		C3272	149	890		NR	
	5/14/98	22506C0C3E		C3283	148	900		NR	
	8/16/98	22287E4016		-----	---	---		NR	
5/6/95	6/11/96	225A53004C		T0190	---	500	7/2/96	DWOR	
	5/11/97	22506F552F		C2064	---	750	7/4/97	LSALR	
	5/13/97	225D444B38		C2094	136	770	7/8/97	LSR/RR	
	5/13/97	225126194C		C2087	---	740		NR	
	5/26/97	22503D2775		C3100	---	790	7/29/97	DWOR	
	5/28/97	22495A703E		C2169	131	770	7/22/97	DWOR	
	5/31/97	2250612D51		C2200	---	780		NR	
	6/1/97	224F417E35		C2225	142	740		NR	
	6/9/97	225C53330D		C2255	---	690		NR	
	6/19/97	225077210A		C2281	---	780	7/14/97	DWOR	
	5/3/98	22512B6375		C3264	---	890		NR	
	7/3/98	2245383000		C5046	131	910		NR	
5/7/95	6/3/96	2251242A41		T0182	---	470	7/5/96	RPDTRP	
	5/3/97	22493D4A38[c]		C3003	---	740		NR	
	5/5/97	224934754D		C2008	---	740	7/1/97	LSALR	
	5/14/97	22494B2275		C3052	---	770	7/12/97	RAPH	
	5/21/97	224942624F		C2116	---	780		NR	
	5/25/97	2251485400		C2148	---	750	7/4/97	LSALR	
	5/26/97	22493E3427		C2163	---	780		NR	
	5/27/97	2249316305		-----	---	760		LOOH	
	5/27/97	225069641A		C2166	---	740	7/11/97	RAPH	
	5/29/97	2249367855		C2190	---	680		NR	
	6/4/97	22611C0049[c]		C4042	148	800		NR	
	6/6/97	22505D4074		C2245	146	750	8/12/97	DWOR	
	6/13/97	2228717459		C2270	---	750		NR	
	6/13/97	22513F1840		C4070	137	830		NR	
	6/22/97	22613B3F17		C3226	135	720	7/23/97	SALSFW	
	4/30/98	226123722A		C4105	---	760		NR	
	5/5/98	225069453A		C4114	---	910		NR	
	5/14/98	22494F5744		C3282	---	800		NR	
5/8/95	6/4/96	226129144E[c]		T0185	---	430		NR	
	5/20/97	22514F2E09		C2114	---	770		NR	
	5/28/97	2261455D7F		C2184	---	700		NR	
	6/5/97	2261302D79		C2243	148	720		NR	
	6/20/97	22495B1347		C2286	---	710	7/17/97	RAPH	
	7/1/97	2251187137		C2309	---	760		NR	

Appendix Table 9.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	Upstream tagging (mm)	adult return Date	adult recovery[a] Location[b]
5/8/95	7/7/97	2249156F42		C3249	---	780		NR	
	5/10/98	2251061B6F		C2330	---	880		NR	
5/9/95	5/10/97	22626A5D53		C3031	---	780	7/7/97	RAPH	
	5/28/97	2262575E70		C3125	---	730		NR	
	5/9/98	2247360953		C3275	---	850		NR	
5/10/95	5/24/97	2262675257		C2139	---	700	7/5/97	LSALR	
	5/30/97	2261471D61		C3133	---	780	7/15/97	RAPH	
	6/6/97	2250203025		C2247	145	720	7/15/97	RAPH	
	6/19/97	2261602706		C2282	---	730		NR	
	7/7/97	22615E6950		C3250	---	830		NR	
5/11/95	5/3/97	2261652B42		C3006	---	780	5/29/97	Oxbow TRP	
	5/27/97	22627E5929		C2165	---	770		NR	
	5/30/97	2261527D6F		C1013	---	660	7/17/97	RAPH	
	6/9/97	22614A2A5E		C2259	149	700	7/28/97	RAPH	
	6/12/97	2262787C78[c]		C3195	---	770	8/8/97	RAPH	
	5/24/98	2262200D05		C5026	---	880		NR	
	6/8/98	226159692F		C4135	---	880		NR	
5/29/98	6/19/98	22621B7518[c]		C5036	---	970		NR	
5/14/95	5/9/97	22622A1739[c]		C3021	---	770	7/23/97	RAPH	
	5/12/97	2263064F50		C2074	---	770		NR	
5/15/95	6/4/97	226315591F[c]		C3160	---	760		NR	
5/29/95	5/30/97	227F165079[c]		C4033	112	740		NR	
6/15/95	5/4/97	227E42155C		C3007	---	730		NR	

Total adult returns:

Jacks	30
2-ocean	237
3-ocean	34

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

These fish were released into the tailrace of Lower Granite Dam and were subsequently collected at a downstream dam where they were not observed to have been returned to the river. They were not used in any calculations.

Appendix Table 9.2 Total adult returns to Lower Granite Dam from wild spring/summer chinook salmon smolts tagged as inriver migrants at Lower Granite Dam in spring 1995. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length (mm)	Upstream tagging (mm)	Upstream tagging Date	adult recovery[a] Location[b]
4/10/95	7/4/97	225D243522[c]		C5003	---	890		NR
4/11/95	5/5/98	225C706C25[c]		C3269	---	970		NR
	5/10/98	225C1A120F		C3274	---	820		NR
	6/6/98	225A61256A		C5028	---	990		NR
4/12/95	5/26/97	225C385032[c]		-----	---	790		NR
4/13/95	5/9/98	225D682671[c]		C2329	---	820		NR
4/14/95	5/28/97	225B755A21		C3124	133	750		NR
	6/27/98	225E151A16		C4149	---	930		NR
4/15/95	6/22/97	225B726D2E[c]		C2289	---	740		NR
	6/24/98	225D411B27		C5042	---	960		NR
6/12/98	6/29/98	225C272834[c]		C3303	110	840		NR
4/16/95	5/25/97	225D6B175C		C2143	---	790	5/27/97	Oxbow TRP
	6/12/97	225C7C6438		C3196	---	720	8/13/97	SECESR
4/17/95	7/18/96	225D563066		T0201	---	410		NR
	6/16/97	225D51555A		C3212	---	720		NR
	5/11/98	225C733623		C3280	---	890		NR
4/18/95	5/11/97	225C0B5C66		C2068	---	690	5/29/97	Oxbow TRP
	5/12/97	225C4C693C		-NA-	---	---	6/25/97	RAPH
	6/6/97	225D785619		C3169	---	790		NR
	6/9/97	225C024629		C3186	---	750		NR
	6/22/97	225A6B0826		C3224	---	740		NR
	6/29/97	225C087C16		C4087	---	840		NR
	7/9/97	225D6B2515		C4096	---	780		NR
	6/24/98	225B006218		C5043	---	920		NR
4/19/95	6/20/96	22414E694F		T0193	118	490		NR
	5/13/97	2246655C77		C2093	---	740	6/29/97	RAPH
	5/25/97	226021097C[c]		C2156	---	690		NR
	5/31/97	2260555705[c]		C2215	---	720		NR
	7/1/97	224F007606		C4090	---	790		NR
	7/4/97	225C4C3349		C4067	119	780		NR
	7/5/97	22415C6102		C3248	---	790	9/2/97	JOHNSC

Appendix Table 9.2 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number		Length Upstream tagging (mm)	Length Upstream tagging (mm)	adult return Date	adult recovery[a] Location[b]
4/19/95	5/4/98	225A767E2F		C2319	---	830	9/6/98	REDR	
	5/4/98	225D4A0436		C5016	---	1050		NR	
4/20/95	6/2/97	224657635D		C3154	---	760		NR	
	7/3/97	225E7D466C		C4066	---	810		NR	
4/21/95	5/6/97	2245560952[c]		C1004	---	640		NR	
	6/3/97	225F524019		C2235	141	760	7/17/97	RAPH	
4/30/98	5/17/98	22602F4F17		C5022	---	950		NR	
4/22/95	6/10/97	2260480949		C3193	---	710		NR	
	6/23/98	2260592A25		C3298	---	870		NR	
4/23/95	6/13/97	22464D4718		C4063	---	740		NR	
4/24/95	7/3/97	22457B090A		C2311	120	630		NR	
4/25/95	6/5/98	2247714A23		C5030	---	920		NR	
	6/15/98	2246421119		C3289	---	950		NR	
	6/25/98	2249231B4C		C5044	---	960		NR	
4/26/95	5/28/97	22477E4F32		C2172	---	630	8/20/97	RAPH	
4/27/95	6/3/97	22610B6A52[c]		C3159	---	710		NR	
4/28/95	6/22/98	224677051E		C4146	---	930		NR	
4/30/95	5/10/97	225F145760		C2062	---	740		NR	
5/1/95	5/25/97	2247097827		C2154	---	730		NEWSOC	
5/4/95	6/27/97	224F754B06		C3236	---	810		NR	
	5/10/98	2250315213[c]		C2332	129	850		NR	
5/5/95	5/11/98	22506A477D		C3278	---	790		NR	
5/8/95	6/23/97	226118557B[c]		C2298	---	760		NR	
	5/19/98	2249630121		C5024	102	910		NR	
5/10/95	7/10/97	224E60520D		C2316	---	750		NR	
	5/17/98	2262756136		C5023	---	1030		NR	
	6/13/98	2262016D7C[c]		C4138	---	900		NR	
5/11/95	6/30/97	2261641E12		C2307	---	700		NR	

Appendix Table 9.2 (cont.)

Smolt release date	Adult return date Bonn	At smolt LGR	Pit-tag code	At adult Jaw tag number	Length (mm)	Upstream tagging (mm)	return Date	adult recovery[a] Location[b]
5/25/95	6/28/97	227E750526		C3238	---	790	NR	
6/3/95	6/21/97	227F17082C		C3220	---	790	NR	
6/11/95	5/26/98	6/22/98	227F1D1862[c]	C2349	---	870	NR	
6/13/95	6/3/97	227E632E73[c]		C2238	---	710	NR	
6/22/95	5/5/98	227E6D7214		C3268	134	840	NR	

Total adult returns:

Jacks	2
2-ocean	38
3-ocean	24

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

[c] These fish were released into the tailrace of Lower Granite Dam and were subsequently collected at a downstream dam where they were not observed to have been returned to the river. They were not used in any calculations.

Appendix Table 10.0 Total adult returns (hatchery and wild) to Lower Granite Dam from spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1995. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	Length At smolt LGR	Pit-tag code	At adult Jaw tag number		Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
4/9/95	5/14/97	225D172259		C1008	---	710		NR	
	6/18/98	225D697A3E		C5034	---	1040		NR	
4/11/95	6/17/96	225E062232		T0191	---	490		NR	
	7/1/97	225D5B133D		C3244	---	830	8/8/97	IMNAHW	
4/13/95	5/23/96	225D7A410D		T0158	---	510	8/10/96	RPDTRP	
	5/28/97	225C7D0278		C2180	---	690		NR	
	7/5/97	225E136411		C5004	---	840		NR	
	6/17/98	225A6C3256		C3294	---	910		NR	
4/15/95	5/22/97	225E1A5950		C3073	---	810		NR	
	5/24/97	225E0D760B		C2136	---	780		NR	
	6/4/97	225D577532		C2234	---	730		NR	
	6/24/97	225C6D043A		C4083	146	820		NR	
	7/1/97	225E031140		C3243	---	840	7/25/97	IMNAHW	
	7/8/97	225C62346F		C4097	106	820		NR	
	6/14/98	225D047E1D		C4139	---	900		NR	
4/17/95	5/9/97	225C6C5207		C2038	---	760		NR	
	5/25/97	225C0F5202		C2152	143	750	7/17/97	RAPH	
	6/1/97	225E0C616C		C3147	---	790		NR	
	6/19/97	225D2D2A54		C4069	---	820	9/10/97	SALRSF	
	5/3/98	225D03200D		C4113	---	920		NR	
	5/6/98	225D183B6A		C5018	94	970		NR	
	5/21/98	225C7F4171		C2340	---	810		NR	
	6/5/98	225C4D0E5F		C3290	---	870		NR	
4/19/95	5/31/96	225C6E7932		T0175	---	510		NR	
	4/30/97	225011250D		C2000	---	730		NR	
	5/9/97	222861456B		C3025	---	780		NR	
	5/11/97	225C5C1205		C3033	145	770	5/28/97	Oxbow TRP	
	5/12/97	22503B3554		C4009	---	790		NR	
	5/14/97	225C6B4C6E		C3047	155	810		NR	
	5/16/97	2228644169		-NA-	---	---		NR	
	5/23/97	224E7D297B		C3093	---	800		NR	
	5/26/97	2228645872		C3106	160	750	7/12/97	RAPH	
	5/26/97	2241621824		C3111	147	760	6/29/98	LSALR	
	5/27/97	2228623B74		C3116	124	790	6/28/97	RAPH	
	5/27/97	225F20201E		C2168	---	770		NR	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	At smolt LGR	Pit-tag code	At adult Jaw tag number	Length (mm)	Upstream tagging (mm)	return Date	adult recovery[a] Location[b]
4/19/95	5/28/97	2241581C75	C4026	101	810		NR	
	5/29/97	225B0F3237	C3128	---	770		NR	
	5/29/97	2250083F2E	C4029	---	830		NR	
	5/31/97	225D351377	C2206	---	730		NR	
	5/31/97	225D4B3166	C3135	---	790		NR	
	5/31/97	225D577A79	C3146	---	770		NR	
	6/3/97	22414D7027	C5001	---	870		NR	
	6/6/97	222A1B412C	C4049	---	800		NR	
	6/10/97	225C6C7204	C3192	---	840		NR	
	6/11/97	225B021C13	C4056	---	790		NR	
	6/13/97	2250384C46	C2269	128	770	7/3/97	LSR/RR	
	6/16/97	22455E755D	C4079	---	840		NR	
	6/23/97	2228604272	C3230	---	750		NR	
	6/24/97	2250137054	C5002	---	880		NR	
	6/25/97	222A220454	C3233	---	780		NR	
	7/13/97	225E7F0F17	C2317	111	760		NR	
	5/15/98	225E326705	C4127	---	900		NR	
4/20/95	5/2/97	2260220553	C2003	---	750	5/27/97	Oxbow TRP	
	5/5/97	22454F4827	C2009	---	760	5/23/97	Oxbow TRP	
	5/16/97	225F1C3D3F	C3061	216	800		NR	
	5/22/97	2260511A0F	C2122	149	760		NR	
	5/22/97	225D327900	C3074	---	780	7/4/97	RAPH	
	5/23/97	225E6F2207	C3088	---	720		NR	
	5/23/97	22451F3068	C3080	---	820		NR	
	5/28/97	226066391F	C2171	139	770	6/13/97	KOOS	
	5/29/97	225E1E095B	C2191	---	740		NR	
	5/31/97	224568046A	C2204	---	770		NR	
	6/6/97	225F2A167D	C2246	---	750	7/15/97	WALTONC	
	6/11/97	226025406C	C3194	133	770		NR	
	6/16/97	2246760110	C2277	---	780		NR	
	6/19/97	225F65055D	C3214	133	800		NR	
	6/21/97	2246317C75	C2288	157	740		NR	
	7/7/97	22610E5271	C4095	---	860		NR	
4/21/95	5/9/97	2260360E62	C2051	144	790		NR	
	5/9/97	225F6F4A5F	C3024	135	730		NR	
	5/28/97	22481E4664	C3118	133	790		NR	
	5/31/97	225F0A474E	C3143	---	810		RAPH	
	6/2/97	225F291B71	C2230	---	750		NR	
	6/9/97	22607A6D35	C2257	---	760		NR	
	6/13/97	225F49786A	C4064	---	770		NR	
	6/14/97	225F6C5020	C4072	---	810		NR	
	6/14/97	2245201B69	C4071	---	840		NR	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number		Length Upstream tagging (mm)	Length Upstream tagging (mm)	adult return Date	adult recovery[a] Location[b]
4/21/95	6/22/97	225F45312D		C3221	---	770		NR	
	5/14/98	22464D1305		C4123	---	910		NR	
4/22/95	5/11/97	225F6A4C69		C2066	---	740	7/12/97	RAPH	
	5/22/97	22605B304E		C3075	---	730		NR	
	6/13/97	226009781B		C3207	---	760	7/2/97	KOOS	
	6/13/97	2245357D49		C3203	---	780		NR	
	6/30/97	2245535E40		C4089	---	810		NR	
	7/2/97	2261127245		C4092	---	810	9/16/97	JOHNSC	
	7/3/97	225F711F31		C2313	---	740		NR	
	5/5/98	225F67541E		C3270	---	840		NR	
	5/16/98	225F30312F		C4126	---	860		NR	
4/23/95	5/7/97	224573787A		C2022	---	770		NR	
	5/12/97	22456E5B4D		C3038	---	810	6/5/97	Oxbow TRP	
	5/13/97	225F530832		C2090	---	750		NR	
	5/21/97	225E584E25		C2111	---	740	6/4/97	Oxbow TRP	
	5/29/97	2246647E54		C4032	142	810		NR	
	5/31/97	22466B0C4C		C2211	---	750		NR	
	5/31/97	2246613938		C2221	---	740		NR	
	6/5/97	22286D5243		C4046	---	840	6/13/97	KOOS	
	6/7/97	2248494616		C3176	---	780		NR	
	6/9/97	2260402775		-----	---	710		LOOH	
	6/13/97	2247772B11		C3204	---	800		NR	
	6/26/97	225E595A55		C4086	---	820	7/22/97	IMNAHW	
	6/30/97	22456C3538		C4088	---	850		NR	
	5/2/98	2260664838		C4111	---	950		NR	
	6/4/98	22476A7822		C5029	---	940		NR	
4/24/95	5/13/97	22285C3E0A		C3039	---	790	6/18/97	KOOS	
	5/22/97	22477A5128		C4011	---	800	7/7/97	KOOS	
	5/26/97	225E4D695F		C3109	---	750	7/25/97	RAPH	
	5/15/98	2246476D59		C4124	---	880		NR	
	6/21/98	2247271509		C5041	---	990		NR	
6/8/98	----[c]	225F7819C		-----	---	---		NR	
4/25/95	5/8/97	2246324861		C2033	---	770	7/31/97	RAPH	
	5/10/97	224938702F		C3028	162	760		NR	
	5/14/97	2246584B30		C2098	---	800	7/22/97	DWOR	
	5/14/97	224568496C		C3051	---	770		NR	
	5/23/97	2246145B74		-NA-	---	---		NR	
	5/24/97	224623493A		C2135	---	740		NR	
	5/31/97	2247086128		C3144	---	790		NR	
	6/9/97	22454D4D79		C4052	---	820	8/13/97	DWOR	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number		Length Upstream tagging (mm)	Length Upstream tagging (mm)	return adult recovery[a] Date	return adult recovery[a] Location[b]
4/25/95	6/10/98	22467A0E00		C5032	---	980	7/2/98	KOOS	
4/26/95	5/8/97	225E227F51		C2034	89	650		NR	
	5/8/97	22457C4069		C3018	136	790		NR	
	5/12/97	224572367F		C2078	---	780		LSR/RR	
	5/25/97	224756487F		C4018	161	800		NR	
	6/9/97	22463B5139		C2253	---	690		NR	
	5/9/98	225E27324F		-LGH-	123	820		NR	
	6/18/98	22604D1F01		C3293	---	890		NR	
	6/19/98	22476C346C		C5039	---	910		NR	
4/27/95	6/4/96	22467F554E		T0183	---	530	7/19/96	RPDTRP	
	5/8/97	225F034317		C3012	---	800		NR	
	6/5/97	226076025F		C3164	131	790		NR	
	6/23/97	22466B7137		C4082	---	760		NR	
4/28/95	5/28/96	2247690E7B		T0167	---	480	7/13/96	RPDTRP	
	5/3/97	2245152943		C3005	---	750	7/31/97	RAPH	
	5/7/97	225F6D4664		C2018	---	730		NR	
	5/13/97	2247461B03		C3050	168	780		NR	
	5/15/97	2246106F1F		-----	134	740		LOOH	
	5/23/97	224515272B		C4015	---	810		NR	
	5/31/97	225F011B31		C2202	---	730		NR	
	6/3/97	225D0E311F		C3158	---	720		NR	
	6/9/97	22456D5556		C2258	138	630		NR	
	6/10/97	22470F7D75		C4055	---	820		NR	
4/24/98	5/12/98	225E2C0A50		C4120	140	890		NR	
	6/21/98	225E5C1351		-LGH-	---	840		NR	
4/29/95	5/18/96	2247225F1A		T2104	161	520		NR	
	5/3/97	22605E6A23		-----	---	780		LOOH	
	5/5/97	2228746940		C2011	---	740		NR	
	5/9/97	225E710A12		C3023	---	760	6/25/97	RAPH	
	5/9/97	2247437876		C3019	139	790		NR	
	5/11/97	22465D6E12		C2067	127	760		NR	
	5/13/97	224855246F		C3048	---	760		NR	
	5/13/97	22473F3C54		-NA-	---	---		NR	
	5/13/97	22483F7739		C2082	133	670		NR	
	5/16/97	225F091C6B		C3063	---	770	7/15/97	RAPH	
	5/16/97	22414F2350		C2107	---	760		NR	
	5/21/97	225F063F57		-----	---	730		LOOH	
	5/25/97	224650161F		C3083	---	780		NR	
	5/25/97	22460A5156		C2142	---	670	7/17/97	RAPH	
	5/27/97	225D261368		C3113	---	790	7/22/97	RAPH	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
4/29/95	5/28/97	2246445725		C2187	---	730		NR
	5/31/97	2249213D06		-----	---	710		LOOH
	6/1/97	2249325F57		C3152	148	790	8/20/97	RAPH
	6/16/97	22453D0F2E		C3210	---	840	8/13/97	IMNAHW
	6/22/97	22482E0F03		C2292	---	750		NR
	6/23/97	2260613C59		C2294	132	780		NR
	6/23/97	2248215067		C2299	---	740		NR
	7/5/97	2247655358		C2314	---	790		NR
	7/15/97	2248577F5E		C2318	131	680	7/19/97	-----
	4/30/98	224542056E		C5008	---	930	6/18/98	KOOS
	5/4/98	225E676B4C		C2320	---	850		NR
	6/9/98	2260066625		C5031	---	940		NR
4/30/95	5/5/97	225F637A79		C3008	---	750		NR
	5/5/97	22453A4C3F		C2016	---	780	7/4/97	RAPH
	5/13/97	2260500972		C2091	---	710		NR
	5/21/97	226032636B		C4012	---	800		NR
	5/23/97	225E453644		C2133	---	800		NR
	5/23/97	2245666B67		C4021	---	780		NR
	6/1/97	2245213A5D		C2226	---	800		NR
	6/5/97	22450C796B		C4045	---	810	7/31/97	RAPH
	6/8/97	225E523C25		C2250	---	770		NR
	6/19/97	22600B2A4F		C3216	---	760		NR
	6/22/97	2248237E6B		C3223	---	760		NR
	6/22/97	22473A6223		-----	---	740		LOOH
	4/30/98	2248574F23		C4107	---	940		NR
5/1/95	6/4/96	225A5A2E64		T0189	---	490	7/15/96	RPDTRP
	5/11/97	224F4C0016		C3035	---	760		NR
	5/12/97	2250103444		C2073	134	760		NR
	5/17/97	224F71393A		-NA-	---	---		NR
	5/23/97	22500F3400		C2129	---	730		NR
	5/25/97	224F5F0E61		C3099	126	750	6/17/97	KOOS
	5/25/97	225F722C28		C3101	107	790		NR
	5/29/97	225A620F68		C3130	---	790		NR
	5/31/97	225D5F3C79		C2220	---	770	8/13/97	DWOR
	5/31/97	225A460F73		C2210	---	720	7/19/97	SAWT
	6/2/97	2245194F4C		C4036	---	800	8/1/97	RAPH
	6/7/97	2250287D74		C2249	---	750		NR
	6/7/97	225F2A7A5B		C2248	---	730		NR
	6/12/97	225B7A4960		C3200	---	740	7/23/97	RAPH
	6/19/97	224F514662		C3215	---	780		NR
	6/22/97	225A60620A		C2293	---	760	7/25/97	RAPH
	6/27/97	225B604D26		C3235	---	820		NR

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	Length (mm)	adult return Date	adult recovery[a] Location[b]
5/1/95	5/22/98	224F654D44		C5025	---	980	8/25/98	BEARVC	
5/2/95	5/22/96	225B3C600C		T0157	150	470	7/2/96	RPDTRP	
	5/29/96	225008222F		T0165	157	440	7/4/96	RPDTRP	
	5/5/97	225C0C3611		C2014	---	770	7/16/97	RAPH	
	5/5/97	225B4A5E68		C2012	138	760	7/10/97	RAPH	
	5/8/97	225E165640		C3016	---	770	6/3/97	Oxbow TRP	
	5/10/97	225B4F1904		C3029	---	790	8/22/97	RAPH	
	5/10/97	225C3A302F		C3032	148	800	7/15/97	RAPH	
	5/15/97	225B256865		C3054	---	800	6/29/97	RAPH	
	5/15/97	225B5D406D		C2104	---	760	6/26/97	RAPH	
	5/19/97	225B2E224A		C2110	---	740		NR	
	5/19/97	225B4E000B		C2109	---	800		NR	
	5/21/97	225B4B0E7B		C3069	---	810	7/17/97	RAPH	
	5/22/97	225B34043B		C2124	---	780		NR	
	5/23/97	225B4F7138		C4016	138	820		NR	
	5/24/97	225B69264E		C2137	---	720	7/11/97	RAPH	
	5/25/97	225C1A2B17		C2153	---	740		NR	
	5/25/97	225A6C701B		C4020	---	810		NR	
	5/25/97	225B40380C		C2155	---	710		NR	
	5/25/97	225B403573		C2157	---	720	7/11/97	RAPH	
	5/25/97	225A6D477F		C3084	150	790		NR	
	5/28/97	2250345328		C3126	148	690		NR	
	5/29/97	225004687F		C4027	---	800		NR	
	5/29/97	225E030524		C4031	---	770		NR	
	5/29/97	225B5D4554		C2189	---	730		NR	
	5/31/97	225B465178		C4054	---	790		NR	
	5/31/97	224F4C1551		C2207	---	740		NR	
	5/31/97	225E145009		C2199	---	680	7/16/97	RAPH	
	5/31/97	22502F2A01		C2198	---	720		RAPH	
	6/2/97	225B327454		C4037	---	810		NR	
	6/5/97	224E72573F		C4047	139	800		NR	
	6/10/97	225C230C21		C3191	135	820	7/3/97	LSR/RR	
	4/26/98	225B46226B		C3260	---	850		NR	
	5/3/98	225C5D1728		C5012	---	950		NR	
	6/28/98	225C56536F		C3301	---	860	7/9/98	DWOR	
5/3/95	5/18/96	225C293509		T2105	---	510		NR	
	6/3/96	2250276F16		T0180	---	480	7/3/96	RPDTRP	
	6/25/96	22501F296D		T0195	---	520	7/28/96	SALSFW	
	5/7/97	222A2D3F50		C2029	---	720		NR	
	5/7/97	222A2B346A		-NA-	---	---		NR	
	5/8/97	222A3C7E72		C3014	---	760		NR	
	5/8/97	22476A1527		C2035	---	790	6/27/97	RAPH	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
5/3/95	5/9/97	2250454A3D	C2039	---	810		NR	
	5/12/97	225B737B6A	C2081	---	750	6/26/97	RAPH	
	5/12/97	225B363B6A	C2075	---	730		NR	
	5/13/97	225B023C10	C3041	---	760		NR	
	5/13/97	225C001067	C3049	---	800		NR	
	5/14/97	224E7E1133	C2097	---	720	6/29/97	LSR/RR	
	5/15/97	225B597A6E	C3058	---	810		NR	
	5/15/97	225C5E0511	C3059	---	800		NR	
	5/17/97	225B6A1828	-NA-	---	---		NR	
	5/21/97	2250247C0C	C2115	---	760		NR	
	5/25/97	225C214374	C2140	---	740	8/19/97	KOOS	
	5/28/97	225C0B2329	C3123	---	770		NR	
	5/31/97	222A1C177A	C2212	---	750		NR	
	6/3/97	225B504F69	C2233	---	750	7/28/97	RAPH	
	6/5/97	224F57026A	C3166	---	800		NR	
	6/13/97	225B54633A	C3208	---	780		NR	
	5/13/98	224F465518	C4121	---	850		NR	
	5/16/98	224F7D2A08	-----	---	---		NR	
5/4/95	5/10/96	225A5E407A	T0151	---	450		NR	
	6/2/96	2247236E50	T0177	---	500	8/10/96	RPDTRP	
	7/1/96	225C114A6A	T0198	---	500		NR	
	4/29/97	222A37666E	C3001	---	760	7/16/97	RAPH	
	5/2/97	224E760F72	C3004	---	780		NR	
	5/3/97	225A695E68	C2004	---	760		NR	
	5/6/97	224F3A0C3B	C2015	---	740		NR	
	5/11/97	224F463E33	C2070	132	770		NR	
	5/13/97	224F6F7361	C3037	127	800		NR	
	5/15/97	22501E722F	C3057	---	800		NR	
	5/18/97	222A17344A	-NA-	---	---		NR	
	5/20/97	22513A1404	C2113	---	760	7/5/97	LSR/RR	
	5/22/97	22505A623C	C3076	---	780		NR	
	5/23/97	2251312A35	C2130	122	740		NR	
	5/26/97	225B422344	C3110	---	750	7/4/97	LSALR	
	5/27/97	225E0E7D29	C3115	140	770	8/12/97	RAPH	
	5/27/97	225C30264F	C2170	---	750		NR	
	5/27/97	22413B267F	C4023	---	780		NR	
	5/28/97	22502B5D04	C2188	135	780		NR	
	5/28/97	225004187B	C2174	147	780		NR	
	5/29/97	225B322049	C2196	143	730	8/1/97	LSALR	
	5/29/97	225B084C24	C4030	---	790		NR	
	5/30/97	22514D562C	C3134	---	790		NR	
	5/30/97	225C533F51	C3131	---	750		NR	
	5/31/97	225A7C5779	C2213	---	740		NR	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/4/95	5/31/97	225B3C7365	C3141	---	790			NR	
	6/4/97	225B673F69	C3162	136	790			NR	
	6/9/97	22506E5418	C3185	138	760			NR	
	6/9/97	225C3C5733	C3184	---	730			NR	
	6/10/97	2250197822	C2262	130	740		7/10/97	RAPH	
	6/17/97	225C544B30	C2278	---	740			NR	
	7/16/97	225A504046	C4098	128	850			NR	
	5/1/98	2261343D0B	C5009	---	960			NR	
	5/2/98	225A6A4B5C	C5010	---	980			NR	
	5/3/98	224F4B3852	C4110	---	880			NR	
	5/24/98	2250507923	C3286	---	800			NR	
	6/8/98	22512A4833	C4136	---	910			NR	
	6/27/98	224F5F4B21	C4151	---	890			NR	
	7/11/98	225B32342D	C4159	139	900			NR	
5/5/95	6/2/96	2251334F11	T0179	---	440		7/11/96	RPDTRP	
	6/3/96	225A545323	T0184	---	510			NR	
	6/12/96	2261291260	T2108	---	530		7/2/96	CLWR	
	5/6/97	225B676E4D	C2017	---	790			NR	
	5/9/97	225133772A	C2043	---	710			NR	
	5/12/97	224F5F296F	C2084	---	710		7/16/97	CROTRP	
	5/15/97	22494D4E38	C2105	---	780			NR	
	5/19/97	22495A211A	-NA-	---	---		7/13/97	RAPH	
	5/21/97	224F3E514F	C2112	---	750			NR	
	5/21/97	22495C7930	C4013	139	830			NR	
	5/23/97	225C516159	C3079	---	750		7/8/97	LSALR	
	5/23/97	225A7D185F	C3081	145	800		7/23/97	RAPH	
	5/23/97	2249507F45	C4017	---	780			NR	
	5/25/97	2249525553	C2144	---	740			NR	
	5/25/97	2251082465	C2141	---	710		8/4/97	RAPH	
	5/27/97	225A7B2536	C3112	---	770			NR	
	5/28/97	22494A1A5A	C3121	---	770			NR	
	5/29/97	225B462B0E	C2195	---	710			NR	
	5/30/97	224971523A	C3138	---	750			NR	
	5/30/97	2251373171	C3139	---	740			NR	
	6/1/97	2251057203	C2228	---	730			NR	
	6/9/97	225B375342	C2260	---	750			NR	
	6/9/97	2250214C69	C2256	134	720			NR	
	6/20/97	2241384A2A	C2284	---	770		7/17/97	SNAKER	
	6/22/97	2251253A2B	C3222	140	800			NR	
	6/24/97	22511E370B	C2302	---	790			NR	
	7/19/97	224967646E	-----	---	660			NR	
	5/2/98	225C332977	C4109	---	840			NR	
	5/4/98	22511A254D	C3267	---	870			NR	

Appendix Table 10.0 (cont.)

	Smolt release date	Length: Adult return date Bonn	Length: At smolt return date LGR	Pit-tag code	At adult Jaw tag number		Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/5/95		5/8/98	225129024B		C2328	---	850		NR	
	6/19/98	6/29/98	225B563E25		C5045	---	970		NR	
5/6/95		5/12/96	22494A7D2D		T0152	---	470	6/29/96	RPDTRP	
		5/3/97	225C02653D		C4001	---	780	5/19/97	Oxbow TRP	
		5/6/97	225C291A41		C3009	---	760		LSR/RR	
		5/7/97	224F4F130C		C2032	---	720		LSR/RR	
		5/7/97	224932513F		C2031	---	740		NR	
		5/8/97	22493D392B		C3015	---	730		NR	
		5/8/97	222A183775		C2025	---	750		NR	
		5/9/97	22513C1241		C2042	126	740		NR	
		5/10/97	22511C4E0D		C3027	---	800		NR	
		5/12/97	224F407744		C2072	---	740	7/15/97	RAPH	
		5/12/97	225A483C25		C2085	---	750		NR	
		5/15/97	22513D2F57		C2106	---	750		NR	
		5/16/97	225A647C10		-NA-	136	---		NR	
		5/21/97	224F531F67		C3070	---	790		NR	
		5/22/97	22506A7239		C3072	---	790		NR	
		5/23/97	22492C0168		C2128	---	660		Oxbow TRP	
		5/23/97	225B331866		C3091	---	780		NR	
		5/26/97	224F580242		C3105	141	750		NR	
		5/28/97	2250612517		C2179	---	720	7/16/97	RAPH	
		5/29/97	225129707B		C4028	---	790		NR	
		6/8/97	225051333C		C4050	---	780		NR	
		6/9/97	22506E1542		C1014	---	700		NR	
		6/12/97	224F615A3B		C3198	145	730	7/15/97	RAPH	
		6/12/97	2250484A72		C4062	---	830		NR	
		6/13/97	225D70322E		C3206	---	780	7/21/97	RAPH	
		6/14/97	224F535A27		C4073	---	830	8/12/97	DWOR	
		6/16/97	225C066C54		C3211	148	790	7/22/97	DWOR	
		6/20/97	22493D6570		C2285	---	780	7/12/97	RAPH	
		6/22/97	225B3D497E		C3225	---	780		NR	
		6/25/97	2249211A08		C4084	---	850		NR	
		4/21/98	2261642310		C5006	---	980		NR	
		5/5/98	22506C264F		C4116	---	840		NR	
		5/6/98	2241344419		C4117	---	950		NR	
		6/5/98	2251203A33		C4134	---	920		NR	
		6/30/98	225C5A317A		C2355	113	830		NR	
5/7/95		5/3/97	22510A7B4E		C4002	---	800	7/14/97	RAPH	
		5/6/97	2251160C70		-----	146	800	6/27/97	RAPH	
		5/7/97	225064042F		C4003	---	810		NR	
		5/8/97	2250357D57		C4006	132	830		NR	
		5/13/97	224139404C		C2092	---	700		NR	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
5/7/95	5/15/97	2250753030	C2100	---	750	6/4/97	Oxbow TRP	
	5/16/97	226134012A	C2108	---	800		NR	
	5/16/97	2249376F32	C3060	127	770		NR	
	5/17/97	22493B1B77	-NA-	---	---	6/24/97	RAPH	
	5/20/97	22505E3845	C3065	---	760		NR	
	5/21/97	2251222A2A	C3068	---	780	7/25/97	RAPH	
	5/23/97	2251116B78	C3087	---	740	7/8/97	LSR/RR	
	5/25/97	2249452C21	C2146	---	790	7/8/97	LSALR	
	5/25/97	22495A087C	C2159	---	720		NR	
	5/25/97	225C153856	C3096	---	790		NR	
	5/25/97	2261397927	C4019	---	820		NR	
	5/25/97	225A547037	C3102	---	750	7/2/97	LSALR	
	5/28/97	22510B3A00	C2178	---	750	7/16/97	RAPH	
	5/31/97	2250473218	C3142	138	770	7/5/97	LSR/RR	
	6/2/97	2249447E06	C3156	142	820		NR	
	6/2/97	22611F5730	C2229	---	690		NR	
	6/4/97	22505E5540	-----	136	610		LOOH	
	6/13/97	22506D112B	-NA-	142	---		NR	
	6/14/97	2250502356	C2271	---	740		NR	
	6/22/97	225C476A0F	C3227	127	780		NR	
	6/22/97	22286A7411	C2290	---	700		NR	
	7/2/97	2241433A10	C4065	---	840		NR	
	7/16/97	22491B6873	C4099	---	850		NR	
	5/2/98	22510D1400	C3262	---	850	7/1/98	DWOR	
	6/3/98	2249193B04	C4131	---	900		NR	
5/8/95	5/27/96	22495B7F61	T0164	---	500	7/3/96	RPDTRP	
	5/6/97	22611D3337	C1001	---	660	7/8/97	LSALR	
	5/9/97	2249152C2C	C2046	---	790	7/28/97	LSALR	
	5/14/97	22504A097B	C3053	---	730		NR	
	5/17/97	224939474B	-NA-	133	---		NR	
	5/21/97	224F470B63	-NA-	127	---		NR	
	5/23/97	22494A2930	C2126	---	700		NR	
	5/25/97	225C0A502E	C3085	---	820		NR	
	5/30/97	2261240251	C3136	136	750		NR	
	6/1/97	22493C0B76	C2224	---	730		NR	
	6/4/97	22493E6A48	C4044	---	770	7/6/97	CROTRP	
	6/5/97	2261337246	C2242	---	670		NR	
	6/5/97	22511A384C	C3167	---	800		NR	
	6/8/97	222A383378	C3178	---	790		NR	
	6/11/97	2249371249	C2263	---	680	7/5/97	CROTRP	
	6/12/97	22495A0614	C3201	---	780	7/12/97	RAPH	
	6/22/97	22495B1A22	C1017	---	660		NR	
	6/23/97	2261660063	C2297	---	780		NR	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	Length (mm)	adult recovery[a] return Date	adult recovery[a] Location[b]
5/8/95	6/23/97	2249562D1D	C2296	---	710		7/13/97	LSR/RR	
	6/24/97	22491D4938	C2305	---	740			NR	
	5/3/98	22492B5110	C5014	138	970		7/9/98	DWOR	
	5/3/98	22611C5B1F	C3266	---	840			NR	
	5/7/98	2249415910	C5019	---	940			NR	
	5/21/98	225A7B3C2D	C4128	145	880			NR	
	6/3/98	2250662D2E	C4132	---	890			NR	
	6/18/98	222A145560	C4141	---	920		7/9/98	DWOR	
5/9/95	5/8/97	2262142537	C3017	---	750		6/3/97	Oxbow TRP	
	5/15/97	224F721B7E	C3055	149	760		7/1/97	RAPH	
	6/1/97	2263025F22	C2223	149	720		7/17/97	RAPH	
	6/3/97	2262163F5C	C2237	---	750		6/23/97	KOOS	
	7/5/97	225F330315	C4093	124	780		7/25/97	RAPH	
	4/22/98	225F07384E	C4100	---	850			NR	
5/10/95	5/24/96	22626F4A38	T0159	148	480			NR	
	5/30/96	2261242066	T0172	145	530		7/4/96	RPDTRP	
	5/9/97	22626F7F7C	C2050	133	750			NR	
	5/23/97	226274670C	C2131	---	750			NR	
	5/25/97	226170776D	C2151	---	760			NR	
	5/27/97	226146696B	C3114	---	820			NR	
	5/29/97	22617E6947	C2186	---	720			NR	
	5/30/97	2262790E5C	C3137	145	730			NR	
	5/31/97	22632C0E2D	C2217	---	790			NR	
	6/2/97	225B220D59	C3153	---	780			NR	
	6/4/97	2261552B39	C4043	---	780			NR	
	6/5/97	22614A4056	C3165	---	740			NR	
	6/26/97	2262105311	C3234	142	830			NR	
	7/1/97	2262672C3B	C3241	---	820			NR	
	4/22/98	2262747839	C4101	---	820			NR	
6/3/98	6/22/98	226142736B	C4145	137	910			NR	
5/11/95	5/31/96	22627D5A4D	T0173	---	480		7/9/96	RPDTRP	
	5/11/97	2262775621	C4008	---	810			NR	
	5/12/97	22612D405F	C2076	---	800			NR	
	5/14/97	22626E2B75	C2101	---	740			NR	
	5/22/97	2261505240	C3078	136	780			NR	
	5/28/97	2263251E10	C2185	---	750			NR	
	6/7/97	2263077F39	C3177	---	820			NR	
	6/8/97	226147764A	C3181	---	750			NR	
	6/17/97	226273691B	C2279	---	720			NR	
	6/19/97	2261595952	C3218	---	800		7/18/97	RAPH	
	7/15/97	226276297A	C3256	135	800			NR	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	At adult Jaw tag number	Length At smolt (mm)	Length Upstream tagging (mm)	return Date	adult recovery Location[b]
5/11/95	7/18/97	22617D156C	-----	---	---		NR	
	6/10/98	22614E3E36	C4137	---	900		NR	
5/12/95	5/8/97	22620A505A	C2028	---	740	7/4/97	RAPH	
	5/8/97	226261177C	C2049	---	750		NR	
	5/9/97	226117206E	C2055	---	700		NR	
	5/10/97	2261593740	C2061	---	790	6/26/97	CROTRP	
	5/22/97	22627D4041	C2125	---	760	7/22/97	DWOR	
	5/31/97	2262101C23	C2208	---	730		NR	
	6/7/97	22615B5B01	C3175	---	730	7/22/97	DWOR	
5/14/95	7/19/96	2263152E16	T0202	---	600	8/9/96	SALSFW	
	5/17/97	2263211C28	-NA-	---	---		NR	
	5/21/97	22622A1951	C2117	150	790		NR	
	6/8/97	2263106859	C2251	---	750		NR	
	6/23/97	22632D6108	C2295	---	750		NR	
	6/23/97	22631E5349	C3229	---	780		NR	
	6/24/97	22622B7B0B	C2303	---	770		NR	
	6/28/97	22631D6935	C2308	---	800	8/8/97	SALSFW	
	7/9/97	22631D1054	C3251	---	800		NR	
	7/12/97	2262473319	C3253	---	780		NR	
	7/15/97	226245314A	C3255	---	780		NR	
	5/9/98	2262363317	C3276	---	850		NR	
	5/10/98	22620E5810	C5021	---	950		NR	
	6/3/98	226201515D	C5027	---	1010		NR	
	6/4/98	2262327778	C4133	---	930		NR	
	6/5/98	2262304E07	C3288	---	880	7/30/98	DWOR	
4/30/98	----[c]	2263240977	-----	---	---		NR	
5/15/95	5/9/97	2262460A15	C2052	---	750		NR	
	5/13/97	22624E061E	C2099	---	680		NR	
	5/14/97	2263082269	C1009	---	740		NR	
	5/30/97	22631D0430	C4034	---	800	7/27/97	CLWRNF	
	6/1/97	2262282339	C2218	169	780		NR	
	6/8/97	2263116A79	C3179	---	770		NR	
	6/19/97	22623F0A4C	C2283	---	710		NR	
	6/20/97	22620C3E23	C3217	---	810	8/12/97	DWOR	
	6/23/97	2263290B0C	C3228	---	760	7/18/97	SALSFW	
	6/23/97	2263060478	C1018	---	590		NR	
	6/25/97	22622B160E	C3232	---	800		NR	
	5/13/98	22631E4E48	C3281	---	900	8/17/98	CAPEHC	
	6/19/98	226208211A	C5037	---	940		NR	
5/16/95	6/15/96	2262043228	T0181	---	510	7/11/96	RPDTRP	

Appendix Table 10.0 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/16/95	6/20/97	22621B7A53		C4081	---	810		NR	
	5/3/98	2262311D03		C5011	---	910		NR	
	6/21/98	2263091739		C3297	---	870		NR	
5/17/95	7/7/96	2262457A62		T0200	---	560	8/2/96	SALSFW	
	5/24/97	22621A5953		C3082	---	830	7/22/97	DWOR	
	6/5/97	22630C2D2E		C3168	159	730	6/30/97	DWOR	
	6/9/97	22632F6D33		C1015	---	660		NR	
	6/12/97	22620D3C03		C2265	---	770		NR	
	6/24/97	22617F7452		C3231	140	780		NR	
6/12/98	7/8/98	2262223143		C4157	---	910		NR	
5/18/95	6/9/97	22620F4731		C3183	---	730		NR	
	6/10/97	22622B443D		C2261	137	770	7/5/97	CROTRP	
	6/12/97	22620D772B		C3199	---	770		NR	
	6/27/97	2262420F20		C3237	---	830		NR	
5/19/95	5/26/97	22621B181D		C2160	137	730	7/15/97	RAPH	
	5/29/97	22623E2B78		C3129	---	780		NR	
	7/8/97	22624D0C1F		C2315	---	780	7/21/97	DWOR	
	6/18/98	22624A4C19		C5035	---	970		NR	
5/20/95	6/6/97	226146054D		C3173	---	760		NR	
5/25/95	5/13/97	227E6B0576		C2086	---	770		NR	
	6/10/97	227D332126		C3189	---	750		NR	
	6/27/98	227D330840		C4150	140	910		NR	
	7/1/98	227D34715E		C4153	---	930	8/6/98	DWOR	
5/27/95	6/28/96	2262527003		T0197	---	500	8/2/96	SALSFW	
	6/16/97	227E744F39		C4076	---	850	7/22/97	DWOR	
	5/9/98	227D3B3949		C4199	---	870		NR	
5/29/95	6/16/97	227E79403D		C4074	---	770		NR	
6/2/95	5/5/98	227E6B0E27		C1024	158	790		NR	
	7/8/98	227E6F074E		C5047	---	940		NR	
6/4/95	5/6/97	227D4C4D32		C1003	---	630		NR	
	6/13/97	227D420C54		C2268	---	730		NR	
	6/16/97	227F014971		C2276	111	710		NR	
	6/20/97	226229657A		C3219	---	730		NR	
	6/30/97	227F2E3D50		C3240	---	810		NR	
	7/2/97	227D493346		C3246	---	730		NR	

Appendix Table 10.0 (cont.)

Smolt release date	Length: Adult return date Bonn	Length: Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number		Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
6/4/95	5/9/98	226B6D6040	C5020	120		990		NR	
6/6/95	6/13/97	227E521530	C3205	---		740		NR	
	6/1/98	227F0C2021	C3287	---		850		NR	
6/8/95	6/5/97	227D460313	C3163	---		730		NR	
	7/9/97	227D4F6C61	C3252	---		730	9/16/97	JOHNSC	
	6/26/98	227D37346D	C4148	---		870		NR	
6/10/95	5/5/98	227D4A2D23	C2321	---		880		NR	
6/10/98	----[c]	227E74084D	-----	---		---		NR	
6/12/95	4/25/98	227E3C345A	C3259	---		830		NR	
	5/15/98	227E633900	C2339	---		890		NR	
6/14/95	5/11/98	227D4C1D35	C2333	---		840		NR	
6/16/95	6/20/97	227E625128	C2287	127		680		NR	
6/24/95	5/3/98	227D49644C	C5015	---		970		NR	
	5/22/98	226247754E	C3285	---		860		NR	
6/28/95	5/28/97	22623B680E	C2181	142		710		NR	
6/30/95	5/1/98	227F200E06	C3261	---		820		NR	

Total adult returns:

Jacks	27
2-ocean	429
3-ocean	85

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

These adults were observed at Bonneville but not Lower Granite Dam; therefore, they were not included in any adult calculations.

Appendix Table 10.1 Total adult returns to Lower Granite Dam from hatchery spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1995. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	At smolt date LGR	Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
4/13/95	5/23/96	225D7A410D		T0158	---	510	8/10/96	RPDTRP	
	5/28/97	225C7D0278		C2180	---	690		NR	
4/15/95	5/22/97	225E1A5950		C3073	---	810		NR	
	6/24/97	225C6D043A		C4083	146	820		NR	
4/17/95	5/9/97	225C6C5207		C2038	---	760		NR	
	5/25/97	225C0F5202		C2152	143	750	7/17/97	RAPH	
	5/3/98	225D03200D		C4113	---	920		NR	
4/19/95	5/31/96	225C6E7932		T0175	---	510		NR	
	4/30/97	225011250D		C2000	---	730		NR	
	5/9/97	222861456B		C3025	---	780		NR	
	5/12/97	22503B3554		C4009	---	790		NR	
	5/14/97	225C6B4C6E		C3047	155	810		NR	
	5/16/97	2228644169		-NA-	---	---		NR	
	5/23/97	224E7D297B		C3093	---	800		NR	
	5/26/97	2228645872		C3106	160	750	7/12/97	RAPH	
	5/26/97	2241621824		C3111	147	760	6/29/98	LSALR	
	5/27/97	225F20201E		C2168	---	770		NR	
	5/29/97	225B0F3237		C3128	---	770		NR	
	5/31/97	225D351377		C2206	---	730		NR	
	5/31/97	225D4B3166		C3135	---	790		NR	
	5/31/97	225D577A79		C3146	---	770		NR	
	6/10/97	225C6C7204		C3192	---	840		NR	
	6/11/97	225B021C13		C4056	---	790		NR	
	6/13/97	2250384C46		C2269	128	770	7/3/97	LSR/RR	
	6/24/97	2250137054		C5002	---	880		NR	
	5/15/98	225E326705		C4127	---	900		NR	
4/20/95	5/2/97	2260220553		C2003	---	750	5/27/97	Oxbow TRP	
	5/5/97	22454F4827		C2009	---	760	5/23/97	Oxbow TRP	
	5/16/97	225F1C3D3F		C3061	216	800		NR	
	5/22/97	2260511A0F		C2122	149	760		NR	
	5/22/97	225D327900		C3074	---	780	7/4/97	RAPH	
	5/23/97	225E6F2207		C3088	---	720		NR	
	5/23/97	22451F3068		C3080	---	820		NR	
	5/28/97	226066391F		C2171	139	770	6/13/97	KOOS	
	5/29/97	225E1E095B		C2191	---	740		NR	
	5/31/97	224568046A		C2204	---	770		NR	
	6/6/97	225F2A167D		C2246	---	750	7/15/97	WALTONC	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	Length (mm)	return Date	adult recovery[a] Location[b]
4/20/95	6/11/97	226025406C	C3194	133		770		NR	
	6/16/97	2246760110	C2277	---		780		NR	
	6/19/97	225F65055D	C3214	133		800		NR	
	6/21/97	2246317C75	C2288	157		740		NR	
	7/7/97	22610E5271	C4095	---		860		NR	
4/21/95	5/9/97	2260360E62	C2051	144		790		NR	
	5/9/97	225F6F4A5F	C3024	135		730		NR	
	5/28/97	22481E4664	C3118	133		790		NR	
	5/31/97	225F0A474E	C3143	---		810		RAPH	
	6/2/97	225F291B71	C2230	---		750		NR	
	6/13/97	225F49786A	C4064	---		770		NR	
	6/14/97	2245201B69	C4071	---		840		NR	
	5/14/98	22464D1305	C4123	---		910		NR	
4/22/95	5/11/97	225F6A4C69	C2066	---		740	7/12/97	RAPH	
	5/22/97	22605B304E	C3075	---		730		NR	
	6/13/97	226009781B	C3207	---		760	7/2/97	KOOS	
	7/2/97	2261127245	C4092	---		810	9/16/97	JOHNSC	
	7/3/97	225F711F31	C2313	---		740		NR	
	5/5/98	225F67541E	C3270	---		840		NR	
4/23/95	5/7/97	224573787A	C2022	---		770		NR	
	5/12/97	22456E5B4D	C3038	---		810	6/5/97	Oxbow TRP	
	5/13/97	225F530832	C2090	---		750		NR	
	5/21/97	225E584E25	C2111	---		740	6/4/97	Oxbow TRP	
	5/29/97	2246647E54	C4032	142		810		NR	
	5/31/97	22466B0C4C	C2211	---		750		NR	
	5/31/97	2246613938	C2221	---		740		NR	
	6/5/97	22286D5243	C4046	---		840	6/13/97	KOOS	
	6/9/97	2260402775	-----	---		710		LOOH	
	6/13/97	2247772B11	C3204	---		800		NR	
	6/26/97	225E595A55	C4086	---		820	7/22/97	IMNAHW	
	6/30/97	22456C3538	C4088	---		850		NR	
4/24/95	5/13/97	22285C3E0A	C3039	---		790	6/18/97	KOOS	
	5/22/97	22477A5128	C4011	---		800	7/7/97	KOOS	
	5/26/97	225E4D695F	C3109	---		750	7/25/97	RAPH	
	5/15/98	2246476D59	C4124	---		880		NR	
6/8/98	----[c]	225F7819C	-----	---		---		NR	
4/25/95	5/8/97	2246324861	C2033	---		770	7/31/97	RAPH	
	5/14/97	2246584B30	C2098	---		800	7/22/97	DWOR	
	5/14/97	224568496C	C3051	---		770		NR	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	adult recovery[a] return Date	adult recovery[a] Location[b]
4/25/95	5/23/97	2246145B74		-NA-	---	---		NR	
	5/24/97	224623493A		C2135	---	740		NR	
	5/31/97	2247086128		C3144	---	790		NR	
	6/9/97	22454D4D79		C4052	---	820	8/13/97	DWOR	
	6/10/98	22467A0E00		C5032	---	980	7/2/98	KOOS	
4/26/95	5/8/97	22457C4069		C3018	136	790		NR	
	5/12/97	224572367F		C2078	---	780		LSR/RR	
	5/25/97	224756487F		C4018	161	800		NR	
	6/9/97	22463B5139		C2253	---	690		NR	
	5/9/98	225E27324F		-LGH-	123	820		NR	
	6/19/98	22476C346C		C5039	---	910		NR	
4/27/95	6/4/96	22467F554E		T0183	---	530	7/19/96	RPDTRP	
	5/8/97	225F034317		C3012	---	800		NR	
	6/5/97	226076025F		C3164	131	790		NR	
	6/23/97	22466B7137		C4082	---	760		NR	
4/28/95	5/28/96	2247690E7B		T0167	---	480	7/13/96	RPDTRP	
	5/3/97	2245152943		C3005	---	750	7/31/97	RAPH	
	5/7/97	225F6D4664		C2018	---	730		NR	
	5/13/97	2247461B03		C3050	168	780		NR	
	5/15/97	2246106F1F		-----	134	740		LOOH	
	5/23/97	224515272B		C4015	---	810		NR	
	5/31/97	225F011B31		C2202	---	730		NR	
	6/3/97	225D0E311F		C3158	---	720		NR	
	6/9/97	22456D5556		C2258	138	630		NR	
	6/10/97	22470F7D75		C4055	---	820		NR	
4/24/98	5/12/98	225E2C0A50		C4120	140	890		NR	
	6/21/98	225E5C1351		-LGH-	---	840		NR	
4/29/95	5/18/96	2247225F1A		T2104	161	520		NR	
	5/3/97	22605E6A23		-----	---	780		LOOH	
	5/5/97	2228746940		C2011	---	740		NR	
	5/9/97	225E710A12		C3023	---	760	6/25/97	RAPH	
	5/9/97	2247437876		C3019	139	790		NR	
	5/11/97	22465D6E12		C2067	127	760		NR	
	5/13/97	224855246F		C3048	---	760		NR	
	5/13/97	22473F3C54		-NA-	---	---		NR	
	5/13/97	22483F7739		C2082	133	670		NR	
	5/16/97	22414F2350		C2107	---	760		NR	
	5/21/97	225F063F57		-----	---	730		LOOH	
	5/25/97	224650161F		C3083	---	780		NR	
	5/25/97	22460A5156		C2142	---	670	7/17/97	RAPH	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	Length (mm)	adult recovery[a] return Date	adult recovery[a] Location[b]
4/29/95	5/27/97	225D261368	C3113	---	790		7/22/97	RAPH	
	5/28/97	2246445725	C2187	---	730			NR	
	5/31/97	2249213D06	-----	---	710			LOOH	
	6/1/97	2249325F57	C3152	148	790		8/20/97	RAPH	
	6/16/97	22453D0F2E	C3210	---	840		8/13/97	IMNAHW	
	6/22/97	22482E0F03	C2292	---	750			NR	
	6/23/97	2260613C59	C2294	132	780			NR	
	6/23/97	2248215067	C2299	---	740			NR	
	7/5/97	2247655358	C2314	---	790			NR	
	7/15/97	2248577F5E	C2318	131	680		7/19/97	-----	
	4/30/98	224542056E	C5008	---	930		6/18/98	KOOS	
	5/4/98	225E676B4C	C2320	---	850			NR	
4/30/95	5/5/97	225F637A79	C3008	---	750			NR	
	5/5/97	22453A4C3F	C2016	---	780		7/4/97	RAPH	
	5/13/97	2260500972	C2091	---	710			NR	
	5/21/97	226032636B	C4012	---	800			NR	
	5/23/97	225E453644	C2133	---	800			NR	
	5/23/97	2245666B67	C4021	---	780			NR	
	6/1/97	2245213A5D	C2226	---	800			NR	
	6/5/97	22450C796B	C4045	---	810		7/31/97	RAPH	
	6/8/97	225E523C25	C2250	---	770			NR	
	6/19/97	22600B2A4F	C3216	---	760			NR	
	6/22/97	2248237E6B	C3223	---	760			NR	
	6/22/97	22473A6223	-----	---	740			LOOH	
	4/30/98	2248574F23	C4107	---	940			NR	
5/1/95	6/4/96	225A5A2E64	T0189	---	490		7/15/96	RPDTRP	
	5/11/97	224F4C0016	C3035	---	760			NR	
	5/12/97	2250103444	C2073	134	760			NR	
	5/17/97	224F71393A	-NA-	---	---			NR	
	5/23/97	22500F3400	C2129	---	730			NR	
	5/25/97	224F5F0E61	C3099	126	750		6/17/97	KOOS	
	5/29/97	225A620F68	C3130	---	790			NR	
	5/31/97	225D5F3C79	C2220	---	770		8/13/97	DWOR	
	6/2/97	2245194F4C	C4036	---	800		8/1/97	RAPH	
	6/7/97	2250287D74	C2249	---	750			NR	
	6/7/97	225F2A7A5B	C2248	---	730			NR	
	6/12/97	225B7A4960	C3200	---	740		7/23/97	RAPH	
	6/19/97	224F514662	C3215	---	780			NR	
	6/22/97	225A60620A	C2293	---	760		7/25/97	RAPH	
5/2/95	5/22/96	225B3C600C	T0157	150	470		7/2/96	RPDTRP	
	5/29/96	225008222F	T0165	157	440		7/4/96	RPDTRP	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	At smolt return date LGR	Pit-tag code	At adult Jaw tag number		Length Upstream tagging (mm)	Length At adult (mm)	return Date	adult recovery[a] Location[b]
5/2/95	5/5/97	225C0C3611		C2014	---	770	7/16/97	RAPH	
	5/5/97	225B4A5E68		C2012	138	760	7/10/97	RAPH	
	5/8/97	225E165640		C3016	---	770	6/3/97	Oxbow TRP	
	5/10/97	225B4F1904		C3029	---	790	8/22/97	RAPH	
	5/10/97	225C3A302F		C3032	148	800	7/15/97	RAPH	
	5/15/97	225B256865		C3054	---	800	6/29/97	RAPH	
	5/15/97	225B5D406D		C2104	---	760	6/26/97	RAPH	
	5/19/97	225B2E224A		C2110	---	740		NR	
	5/19/97	225B4E000B		C2109	---	800		NR	
	5/21/97	225B4B0E7B		C3069	---	810	7/17/97	RAPH	
	5/22/97	225B34043B		C2124	---	780		NR	
	5/23/97	225B4F7138		C4016	138	820		NR	
	5/24/97	225B69264E		C2137	---	720	7/11/97	RAPH	
	5/25/97	225A6C701B		C4020	---	810		NR	
	5/25/97	225B40380C		C2155	---	710		NR	
	5/25/97	225B403573		C2157	---	720	7/11/97	RAPH	
	5/25/97	225A6D477F		C3084	150	790		NR	
	5/28/97	2250345328		C3126	148	690		NR	
	5/29/97	225004687F		C4027	---	800		NR	
	5/29/97	225E030524		C4031	---	770		NR	
	5/29/97	225B5D4554		C2189	---	730		NR	
	5/31/97	225B465178		C4054	---	790		NR	
	5/31/97	224F4C1551		C2207	---	740		NR	
	5/31/97	225E145009		C2199	---	680	7/16/97	RAPH	
	5/31/97	22502F2A01		C2198	---	720		RAPH	
	6/2/97	225B327454		C4037	---	810		NR	
	6/5/97	224E72573F		C4047	139	800		NR	
	6/10/97	225C230C21		C3191	135	820	7/3/97	LSR/RR	
	4/26/98	225B46226B		C3260	---	850		NR	
	5/3/98	225C5D1728		C5012	---	950		NR	
	6/28/98	225C56536F		C3301	---	860	7/9/98	DWOR	
5/3/95	5/18/96	225C293509		T2105	---	510		NR	
	6/3/96	2250276F16		T0180	---	480	7/3/96	RPDTRP	
	6/25/96	22501F296D		T0195	---	520	7/28/96	SALSFW	
	5/7/97	222A2D3F50		C2029	---	720		NR	
	5/7/97	222A2B346A		-NA-	---	---		NR	
	5/8/97	222A3C7E72		C3014	---	760		NR	
	5/8/97	22476A1527		C2035	---	790	6/27/97	RAPH	
	5/9/97	2250454A3D		C2039	---	810		NR	
	5/12/97	225B737B6A		C2081	---	750	6/26/97	RAPH	
	5/12/97	225B363B6A		C2075	---	730		NR	
	5/13/97	225B023C10		C3041	---	760		NR	
	5/13/97	225C001067		C3049	---	800		NR	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	Length (mm)	adult recovery[a] return Date	adult recovery[a] Location[b]
5/3/95	5/14/97	224E7E1133	C2097	---	720		6/29/97	LSR/RR	
	5/15/97	225B597A6E	C3058	---	810			NR	
	5/15/97	225C5E0511	C3059	---	800			NR	
	5/17/97	225B6A1828	-NA-	---	---			NR	
	5/21/97	2250247C0C	C2115	---	760			NR	
	5/28/97	225C0B2329	C3123	---	770			NR	
	5/31/97	222A1C177A	C2212	---	750			NR	
	6/3/97	225B504F69	C2233	---	750		7/28/97	RAPH	
	6/5/97	224F57026A	C3166	---	800			NR	
	6/13/97	225B54633A	C3208	---	780			NR	
	5/13/98	224F465518	C4121	---	850			NR	
	5/16/98	224F7D2A08	-----	---	---			NR	
5/4/95	5/10/96	225A5E407A	T0151	---	450			NR	
	6/2/96	2247236E50	T0177	---	500		8/10/96	RPDTRP	
	7/1/96	225C114A6A	T0198	---	500			NR	
	4/29/97	222A37666E	C3001	---	760		7/16/97	RAPH	
	5/2/97	224E760F72	C3004	---	780			NR	
	5/3/97	225A695E68	C2004	---	760			NR	
	5/6/97	224F3A0C3B	C2015	---	740			NR	
	5/11/97	224F463E33	C2070	132	770			NR	
	5/13/97	224F6F7361	C3037	127	800			NR	
	5/15/97	22501E722F	C3057	---	800			NR	
	5/18/97	222A17344A	-NA-	---	---			NR	
	5/20/97	22513A1404	C2113	---	760		7/5/97	LSR/RR	
	5/22/97	22505A623C	C3076	---	780			NR	
	5/23/97	2251312A35	C2130	122	740			NR	
	5/26/97	225B422344	C3110	---	750		7/4/97	LSALR	
	5/27/97	225E0E7D29	C3115	140	770		8/12/97	RAPH	
	5/27/97	225C30264F	C2170	---	750			NR	
	5/27/97	22413B267F	C4023	---	780			NR	
	5/28/97	22502B5D04	C2188	135	780			NR	
	5/28/97	225004187B	C2174	147	780			NR	
	5/29/97	225B322049	C2196	143	730		8/1/97	LSALR	
	5/29/97	225B084C24	C4030	---	790			NR	
	5/30/97	22514D562C	C3134	---	790			NR	
	5/30/97	225C533F51	C3131	---	750			NR	
	5/31/97	225A7C5779	C2213	---	740			NR	
	5/31/97	225B3C7365	C3141	---	790			NR	
	6/4/97	225B673F69	C3162	136	790			NR	
	6/9/97	22506E5418	C3185	138	760			NR	
	6/9/97	225C3C5733	C3184	---	730			NR	
	6/10/97	2250197822	C2262	130	740		7/10/97	RAPH	
	6/17/97	225C544B30	C2278	---	740			NR	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/4/95	7/16/97	225A504046	C4098	128	850			NR	
	5/1/98	2261343D0B	C5009	---	960			NR	
	5/3/98	224F4B3852	C4110	---	880			NR	
	5/24/98	2250507923	C3286	---	800			NR	
	6/8/98	22512A4833	C4136	---	910			NR	
	6/27/98	224F5F4B21	C4151	---	890			NR	
	7/11/98	225B32342D	C4159	139	900			NR	
5/5/95	6/2/96	2251334F11	T0179	---	440		7/11/96	RPDTRP	
	6/3/96	225A545323	T0184	---	510			NR	
	6/12/96	2261291260	T2108	---	530		7/2/96	CLWR	
	5/6/97	225B676E4D	C2017	---	790			NR	
	5/9/97	225133772A	C2043	---	710			NR	
	5/12/97	224F5F296F	C2084	---	710		7/16/97	CROTRP	
	5/15/97	22494D4E38	C2105	---	780			NR	
	5/19/97	22495A211A	-NA-	---	---		7/13/97	RAPH	
	5/21/97	224F3E514F	C2112	---	750			NR	
	5/23/97	225C516159	C3079	---	750		7/8/97	LSALR	
	5/23/97	225A7D185F	C3081	145	800		7/23/97	RAPH	
	5/23/97	2249507F45	C4017	---	780			NR	
	5/25/97	2249525553	C2144	---	740			NR	
	5/25/97	2251082465	C2141	---	710		8/4/97	RAPH	
	5/27/97	225A7B2536	C3112	---	770			NR	
	5/28/97	22494A1A5A	C3121	---	770			NR	
	5/29/97	225B462B0E	C2195	---	710			NR	
	5/30/97	224971523A	C3138	---	750			NR	
	5/30/97	2251373171	C3139	---	740			NR	
	6/1/97	2251057203	C2228	---	730			NR	
	6/9/97	225B375342	C2260	---	750			NR	
	6/9/97	2250214C69	C2256	134	720			NR	
	6/20/97	2241384A2A	C2284	---	770		7/17/97	SNAKER	
	6/22/97	2251253A2B	C3222	140	800			NR	
	6/24/97	22511E370B	C2302	---	790			NR	
	5/2/98	225C332977	C4109	---	840			NR	
	5/4/98	22511A254D	C3267	---	870			NR	
	5/8/98	225129024B	C2328	---	850			NR	
6/19/98	6/29/98	225B563E25	C5045	---	970			NR	
5/6/95	5/12/96	22494A7D2D	T0152	---	470		6/29/96	RPDTRP	
	5/3/97	225C02653D	C4001	---	780		5/19/97	Oxbow TRP	
	5/6/97	225C291A41	C3009	---	760			LSR/RR	
	5/7/97	224F4F130C	C2032	---	720			LSR/RR	
	5/7/97	224932513F	C2031	---	740			NR	
	5/8/97	22493D392B	C3015	---	730			NR	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/6/95	5/8/97	222A183775	C2025	---	750			NR	
	5/9/97	22513C1241	C2042	126	740			NR	
	5/10/97	22511C4E0D	C3027	---	800			NR	
	5/12/97	224F407744	C2072	---	740		7/15/97	RAPH	
	5/12/97	225A483C25	C2085	---	750			NR	
	5/15/97	22513D2F57	C2106	---	750			NR	
	5/16/97	225A647C10	-NA-	136	---			NR	
	5/21/97	224F531F67	C3070	---	790			NR	
	5/22/97	22506A7239	C3072	---	790			NR	
	5/23/97	22492C0168	C2128	---	660			Oxbow TRP	
	5/23/97	225B331866	C3091	---	780			NR	
	5/26/97	224F580242	C3105	141	750			NR	
	5/28/97	2250612517	C2179	---	720		7/16/97	RAPH	
	5/29/97	225129707B	C4028	---	790			NR	
	6/8/97	225051333C	C4050	---	780			NR	
	6/9/97	22506E1542	C1014	---	700			NR	
	6/12/97	224F615A3B	C3198	145	730		7/15/97	RAPH	
	6/12/97	2250484A72	C4062	---	830			NR	
	6/13/97	225D70322E	C3206	---	780		7/21/97	RAPH	
	6/14/97	224F535A27	C4073	---	830		8/12/97	DWOR	
	6/16/97	225C066C54	C3211	148	790		7/22/97	DWOR	
	6/20/97	22493D6570	C2285	---	780		7/12/97	RAPH	
	6/22/97	225B3D497E	C3225	---	780			NR	
	6/25/97	2249211A08	C4084	---	850			NR	
	4/21/98	2261642310	C5006	---	980			NR	
	5/5/98	22506C264F	C4116	---	840			NR	
	5/6/98	2241344419	C4117	---	950			NR	
	6/5/98	2251203A33	C4134	---	920			NR	
5/7/95	5/3/97	22510A7B4E	C4002	---	800		7/14/97	RAPH	
	5/6/97	2251160C70	-----	146	800		6/27/97	RAPH	
	5/7/97	225064042F	C4003	---	810			NR	
	5/13/97	224139404C	C2092	---	700			NR	
	5/15/97	2250753030	C2100	---	750		6/4/97	Oxbow TRP	
	5/16/97	226134012A	C2108	---	800			NR	
	5/16/97	2249376F32	C3060	127	770			NR	
	5/17/97	22493B1B77	-NA-	---	---		6/24/97	RAPH	
	5/20/97	22505E3845	C3065	---	760			NR	
	5/21/97	2251222A2A	C3068	---	780		7/25/97	RAPH	
	5/23/97	2251116B78	C3087	---	740		7/8/97	LSR/RR	
	5/25/97	2249452C21	C2146	---	790		7/8/97	LSALR	
	5/25/97	22495A087C	C2159	---	720			NR	
	5/25/97	225C153856	C3096	---	790			NR	
	5/25/97	2261397927	C4019	---	820			NR	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	At smolt return date LGR	Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/7/95	5/25/97	225A547037		C3102	---	750	7/2/97	LSALR	
	5/28/97	22510B3A00		C2178	---	750	7/16/97	RAPH	
	5/31/97	2250473218		C3142	138	770	7/5/97	LSR/RR	
	6/2/97	2249447E06		C3156	142	820		NR	
	6/2/97	22611F5730		C2229	---	690		NR	
	6/4/97	22505E5540		-----	136	610		LOOH	
	6/13/97	22506D112B		-NA-	142	---		NR	
	6/14/97	2250502356		C2271	---	740		NR	
	6/22/97	225C476A0F		C3227	127	780		NR	
	7/2/97	2241433A10		C4065	---	840		NR	
	5/2/98	22510D1400		C3262	---	850	7/1/98	DWOR	
	6/3/98	2249193B04		C4131	---	900		NR	
5/8/95	5/27/96	22495B7F61		T0164	---	500	7/3/96	RPDTRP	
	5/6/97	22611D3337		C1001	---	660	7/8/97	LSALR	
	5/9/97	2249152C2C		C2046	---	790	7/28/97	LSALR	
	5/17/97	224939474B		-NA-	133	---		NR	
	5/21/97	224F470B63		-NA-	127	---		NR	
	5/23/97	22494A2930		C2126	---	700		NR	
	5/25/97	225C0A502E		C3085	---	820		NR	
	5/30/97	2261240251		C3136	136	750		NR	
	6/1/97	22493C0B76		C2224	---	730		NR	
	6/4/97	22493E6A48		C4044	---	770	7/6/97	CROTRP	
	6/5/97	22511A384C		C3167	---	800		NR	
	6/8/97	222A383378		C3178	---	790		NR	
	6/11/97	2249371249		C2263	---	680	7/5/97	CROTRP	
	6/12/97	22495A0614		C3201	---	780	7/12/97	RAPH	
	6/22/97	22495B1A22		C1017	---	660		NR	
	6/23/97	2261660063		C2297	---	780		NR	
	6/23/97	2249562D1D		C2296	---	710	7/13/97	LSR/RR	
	6/24/97	22491D4938		C2305	---	740		NR	
	5/3/98	22492B5110		C5014	138	970	7/9/98	DWOR	
	5/3/98	22611C5B1F		C3266	---	840		NR	
	5/7/98	2249415910		C5019	---	940		NR	
	5/21/98	225A7B3C2D		C4128	145	880		NR	
	6/18/98	222A145560		C4141	---	920	7/9/98	DWOR	
5/9/95	5/8/97	2262142537		C3017	---	750	6/3/97	Oxbow TRP	
	5/15/97	224F721B7E		C3055	149	760	7/1/97	RAPH	
	6/1/97	2263025F22		C2223	149	720	7/17/97	RAPH	
	6/3/97	2262163F5C		C2237	---	750	6/23/97	KOOS	
	4/22/98	225F07384E		C4100	---	850		NR	
5/10/95	5/24/96	22626F4A38		T0159	148	480		NR	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length (mm)	Upstream tagging (mm)	adult recovery[a] Date	adult recovery[a] Location[b]
5/10/95	5/30/96	2261242066	T0172	145	530	7/4/96	RPDTRP	
	5/9/97	22626F7F7C	C2050	133	750		NR	
	5/23/97	226274670C	C2131	---	750		NR	
	5/25/97	226170776D	C2151	---	760		NR	
	5/27/97	226146696B	C3114	---	820		NR	
	5/29/97	22617E6947	C2186	---	720		NR	
	5/30/97	2262790E5C	C3137	145	730		NR	
	5/31/97	22632C0E2D	C2217	---	790		NR	
	6/2/97	225B220D59	C3153	---	780		NR	
	6/4/97	2261552B39	C4043	---	780		NR	
	6/5/97	22614A4056	C3165	---	740		NR	
	6/26/97	2262105311	C3234	142	830		NR	
	7/1/97	2262672C3B	C3241	---	820		NR	
	4/22/98	2262747839	C4101	---	820		NR	
6/3/98	6/22/98	226142736B	C4145	137	910		NR	
5/11/95	5/31/96	22627D5A4D	T0173	---	480	7/9/96	RPDTRP	
	5/11/97	2262775621	C4008	---	810		NR	
	5/14/97	22626E2B75	C2101	---	740		NR	
	5/22/97	2261505240	C3078	136	780		NR	
	5/28/97	2263251E10	C2185	---	750		NR	
	6/7/97	2263077F39	C3177	---	820		NR	
	6/17/97	226273691B	C2279	---	720		NR	
	6/19/97	2261595952	C3218	---	800	7/18/97	RAPH	
	7/15/97	226276297A	C3256	135	800		NR	
5/12/95	5/8/97	22620A505A	C2028	---	740	7/4/97	RAPH	
	5/8/97	226261177C	C2049	---	750		NR	
	5/9/97	226117206E	C2055	---	700		NR	
	5/10/97	2261593740	C2061	---	790	6/26/97	CROTRP	
	5/22/97	22627D4041	C2125	---	760	7/22/97	DWOR	
	6/7/97	22615B5B01	C3175	---	730	7/22/97	DWOR	
5/14/95	7/19/96	2263152E16	T0202	---	600	8/9/96	SALSFW	
	5/17/97	2263211C28	-NA-	---	---		NR	
	5/21/97	22622A1951	C2117	150	790		NR	
	6/8/97	2263106859	C2251	---	750		NR	
	6/23/97	22631E5349	C3229	---	780		NR	
	6/24/97	22622B7B0B	C2303	---	770		NR	
	6/28/97	22631D6935	C2308	---	800	8/8/97	SALSFW	
	7/9/97	22631D1054	C3251	---	800		NR	
	7/12/97	2262473319	C3253	---	780		NR	
	7/15/97	226245314A	C3255	---	780		NR	
	5/9/98	2262363317	C3276	---	850		NR	

Appendix Table 10.1 (cont.)

	Smolt release date	Length: Adult return date Bonn	Length: At smolt return date LGR	Pit-tag code	At adult Jaw tag number		Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/14/95		6/3/98	226201515D		C5027	---	1010		NR	
		6/5/98	2262304E07		C3288	---	880	7/30/98	DWOR	
	4/30/98	----[c]	2263240977		-----	---	---		NR	
5/15/95		5/9/97	2262460A15		C2052	---	750		NR	
		5/13/97	22624E061E		C2099	---	680		NR	
		5/14/97	2263082269		C1009	---	740		NR	
		5/30/97	22631D0430		C4034	---	800	7/27/97	CLWRNF	
		6/1/97	2262282339		C2218	169	780		NR	
		6/8/97	2263116A79		C3179	---	770		NR	
		6/20/97	22620C3E23		C3217	---	810	8/12/97	DWOR	
		6/23/97	2263290B0C		C3228	---	760	7/18/97	SALSFW	
		6/23/97	2263060478		C1018	---	590		NR	
		6/19/98	226208211A		C5037	---	940		NR	
5/16/95		6/15/96	2262043228		T0181	---	510	7/11/96	RPDTRP	
		6/20/97	22621B7A53		C4081	---	810		NR	
		5/3/98	2262311D03		C5011	---	910		NR	
		6/21/98	2263091739		C3297	---	870		NR	
5/17/95		7/7/96	2262457A62		T0200	---	560	8/2/96	SALSFW	
		5/24/97	22621A5953		C3082	---	830	7/22/97	DWOR	
		6/5/97	22630C2D2E		C3168	159	730	6/30/97	DWOR	
		6/12/97	22620D3C03		C2265	---	770		NR	
		6/24/97	22617F7452		C3231	140	780		NR	
	6/12/98	7/8/98	2262223143		C4157	---	910		NR	
5/18/95		6/9/97	22620F4731		C3183	---	730		NR	
		6/10/97	22622B443D		C2261	137	770	7/5/97	CROTRP	
		6/12/97	22620D772B		C3199	---	770		NR	
		6/27/97	2262420F20		C3237	---	830		NR	
5/19/95		5/26/97	22621B181D		C2160	137	730	7/15/97	RAPH	
		5/29/97	22623E2B78		C3129	---	780		NR	
		7/8/97	22624D0C1F		C2315	---	780	7/21/97	DWOR	
5/20/95		6/6/97	226146054D		C3173	---	760		NR	
5/25/95		5/13/97	227E6B0576		C2086	---	770		NR	
		6/27/98	227D330840		C4150	140	910		NR	
		7/1/98	227D34715E		C4153	---	930	8/6/98	DWOR	
5/27/95		6/28/96	2262527003		T0197	---	500	8/2/96	SALSFW	
		6/16/97	227E744F39		C4076	---	850	7/22/97	DWOR	

Appendix Table 10.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length (mm)	Upstream tagging (mm)	return Date	adult recovery[a] Location[b]
5/27/95	5/9/98	227D3B3949	C4199	---	870		NR	
6/2/95	5/5/98	227E6B0E27	C1024	158	790		NR	
6/4/95	6/13/97	227D420C54	C2268	---	730		NR	
	6/30/97	227F2E3D50	C3240	---	810		NR	
6/10/95	5/5/98	227D4A2D23	C2321	---	880		NR	
6/12/95	5/15/98	227E633900	C2339	---	890		NR	

Total adult returns:

Jacks	26
2-ocean	369
3-ocean	55

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

These adults were observed at Bonneville but not Lower Granite Dam; therefore, they were not included in any adult calculations.

Appendix Table 10.2 Total adult returns to Lower Granite Dam from wild spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1995. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	At smolt date LGR	Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	adult recovery[a] return Date	Location[b]
4/9/95	5/14/97	225D172259		C1008	---	710		NR	
	6/18/98	225D697A3E		C5034	---	1040		NR	
4/11/95	6/17/96	225E062232		T0191	---	490		NR	
	7/1/97	225D5B133D		C3244	---	830	8/8/97	IMNAHW	
4/13/95	7/5/97	225E136411		C5004	---	840		NR	
	6/17/98	225A6C3256		C3294	---	910		NR	
4/15/95	5/24/97	225E0D760B		C2136	---	780		NR	
	6/4/97	225D577532		C2234	---	730		NR	
	7/1/97	225E031140		C3243	---	840	7/25/97	IMNAHW	
	7/8/97	225C62346F		C4097	106	820		NR	
	6/14/98	225D047E1D		C4139	---	900		NR	
4/17/95	6/1/97	225E0C616C		C3147	---	790		NR	
	6/19/97	225D2D2A54		C4069	---	820	9/10/97	SALRSF	
	5/6/98	225D183B6A		C5018	94	970		NR	
	5/21/98	225C7F4171		C2340	---	810		NR	
	6/5/98	225C4D0E5F		C3290	---	870		NR	
4/19/95	5/11/97	225C5C1205		C3033	145	770	5/28/97	Oxbow TRP	
	5/27/97	2228623B74		C3116	124	790	6/28/97	RAPH	
	5/28/97	2241581C75		C4026	101	810		NR	
	5/29/97	2250083F2E		C4029	---	830		NR	
	6/3/97	22414D7027		C5001	---	870		NR	
	6/6/97	222A1B412C		C4049	---	800		NR	
	6/16/97	22455E755D		C4079	---	840		NR	
	6/23/97	2228604272		C3230	---	750		NR	
	6/25/97	222A220454		C3233	---	780		NR	
	7/13/97	225E7F0F17		C2317	111	760		NR	
4/21/95	6/9/97	22607A6D35		C2257	---	760		NR	
	6/14/97	225F6C5020		C4072	---	810		NR	
	6/22/97	225F45312D		C3221	---	770		NR	
4/22/95	6/13/97	2245357D49		C3203	---	780		NR	
	6/30/97	2245535E40		C4089	---	810		NR	
	5/16/98	225F30312F		C4126	---	860		NR	
4/23/95	6/7/97	2248494616		C3176	---	780		NR	

Appendix Table 10.2 (cont.)

Smolt release date	Length: Adult return date Bonn	Length: At smolt LGR	Pit-tag code	At adult Jaw tag number		Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
4/23/95	5/2/98	2260664838		C4111	---	950		NR	
	6/4/98	22476A7822		C5029	---	940		NR	
4/24/95	6/21/98	2247271509		C5041	---	990		NR	
4/25/95	5/10/97	224938702F		C3028	162	760		NR	
4/26/95	5/8/97	225E227F51		C2034	89	650		NR	
	6/18/98	22604D1F01		C3293	---	890		NR	
4/29/95	5/16/97	225F091C6B		C3063	---	770	7/15/97	RAPH	
	6/9/98	2260066625		C5031	---	940		NR	
5/1/95	5/25/97	225F722C28		C3101	107	790		NR	
	5/31/97	225A460F73		C2210	---	720	7/19/97	SAWT	
	6/27/97	225B604D26		C3235	---	820		NR	
	5/22/98	224F654D44		C5025	---	980	8/25/98	BEARVC	
5/2/95	5/25/97	225C1A2B17		C2153	---	740		NR	
5/3/95	5/25/97	225C214374		C2140	---	740	8/19/97	KOOS	
5/4/95	5/2/98	225A6A4B5C		C5010	---	980		NR	
5/5/95	5/21/97	22495C7930		C4013	139	830		NR	
	7/19/97	224967646E		-----	---	660		NR	
5/6/95	6/30/98	225C5A317A		C2355	113	830		NR	
5/7/95	5/8/97	2250357D57		C4006	132	830		NR	
	6/22/97	22286A7411		C2290	---	700		NR	
	7/16/97	22491B6873		C4099	---	850		NR	
5/8/95	5/14/97	22504A097B		C3053	---	730		NR	
	6/5/97	2261337246		C2242	---	670		NR	
	6/3/98	2250662D2E		C4132	---	890		NR	
5/9/95	7/5/97	225F330315		C4093	124	780	7/25/97	RAPH	
5/11/95	5/12/97	22612D405F		C2076	---	800		NR	
	6/8/97	226147764A		C3181	---	750		NR	
	7/18/97	22617D156C		-----	---	---		NR	
	6/10/98	22614E3E36		C4137	---	900		NR	

Appendix Table 10.2 (cont.)

Smolt release date	Length: Adult return date Bonn	Length: At smolt return date LGR	Pit-tag code	At adult Jaw tag number		Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/12/95	5/31/97	2262101C23		C2208	---	730		NR	
5/14/95	6/23/97	22632D6108		C2295	---	750		NR	
	5/10/98	22620E5810		C5021	---	950		NR	
	6/4/98	2262327778		C4133	---	930		NR	
5/15/95	6/19/97	22623F0A4C		C2283	---	710		NR	
	6/25/97	22622B160E		C3232	---	800		NR	
	5/13/98	22631E4E48		C3281	---	900	8/17/98	CAPEHC	
5/17/95	6/9/97	22632F6D33		C1015	---	660		NR	
5/19/95	6/18/98	22624A4C19		C5035	---	970		NR	
5/25/95	6/10/97	227D332126		C3189	---	750		NR	
5/29/95	6/16/97	227E79403D		C4074	---	770		NR	
6/2/95	7/8/98	227E6F074E		C5047	---	940		NR	
6/4/95	5/6/97	227D4C4D32		C1003	---	630		NR	
	6/16/97	227F014971		C2276	111	710		NR	
	6/20/97	226229657A		C3219	---	730		NR	
	7/2/97	227D493346		C3246	---	730		NR	
	5/9/98	226B6D6040		C5020	120	990		NR	
6/6/95	6/13/97	227E521530		C3205	---	740		NR	
	6/1/98	227F0C2021		C3287	---	850		NR	
6/8/95	6/5/97	227D460313		C3163	---	730		NR	
	7/9/97	227D4F6C61		C3252	---	730	9/16/97	JOHNSC	
	6/26/98	227D37346D		C4148	---	870		NR	
6/10/95	6/10/98	----[d]	227E74084D	-----	---	---		NR	
6/12/95	4/25/98	227E3C345A		C3259	---	830		NR	
6/14/95	5/11/98	227D4C1D35		C2333	---	840		NR	
6/16/95	6/20/97	227E625128		C2287	127	680		NR	
6/24/95	5/3/98	227D49644C		C5015	---	970		NR	
	5/22/98	226247754E		C3285	---	860		NR	

Appendix Table 10.2 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length (mm)	Length (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
6/28/95	5/28/97	22623B680E	C2181	142	710		NR	
6/30/95	5/1/98	227F200E06	C3261	---	820		NR	

Total adult returns:

Jacks	1	
2-ocean		60
3-ocean		30

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

These fish were released into the tailrace of Lower Granite Dam and were subsequently collected at a downstream dam where they were not observed to have been returned to the river. They were not used in any calculations.

[d] This adult was observed at Bonneville but not Lower Granite Dam; therefore, it was not included in any adult calculations.

Appendix Table 11.0 Total adult returns (hatchery and wild) to Lower Granite Dam from spring/summer chinook salmon smolts tagged as inriver migrants at Lower Granite Dam in spring 1996. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Length: Adult return date Bonn	Length: At smolt return date LGR	Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
4/13/96	6/25/98	41657E3F2A		C3299	122	860		NR	
4/16/96	5/5/98	41674A2B4E		C2322	147	770		NR	
	5/15/98	413174512B		C1035	140	680		NR	
4/18/96	5/11/98	41685C4104		C3279	178	760		DWOR	
	5/13/98	416B0A286E[c]		C2336	136	760		NR	
4/19/96	5/31/98	416A315851		C2344	137	690		NR	
	6/19/98	4167134605		C3296	139	770		NR	
4/21/96	4/22/98	416A34465F		C3258	148	710	6/12/98	LSALR	
	6/16/98	4168320D6B		C3292	157	790		NR	
4/22/96	4/29/98	5/11/98	416A175B3A		C0003	133	610		NR	
		5/13/98	416A2C680F		C1030	128	690		NR	
		6/7/98	416A684330		C2351	110	750		NR	
4/24/96	6/21/97	4169642718		C0004	115	460		NR	
4/25/96	4/27/98	5/16/98	41692A4428[d]		C1038	136	710		NR	
	4/29/98	----[e]	4166235D35		-----	127	---		NR	
4/26/96	5/14/98	41682F127D		C1033	111	690		NR	
	9/2/98	9/14/98	416B147465		-LYFE-	170	660		NR	
4/27/96	5/5/98	416B3D6B04		C2323	122	680		NR	
	5/10/98	4168554822		C1026	148	730	6/20/98	LSALR	
	5/11/98	4166671670		-LGH-	141	660		NR	
4/28/96	6/4/98	4152610355		-LGH-	141	630		NR	
4/29/96	6/14/97	4152534861		C1016	156	550		NR	
	5/13/98	41657E464B		C2335	151	690		NR	
	7/17/98	4152796003		C2360	139	780		NR	
4/30/96	5/12/98	416940712A		C1027	154	720		NR	
	5/12/98	416572320E		C2334	147	760		NR	
5/1/96	5/26/98	4167120C1A		C1043	138	730		NR	

Appendix Table 11.0 (cont.)

Smolt release date	Length: Adult return date Bonn	Length: At smolt LGR	Pit-tag code	At adult Jaw tag number		Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
5/3/96	6/10/98	413146182B		C1044	148	740		NR	
5/6/96	5/14/98	41317B7100		C2337	145	730		NR	
	5/22/98	4166363E2C		C2342	166	780		NR	
5/7/96	5/5/98	4166326D30		C1022	138	720		NR	
5/11/96	5/15/98	416A042836		C2338	136	780	6/18/98	KOOS	
5/13/96	5/15/98	414C020274		C1036	148	690	8/20/98	KOOS	
5/15/96	5/18/98	41314D3664		C1039	186	780		NR	
	6/19/98	4151346D41		C4143	141	790		NR	
5/16/96	6/16/98	4150696C44		C2348	146	840		NR	
5/19/96	5/6/98	41520D1857		C2325	139	690		NR	
	6/27/98	4153166B68		C4152	150	830	9/30/98	SALRSF	
	6/27/98	4152476A36		C3302	148	860		NR	
5/20/96	6/19/98	7/3/98	41515A512A	C4155	138	890		NR	
		7/3/98	4169556845	C2357	140	770		NR	
5/23/96	5/16/98	416B115250		C1037	159	730		NR	
5/29/96	5/21/98	4131523F45[c]		C1042	139	730	9/22/98	DWOR	
	7/2/98	41316A360C		C3304	145	820		NR	
5/30/96	6/16/98	227E642A16		C3291	147	840		NR	

Total adult returns:

Jacks	2
2-ocean	42
3-ocean	NA

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

These fish were released into the tailrace of Lower Granite Dam and were subsequently collected at a downstream dam where they were not observed to have been returned to the river. They were not used in any calculations.

[d] All fish released on this day were removed from the adult calculations because of problems encountered during barge loading which allowed an unknown number of transport fish to escape to the river.

[e] This adult was observed at Bonneville but not Lower Granite Dam; therefore, it was not included in any adult calculations.

Appendix Table 11.1 Total adult returns to Lower Granite Dam from hatchery spring/summer chinook salmon smolts tagged as inriver migrants at Lower Granite Dam in spring 1996. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	At smolt date LGR	Pit-tag code	At adult Jaw tag number	Length (mm)	Upstream tagging (mm)	adult recovery[a] return Date	adult recovery[a] Location[b]
4/16/96	5/5/98	41674A2B4E		C2322	147	770		NR
	5/15/98	413174512B		C1035	140	680		NR
4/18/96	5/11/98	41685C4104		C3279	178	760		DWOR
	5/13/98	416B0A286E[c]		C2336	136	760		NR
4/19/96	5/31/98	416A315851		C2344	137	690		NR
	6/19/98	4167134605		C3296	139	770		NR
4/21/96	4/22/98	416A34465F		C3258	148	710	6/12/98	LSALR
	6/16/98	4168320D6B		C3292	157	790		NR
4/22/96	4/29/98	5/11/98	416A175B3A		C0003	133	610		NR
		5/13/98	416A2C680F		C1030	128	690		NR
4/25/96	4/27/98	5/16/98	41692A4428[d]		C1038	136	710		NR
	4/29/98	----[e]	4166235D35		-----	127	---		NR
4/26/96	9/2/98	9/14/98	416B147465		-LYFE-	170	660		NR
4/27/96	5/5/98	416B3D6B04		C2323	122	680		NR
	5/10/98	4168554822		C1026	148	730	6/20/98	LSALR
	5/11/98	4166671670		-LGH-	141	660		NR
4/28/96	6/4/98	4152610355		-LGH-	141	630		NR
4/29/96	6/14/97	4152534861		C1016	156	550		NR
	5/13/98	41657E464B		C2335	151	690		NR
	7/17/98	4152796003		C2360	139	780		NR
4/30/96	5/12/98	416572320E		C2334	147	760		NR
	5/12/98	416940712A		C1027	154	720		NR
5/1/96	5/26/98	4167120C1A		C1043	138	730		NR
5/3/96	6/10/98	413146182B		C1044	148	740		NR
5/6/96	5/14/98	41317B7100		C2337	145	730		NR
	5/22/98	4166363E2C		C2342	166	780		NR
5/7/96	5/5/98	4166326D30		C1022	138	720		NR

Appendix Table 11.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	Pit-tag code	Jaw tag number	Length At smolt (mm)	Length At adult (mm)	Upstream tagging return Date	adult recovery[a] Location[b]
5/11/96	5/15/98	416A042836	C2338	136	780	6/18/98	KOOS	
5/13/96	5/15/98	414C020274	C1036	148	690	8/20/98	KOOS	
5/15/96	5/18/98	41314D3664	C1039	186	780		NR	
	6/19/98	4151346D41	C4143	141	790		NR	
5/16/96	6/16/98	4150696C44	C2348	146	840		NR	
5/19/96	5/6/98	41520D1857	C2325	139	690		NR	
	6/27/98	4153166B68	C4152	150	830	9/30/98	SALRSF	
	6/27/98	4152476A36	C3302	148	860		NR	
5/20/96 6/19/98	7/3/98	41515A512A	C4155	138	890		NR	
	7/3/98	4169556845	C2357	140	770		NR	
5/23/96	5/16/98	416B115250	C1037	159	730		NR	
5/29/96	5/21/98	4131523F45[c]	C1042	139	730	9/22/98	DWOR	
	7/2/98	41316A360C	C3304	145	820		NR	
5/30/96	6/16/98	227E642A16	C3291	147	840		NR	

Total adult returns:

Jacks	1
2-ocean	39
3-ocean	NA

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

These fish were released into the tailrace of Lower Granite Dam and were subsequently collected at a downstream dam where they were not observed to have been returned to the river. They were not used in any calculations.

[d] All fish released on this day were removed from the adult calculations because of problems encountered during barge loading which allowed an unknown number of transport fish to escape to the river.

[e] This adult was observed at Bonneville but not Lower Granite Dam; therefore, it was not included in any adult calculations.

Appendix Table 11.2 Total adult returns to Lower Granite Dam from wild spring/summer chinook salmon smolts tagged as inriver migrants at Lower Granite Dam in spring 1996. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	At smolt LGR	Pit-tag code	At adult Jaw tag number	Length (mm)	Upstream tagging (mm)	return Date	adult recovery[a] Location[b]
4/13/96	6/25/98	41657E3F2A	C3299	122	860		NR	
4/22/96	6/7/98	416A684330	C2351	110	750		NR	
4/24/96	6/21/97	4169642718	C0004	115	460		NR	
4/26/96	5/14/98	41682F127D	C1033	111	690		NR	

Total adult returns:

Jacks	1
2-ocean	3
3-ocean	30

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

Appendix Table 12.0 Total adult returns (hatchery and wild) to Lower Granite Dam from spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1996. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Length: Adult return date Bonn	Length: At smolt return date LGR	Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
4/18/96	6/13/97	416A400713		C0006	131	440		NR	
	5/5/98	4168193C06		C1021	142	690		NR	
4/20/96	5/14/98	4167363337		C1032	125	710		NR	
	6/19/98	416850762F		C3295	110	760		NR	
4/22/96	6/9/98	41694E0F7A		C2345	144	760		NR	
	6/24/98	4152053045		C4147	139	780		NR	
	7/4/98	41673A5E69		C2358	120	670		NR	
	7/8/98	414C03744A		C3305	118	870		NR	
	9/16/98	41531C6C55		-LYFE-	176	750		NR	
4/24/96	7/3/97	41511C0B55		C1019	143	570	8/1/97	IMNAHW	
	5/9/98	41671D6C48		C3273	109	780		NR	
5/16/98	6/16/98	41701F5067		C1045	112	660		NR	
	6/25/98	416A38102D		C3300	124	810		NR	
	7/1/98	416B271700		C2356	130	790		NR	
4/25/96	5/21/98	416B512122[c]		C1041	108	660		NR	
	5/22/98	416621456A[c]		C2341	148	780		NR	
4/28/96	5/11/98	4152671E3F		C1029	138	690	7/21/98	KOOS	
4/29/96	6/3/97	4131401963		C0005	137	410		NR	
5/3/96	7/13/98	4169470072		C2359	149	770		NR	
5/6/96	5/5/98	4151246F19		C3271	119	690		NR	
	5/6/98	41507D0967		C2326	166	760	7/9/98	DWOR	
5/7/96 6/8/98	6/21/98	416B455065		C4144	147	860		NR	
5/10/96	6/23/98	4131545B4E		C2350	132	780		NR	
	7/3/98	4168222655		C4154	150	890		NR	
	7/5/98	414C234420		C4156	133	820		NR	
5/11/96	5/5/98	416A54015D		C1025	181	780		NR	
	7/9/98	4168373C2D		C4158	195	750	8/20/98	KOOS	
5/12/96	5/21/98	4169745A0F		C1040	149	710		NR	

Appendix Table 12.0 (cont.)

	Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	adult recovery[a] return Date	adult recovery[a] Location[b]
5/13/96		5/5/98	4152021617	C1023	168	730			NR	
		5/14/98	415238465B	C1034	136	690			NR	
5/14/96	6/2/98	6/17/98	41683B2177	C1046	144	760			NR	
		6/29/98	41520E364F	C2354	141	750			NR	
5/16/96		7/7/97	4165700214	C1020	140	580		8/8/97	SALSFW	
		5/11/98	41681D467C	C1028	145	790			NR	
		6/22/98	415156133C	C2352	149	770			NR	
		6/26/98	416A7F4951	C2353	139	790			NR	
5/17/96		6/27/97	41522E7D70	-----	142	---			NR	
		6/14/98	416873255B	C4140	142	810			NR	
5/19/96		6/12/98	41514A0141	C2346	120	670			NR	
5/20/96		6/14/98	416A50496E	C2347	148	760			NR	

Total adult returns:

Jacks	5	
2-ocean		35
3-ocean		NA

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

[c] All fish released on this day were removed from the adult calculations because of problems encountered during barge loading which allowed an unknown number of transport fish to escape to the river.

Appendix Table 12.1 Total adult returns to Lower Granite Dam from hatchery spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1996. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	At smolt date LGR	Pit-tag code	At adult Jaw tag number	Length	Upstream tagging (mm)	(mm)	return Date	adult recovery[a] Location[b]
4/18/96	6/13/97	416A400713		C0006	131	440		NR	
	5/5/98	4168193C06		C1021	142	690		NR	
4/20/96	5/14/98	4167363337		C1032	125	710		NR	
4/22/96	6/9/98	41694E0F7A		C2345	144	760		NR	
	6/24/98	4152053045		C4147	139	780		NR	
	9/16/98	41531C6C55		-LYFE-	176	750		NR	
4/24/96	7/3/97	41511C0B55		C1019	143	570	8/1/97	IMNAHW	
	6/25/98	416A38102D		C3300	124	810		NR	
	7/1/98	416B271700		C2356	130	790		NR	
4/25/96	5/22/98	416621456A[c]		C2341	148	780		NR	
4/28/96	5/11/98	4152671E3F		C1029	138	690	7/21/98	KOOS	
4/29/96	6/3/97	4131401963		C0005	137	410		NR	
5/3/96	7/13/98	4169470072		C2359	149	770		NR	
5/6/96	5/6/98	41507D0967		C2326	166	760	7/9/98	DWOR	
5/7/96	6/8/98	6/21/98	416B455065	C4144	147	860		NR	
5/10/96	6/23/98	4131545B4E		C2350	132	780		NR	
	7/3/98	4168222655		C4154	150	890		NR	
	7/5/98	414C234420		C4156	133	820		NR	
5/11/96	5/5/98	416A54015D		C1025	181	780		NR	
	7/9/98	4168373C2D		C4158	195	750	8/20/98	KOOS	
5/12/96	5/21/98	4169745A0F		C1040	149	710		NR	
5/13/96	5/5/98	4152021617		C1023	168	730		NR	
	5/14/98	415238465B		C1034	136	690		NR	
5/14/96	6/2/98	6/17/98	41683B2177	C1046	144	760		NR	
	6/29/98	41520E364F		C2354	141	750		NR	
5/16/96	7/7/97	4165700214		C1020	140	580	8/8/97	SALSFW	

Appendix Table 12.1 (cont.)

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length (mm)	Upstream tagging (mm)	return Date	adult recovery[a] Location[b]
5/16/96	5/11/98	41681D467C	C1028	145	790		NR	
	6/22/98	415156133C	C2352	149	770		NR	
	6/26/98	416A7F4951	C2353	139	790		NR	
5/17/96	6/27/97	41522E7D70	-----	142	---		NR	
	6/14/98	416873255B	C4140	142	810		NR	
5/19/96	6/12/98	41514A0141	C2346	120	670		NR	
5/20/96	6/14/98	416A50496E	C2347	148	760		NR	

Total adult returns:

Jacks	5
2-ocean	28
3-ocean	NA

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

[c] All fish released on this day were removed from the adult calculations because of problems encountered during barge loading which allowed an unknown number of transport fish to escape to the river.

Appendix Table 12.2 Total adult returns to Lower Granite Dam from wild spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1996. Total returns by age class are provided at the end of the table. Also shown in the table are adults detected at Bonneville Dam.

Smolt release date	Adult return date Bonn	Adult return date LGR	At smolt Pit-tag code	At adult Jaw tag number	Length (mm)	Length (mm)	Upstream tagging (mm)	Upstream tagging (mm)	return Date	adult recovery[a] Location[b]
4/20/96	6/19/98	416850762F	C3295	110	760		NR			
4/22/96	7/4/98	41673A5E69	C2358	120	670		NR			
	7/8/98	414C03744A	C3305	118	870		NR			
4/24/96	5/9/98	41671D6C48	C3273	109	780		NR			
5/16/98	6/16/98	41701F5067	C1045	112	660		NR			
4/25/96	5/21/98	416B512122[c]	C1041	108	660		NR			
5/6/96	5/5/98	4151246F19	C3271	119	690		NR			

Total adult returns:

Jacks	0
2-ocean	7
3-ocean	NA

[a] Upstream recoveries of adults returning in 1998 were incomplete at the time this document was published.

[b] Recovery location abbreviatons: NR = Not recovered; CLWR = Clearwater River; CLWRNF = Clearwater River N.F.; CROTRP = Crooked River Trap; DWOR = Dworshak Hatchery; JOHNSC = Johnson Creek; KOOS = Kooskia Hatchery; LOOH = Lookingglass Hatchery; LSALR = Little Salmon River; LSR/RR = Little Salmon or Rapid Rivers; Oxbow TRP = Trap at Hell's Canyon Dam; RAPH = Rapid River Hatchery; RPDTRP = Rapid River Trap; SALSFW = South Fork Salmon River Weir; SALRSF = South Fork Salmon River; SESECR = Secesh River; SNAKER = Snake River; WALTONC = Walton Creek.

[c] All fish released on this day were removed from the adult calculations because of problems encountered during barge loading which allowed an unknown number of transport fish to escape to the river.