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# Research related to transportation of juvenile salmonids on the Columbia and Snake Rivers, 2000

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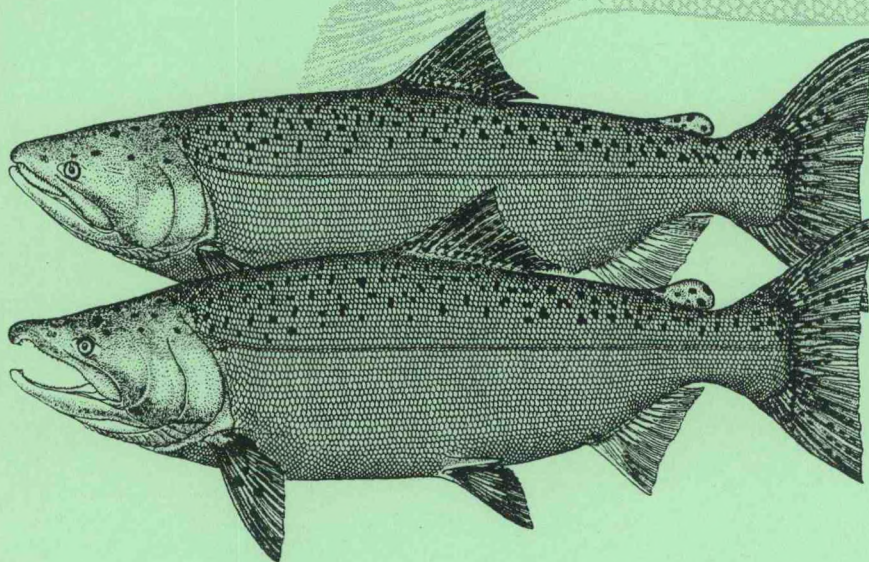
***Northwest Fisheries  
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***National Marine  
Fisheries Service***

*Seattle, Washington*

by  
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Neil N. Paasch, Kenneth L. Thomas,  
Kenneth W. McIntyre, Benjamin P. Sandford,  
and Gene M. Matthews

October 2001





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Columbia and Snake Rivers, 2000**

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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Report of Research by

Fish Ecology Division  
Northwest Fisheries Science Center  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration  
2725 Montlake Boulevard East  
Seattle, Washington 98112-2097

to

U. S. Army Corps of Engineers  
Walla Walla District  
Delivery Order E86960099

October 2001



## EXECUTIVE SUMMARY

Since 1995, the National Marine Fisheries Service has conducted evaluations at Lower Granite Dam of transported vs. inriver migrant spring/summer chinook salmon and steelhead smolts. During 2000, we continued this work with two major changes in the study protocol. First, we tagged only wild spring/summer chinook salmon and steelhead smolts. Second, all tagged fish were released into the Lower Granite Dam tailrace. The transport group was composed of fish collected and transported at Little Goose Dam. This group will be compared to PIT-tagged fish that were not detected at a Snake River collector dam during their smolt migration. The studies were designed to compare survival to adulthood between smolts transported to below Bonneville Dam and those allowed to migrate downstream volitionally from the Lower Granite Dam tailrace under optimized inriver survival conditions. We also continued to monitor the prevalence of marine mammal abrasions on adult spring/summer chinook salmon at Lower Granite Dam.

### **Transportation vs. Inriver Migration of Pit-Tagged Spring/Summer Chinook Salmon and Steelhead Smolts**

From 30 March through 19 June 2000, we PIT tagged a total of 59,333 wild yearling smolts, releasing 58,811 into the Lower Granite Dam tailrace. Of the 58,811 fish released, 15,521 were subsequently collected and transported from Little Goose Dam and released below Bonneville Dam, while 24,449 were not subsequently detected at a Snake River collector dam. Post-marking delayed mortality (24-hour) averaged 0.8% for the period. Inriver-migrating fish collected at downstream collector dams (18,841 fish) were returned to the river using PIT-tag diversion systems (slide gates).

From March to August 2000, we also recovered age-2-ocean spring/summer chinook salmon adults from smolts tagged in 1998 and jacks from smolts tagged in 1999. From the 1998 tagging, we recovered 223 age-2-ocean transported fish (197 hatchery and 26 wild) and 115 age-2-ocean inriver migrant fish that had never been detected at a Snake River collector dam below Lower Granite Dam (89 hatchery and 26 wild). Based on all 1998 returns combined (jacks and age-2-ocean fish), for releases through 3 May 1998, the transport/inriver adult return ratio (T/I) was 1.2 for all fish combined (hatchery and wild). For hatchery and wild fish, T/Is were 1.2 and 0.9, respectively. For releases after 3 May, T/Is were 5.7 for hatchery fish, 0.2 for wild fish, and 3.3 for all fish combined. For jacks from the 1999 tagging season, 88 (77 hatchery and 11 wild) were transported from Lower Granite Dam and 22 (21 hatchery and 1 wild) were inriver-migrating fish not detected at a Snake River collector dam below Lower Granite Dam.



From 30 March through 19 June, we PIT tagged 71,107 wild steelhead smolts at Lower Granite Dam. Of this total, 21,786 were transported from Little Goose Dam and released below Bonneville Dam, while 27,019 were not subsequently detected at a Snake River collector dam. Post-tagging delayed mortality (24 hour) averaged 0.2% for the period. Inriver-migrating fish collected at downstream dams were returned to the river using PIT-tag diversion systems (slide gates).

We recovered age-1-ocean steelhead adults from smolts tagged in 1999. Through 15 October, we recovered 179 (151 hatchery and 28 wild) transported fish and 40 (all hatchery fish) inriver fish not detected at a Snake River collector dam below Lower Granite Dam. The T/I was 1.1 for all fish combined and 1.0 for hatchery fish. A T/I for wild fish cannot be calculated at this time because no inriver wild fish not detected as smolts at a Snake River collector dam below Lower Granite Dam have been recovered as yet.

#### **Marine Mammal Abrasions—Lower Granite Dam**

We also continued to observe high incidence of abrasion from marine mammal teeth and claws on adult spring/summer chinook salmon sampled at Lower Granite Dam in 2000. Prevalence of abrasions was 18.8% on adults examined, with open wounds occurring on about 23.8% of the fish with abrasions.

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## INTRODUCTION

Research to evaluate the effects of transporting juvenile salmonids around dams began over 30 years ago by the National Marine Fisheries Service. Evaluations of transported spring/summer chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*O. mykiss*) were conducted from various Snake River dams from 1968 through 1980. Similar transportation studies of summer/fall chinook salmon and steelhead smolts were conducted at McNary Dam on the Columbia River from 1978 through 1983.

Results of these transportation studies, which are based upon adult returns, have varied by species. For summer/fall chinook salmon (subyearlings) and steelhead, results have consistently shown that significantly more marked and transported fish returned to the point of release than did marked fish released to migrate in river. However, for spring/summer chinook salmon (yearling smolts), results have been less consistent. Results from the earliest studies, during 1968-1973, 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 1975-1980 yielded inconclusive results because very low numbers of adults returned from either marked 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 1975-1980 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 was introduced at Lower Granite Dam in 1983 (Matthews et al. 1986). This system virtually eliminated the major physical trauma associated with the handling and marking process. All indications suggest that these modifications and improvements substantially increased survival.

In 1986, a study was initiated at Lower Granite Dam to reevaluate smolt transportation of yearling chinook salmon migrants from the Snake River after substantial modifications were made to collection and bypass facilities. Spring/summer chinook salmon smolts were marked with coded-wire tags (CWT) 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 migrant fish to a release location below Little Goose Dam. The studies were further criticized because a small fraction of inriver-migrating fish were inadvertently transported from McNary Dam and because inriver migration conditions at the time of these studies were not considered optimal. Thus, it was argued, the

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 from Lower Granite Dam. However, present studies no longer rely on the CWTs and freeze brands used in earlier studies due to a major fish-marking technology advance, the passive integrated transponder (PIT) tag (Prentice et al. 1990). The PIT tags, along with recently developed PIT-tag diversion systems installed at collector dams downstream from Lower Granite Dam (Matthews et al. 1990, 1992; Achord et al. 1992; Harmon et al. 1995; Marsh et al. 1999), can be used to direct fish to different passage routes within a collection facility based on each fish's unique tag code (separation-by-code) (Prentice et al. 1999).

This combination of technologies allows transportation studies to be conducted directly from Lower Granite Dam: we can release PIT-tagged study fish directly into the Lower Granite Dam tailrace and have the majority of fish collected at Little Goose Dam sent to raceways for transportation, while the remainder are returned to the river. Furthermore, the collection history and final disposition of each inriver-migrating fish can now be recorded. With this information, we can determine whether an adult fish was part of a transportation group, part of a group bypassed at one or more collection facilities, or part of a group never detected at any of the Snake River collection facilities below Lower Granite Dam.

The primary objective of this study is to compare adult returns of spring/summer chinook salmon and steelhead to Lower Granite Dam between fish PIT-tagged as smolts and transported to a release site below Bonneville Dam and those allowed to migrate inriver under optimal conditions for inriver survival. Detections from PIT-tagged smolts released to migrate inriver will also provide data for short-term survival estimates between the Lower Granite and Bonneville Dam tailraces using the Single-Release Model (Iwamoto et al. 1994, Smith et al. 1999).

Here we report tagging results and other data from transported and inriver-migrating juvenile study fish during the 2000 outmigration, and adult returns from the outmigrations of 1998 and 1999. As in previous years, we examined returning adults for evidence of marine mammal teeth and claw marks during our recoveries. We also report the incidence of these abrasions.



## METHODS

### Smolt Sampling and Tagging

During spring 2000, we continued the ongoing transportation study at Lower Granite Dam (Marsh et al. 1996, 1997, 2000; Harmon et al. 2000), with two major changes in study protocol from previous years. First, because large numbers of hatchery-reared spring/summer chinook salmon were PIT tagged upstream from Lower Granite Dam, we PIT tagged only wild spring/summer chinook salmon and steelhead smolts collected at the dam. Second, we released all PIT-tagged fish into the Lower Granite Dam tailrace.

To create the transport study group, we set the separation-by-code PIT-tag diversion system at Little Goose Dam to divert 80% of the fish collected at the juvenile fish facility to transportation. We then estimated the number of migrants that arrived in the tailrace of Little Goose Dam without being detected (Sandford and Smith, in press) to establish the base number of inriver migrants. From this number, we estimated the number of inriver migrants arriving in the Lower Monumental Dam tailrace that were not detected at Lower Monumental Dam. These fish then became our inriver-migrating control group.

Fish collected at Little Goose Dam that were not diverted to transportation (20% of those collected at the dam) were returned to the river to estimate survival from Lower Granite to Little Goose Dam. At the dams below Little Goose Dam, we diverted all PIT-tagged study fish collected in the juvenile fish facilities back to the river to make reach survival estimates.

For the initial tagging year (1995), we designed the study to detect a minimum transport-to-inriver adult return ratio (T/I) of 1.3. For that year, Muir et al. (1996) estimated inriver survival from Lower Granite Dam tailrace to McNary Dam tailrace to be 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 to detect a minimum T/I of 1.5. In 2000, we again marked enough fish to detect a minimum T/I of 1.5 for both species.

Sample size calculations for a transport study using transport smolt to adult return rates (SARs) relative to inriver SARs can be based on determining precision around the estimated T/I such that the half-width of a confidence interval (CI) on the true T/I will not contain the value 1, or the confidence interval on the true log-transformed T/I,  $\ln(T/I)$ , will not contain 0. Therefore, for a desired significance level  $\alpha$  and power  $(1-\beta)$ , the number of fish needed can be determined in the following manner.

Minimum detectable T/I is needed such that:

$$\ln(T/I) - (t_{\alpha/2} + t_{\beta}) \times SE(\ln(T/I)) = 0,$$

where  $SE(\ln(T/I)) \approx \sqrt{\frac{1}{n_T} + \frac{1}{n_I}} = \sqrt{\frac{2}{n}}$ ,  $n_T = n_I = n$  is the number of adult returns per treatment (n for transport and inriver groups set equal for simplicity). The previous two statements imply that the number of adults needed is:

$$n \approx \frac{2 \times (t_{\alpha/2} + t_{\beta})^2}{(\ln(T/I))^2}$$

For  $\alpha = 0.05$ ,  $\beta = 0.20$ , and an expected transport SAR of at least 2.1% for each species, sample sizes needed at Lower Granite Dam are listed as follows (N denotes the number of juveniles):

T/I	n	$N_T$	$N_I = N_T \text{ T/I}$	$N_{\text{Total}}$
1.4	142	6,800	9,520	16,320

In 1995, 29.7% of the yearling chinook salmon smolts we released to the Lower Granite Dam tailrace were never again detected at a downstream collector dam. We estimated that a minimum of 20% of the wild yearling chinook salmon smolts released to the Lower Granite Dam tailrace during the 2000 migration would arrive in the Little Goose Dam tailrace but would not be detected thereafter at a downstream collector dam. To ensure that this minimum number of fish would arrive in the Little Goose Dam tailrace required a release of approximately 47,600 fish ( $9,520 \div 0.2$ ) into the Lower Granite Dam tailrace.

For wild steelhead smolts, we expected that 15% of the smolts released into the Lower Granite Dam tailrace would arrive in the Little Goose Dam tailrace and not be detected thereafter at a downstream collector dam; therefore, it was necessary to PIT tag and release at least 63,500 ( $9,520 \div 0.15$ ) wild steelhead smolts into the Lower Granite Dam tailrace.

These release numbers will also provide numbers of smolts collected in the transport test groups at Little Goose Dam that exceed study design requirements. For example, assuming an approximate 40% collection efficiency at Little Goose Dam, 19,400 ( $47,600 \times 0.4$ ) wild yearling chinook salmon smolts and 25,400 ( $63,500 \times 0.4$ ) wild steelhead smolts will be collected for transport at that dam.



Basic collection and handling followed the methodology described by Marsh et al. (1996). However, we continued to improve the system. Because of the large number of unclipped hatchery spring/summer chinook salmon and steelhead smolts released above Lower Granite Dam in 2000, we added CWT quality control devices (QCD) to the sorting lines and constructed devices for measuring fork lengths of spring/summer chinook salmon smolts for use in the sorting lines. All unclipped spring/summer chinook salmon smolts that fit in the measuring devices (we used the fork length to distinguish between wild and hatchery unclipped fish as described in Marsh et al. 1997) were sent through the QCDs. All unclipped steelhead smolts were also passed through the QCDs. The QCDs diverted fish with a CWT into a reject line, where they were counted and sent out to a raceway without being PIT-tagged.

We also made improvements to the recirculating water system in the tagging and sorting lines to reduce or eliminate temperature fluctuations and horizontal transmission of pathogens during tagging operations. The single recirculating water system used in past years supplied anesthetic water to both the sorting and tagging troughs and lines. For 2000, we replaced the single recirculating system with two recirculating systems, one for the tagging troughs and lines and one for the sorting troughs and lines. Each of the two systems included a chiller, 100- and 25- $\mu$ m filters, and a UV-light sterilization system.

### **Inriver Migration**

During the 2000 outmigration, we tracked inriver study fish as they passed through collection systems at dams downstream from Lower Granite Dam using the methods described by Marsh et al. (1996). Prior to 20 June 2000, 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 20 June, collection and transport operations began at McNary Dam, and the PIT-tag diversion system was used thereafter to return PIT-tagged fish to the river. At Little Goose Dam, fish detected on coils leading to raceways were assumed to have been transported, while fish detected on diversion system coils were assumed to have been returned to the river.

At the end of the smolt migration, we obtained information from the COE project biologist regarding periods of time when all fish were bypassed to the river from raceways. For each dam, we subtracted from the transport data set all fish whose final detections were on coils leading to raceways during these periods. All fish detected at Little Goose Dam that were not part of the transport data set were removed from the inriver data set. All fish detected at Lower Monumental Dam were removed from the inriver data set. Fish detected at McNary Dam prior to 20 June were included in the inriver data set because they were treated the same as the general population of fish collected at the dam (i.e., returned to the river).

## **Adult Recoveries and Data Analysis**

We will continue to recover adults in each of the three years following tagging of juvenile spring/summer chinook salmon and in each of the four years following the tagging of steelhead. The procedures for data analysis described by Marsh et al. (1996) were modified as described in Sandford and Smith (in press). They 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. This method apportions the number of fish released at Lower Granite Dam into various downstream detection-history categories based on estimated detection percentages at the downstream dams.

To calculate 95% CIs for various T/Is, release days were pooled until a minimum of two adults returned in both transport and in-river 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/Is applicable to the untagged population. The weighted mean T/Is and CIs 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 data sets, there appeared to be a linear relationship between T/I and release date and/or total river flow. We used the linear regression of T/Is on these explanatory variables to examine possible relationships that would account for the observed fairly high temporal variability.

## **RESULTS AND DISCUSSION**

### **Smolt Sampling and Tagging**

We PIT tagged fish from 30 March through 23 June 2000. During this period, we tagged 59,333 wild yearling spring/summer chinook salmon (Table 1 and Appendix Table 1), or 2.6% of the total number of yearling spring/summer chinook salmon collected at Lower Granite Dam in 2000. The number of fish tagged daily ranged from 0 to 3,973. Of the 59,333 wild yearling spring/summer chinook salmon tagged, 58,811 were released into the Lower Granite Dam tailrace.

We tagged 71,107 wild steelhead (Table 1 and Appendix Table 1), or 1.6% of the total steelhead collected at Lower Granite Dam in 2000. The number of fish tagged daily ranged from 4 to 4,525. Of the 71,107 wild steelhead tagged, 70,711 were released into the Lower Granite Dam tailrace.



Table 1. Numbers and mean fork length of wild spring/summer chinook salmon and wild steelhead smolts PIT-tagged and released to migrate inriver, Lower Granite Dam, 2000.

	Spring/summer chinook salmon		Steelhead	
	Number	Mean fork length (mm)	Number	Mean fork length (mm)
Tagged	59,333	110.3	71,107	184.4
Released	58,811	110.3	70,711	184.4

Based on mortality counts from the recovery holding tank for inriver migrants, post-marking delayed mortality (24-hour) averaged 0.8% for spring/summer chinook salmon and 0.2% for steelhead over the entire tagging season. This value is exceptionally low, considering that we tagged virtually every fish sampled. We rejected only a few fish that were either severely injured or exhibited gross symptoms of bacterial kidney disease. By tracking the unique PIT-tag code of each mortality, we determined the body condition recorded when the live fish was tagged.

As in past years (Marsh et al. 1996, 1997, 2000), descaling appeared to impact post-marking delayed mortality for spring/summer chinook salmon. When tagged, 0.6% of all fish were recorded as descaled; however, of the delayed mortalities, 12.6% were recorded as descaled during tagging. For steelhead, descaling and body injury seemed to have similar impacts on post-tagging delayed mortality. For all fish tagged, 0.4% were descaled and 2.3% had a body injury, while the delayed mortality rates were 1.2 and 7.9% for the two respective groups.

We recorded fork lengths of all fish during tagging. During the course of tagging, we encountered spring/summer chinook salmon 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 wild or hatchery origin. An analysis by Marsh et al. (1997) showed that a fork length of 123 mm could be used as a maximum length for wild fish. After a reevaluation, we adjusted the maximum fork length for wild fish up to 124 mm for the 2000 outmigration. The simple measuring devices we constructed to separate hatchery and wild fish by length at the sorting troughs worked very well. Over the course of the season, only 80 spring/summer chinook salmon smolts greater than 124 mm were tagged (less than 0.02% of the smolts handled).

### **Inriver Migration**

As inriver study fish continued their seaward migration, some were recaptured at dams downstream from Lower Granite Dam: of 58,811 wild yearling spring/summer chinook salmon released, 34,362 (58.4%) were detected at least once at a downstream collector dam. Final dispositions for the 58,811 fish released were 15,521 transported from Little Goose Dam (Table 2 and Appendix Tables 2 through 5), 24,449 not detected at a Snake River collector dam, and 18,841 bypassed at one or more of the Snake River collector dams.

Of the 70,711 wild steelhead released, 43,692 (61.8%) were detected at least once at a downstream collector dam. Final dispositions for the 70,711 fish released were 21,786 transported from Little Goose Dam (Table 3 and Appendix Tables 2 and 6-8), 27,019 not detected at a Snake River dam, and 21,906 bypassed at one or more of the Snake River dams.



Table 2. Final disposition of PIT-tagged spring/summer chinook salmon smolts released at Lower Granite Dam in spring 2000 and subsequently detected at Little Goose Dam.

Final disposition*	Number of smolts Little Goose Dam
River	5,590
Bypassed	0
Sample	313
Transported	15,521
Unknown	39
Totals	
Observed	21,463
Transport group	15,521
To river (removed from study)	5,942

Table 3. Final disposition of PIT-tagged steelhead smolts released at Lower Granite Dam in spring 2000 and subsequently detected at Little Goose Dam.

Final disposition*	Number of smolts Little Goose Dam
River	7,335
Bypassed	0
Sample	479
Transported	21,788
Unknown	92
Totals	
Observed	29,694
Transport group	21,788
To river (removed from study)	7,335

\* Definitions:

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

At Little Goose Dam, our initial goal was to transport 80% of the spring/summer chinook salmon and steelhead collected. However, 72.3% of the spring/summer chinook salmon detected and 73.4% of the steelhead detected were transported from the dam during the smolt migration. In 2000, no spring/summer chinook salmon or steelhead were returned to the river from the raceways at Little Goose and Lower Monumental Dams.

Based upon PIT-tag detections at John Day and Bonneville Dams and in the paired-trawl net in the estuary, we made preliminary estimates of survival from the Lower Granite Dam tailrace to the McNary Dam and Bonneville Dam tailraces. For wild spring/summer chinook salmon smolts, we estimated survivals of 76.6 and 47.7% over the two respective reaches; for wild steelhead, we estimated survivals of 70.8 and 51.0% over the respective reaches.

### **Adult Recoveries and Data Analysis**

#### **Adult Recoveries from the 1998 Smolt Migration**

At Lower Granite Dam, we recovered age-2-ocean adult spring/summer chinook salmon from the 1998 study year (Table 4 and Appendix Tables 9-10.2). The first adult arrived at the dam on 13 April and the last arrived on 21 July.

In total, we recovered 426 age-2-ocean adults during 2000, bringing the total returns from the 1998 tagging to 493 fish (67 jacks). However, we eliminated eight fish from the analysis for a variety of reasons including PIT tags that had not been recorded during smolt tagging and inriver study fish that were transported at dams downstream from Lower Granite Dam.



Table 4. Preliminary summary of recovered adult spring/summer chinook salmon marked at Lower Granite Dam in 1998 for the transportation study (recoveries through 17 August 2000). The inriver group includes only fish not detected during their outmigration at a Snake River collector dam after release into the Lower Granite Dam tailrace. PIT-tag recoveries above Lower Granite Dam are all listed (recoveries reported through 15 October 2000).

Group <sup>a</sup>	Number released	Adult returns at Lower Granite Dam		PIT-tag recoveries			
		Number	%	Hatcheries	Sports fishery	Spawning grounds	Traps
Transported							
Hatchery	38,752	226	0.58	19	0	0	10
Wild	6,689	31	0.46	0	0	0	0
Total	45,441	257	0.57	19	0	0	10
Inriver <sup>b</sup>							
Hatchery	23,127	109	0.47	8	0	0	6
Wild	3,364	27	0.80	3	0	0	0
Total	26,491	136	0.51	11	0	0	6

<sup>a</sup> 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).

<sup>b</sup> Numbers adjusted as described in Sandford and Smith (in press).

Of the remaining 485 adults in the study, 257 (226 hatchery and 31 wild) and 228 (180 hatchery and 48 wild) were from the transport and inriver releases, respectively. The SARs of 1998 study fish are about four times higher than those of the 1996 study fish, and are also already higher than the SARs from the 1995 study fish. Overall SARs to Lower Granite Dam were 0.57% for the transported group and 0.34% for all inriver fish (including those bypassed once or more than once downstream from Lower Granite Dam), for an overall T/I of 1.7. When we compared the transport SAR to the SAR of inriver fish not detected at a Snake River dam after release from Lower Granite Dam (0.51%; 136 adults from 26,491 smolts), the overall T/I dropped to 1.1. We will calculate 95% confidence intervals when the age-3-ocean adults return in spring/summer 2001.

Hatchery and wild fish accounted for 83.6 and 16.4% of the returning adults, respectively. Percentages of hatchery and wild fish tagged as smolts were 80.5 and 19.5%, respectively (Marsh et al. 2000), although the wild fraction was bolstered to some extent because some hatchery fish were not adipose-fin clipped. Transport SARs were 0.58% for hatchery fish and 0.46% for wild fish, while SARs for all inriver fish were 0.31% for hatchery fish and 0.58% for wild fish. The respective overall T/Is for hatchery and wild fish were 1.9 and 0.9.

When we compared transport SARs to inriver SARs of fish not detected at a Snake River dam after release from Lower Granite Dam (0.47% for hatchery fish and 0.80% for wild fish), T/Is dropped to 1.2 and 0.6 for hatchery and wild fish, respectively. When we adjusted the T/Is for observed variability over the course of the season, we obtain an overall T/I of 1.6, and hatchery and wild T/Is of 1.2 and 1.0, respectively.

During upstream passage, 44 adults (39 hatchery and 5 wild) were observed on detection coils in the adult fish facility (AFF) located in the Washington shore ladder at Bonneville Dam. Of these adults, 23 were radio tagged by researchers from the University of Idaho (15 transports/8 inriver). The radio-tagged fish were released below Bonneville Dam and tracked as they moved up the Columbia and Snake Rivers. Of these 23 radio-tagged adults, 14 (8 transports/6 inrivers) were detected passing Lower Granite Dam, while the remaining 9 (7 transports/2 inrivers) were last observed at various locations from downstream from Bonneville Dam to Ice Harbor Dam and the Hanford Reach. Data from radio-tagged adults showed that 53.3% of the transported fish and 75.0% of inriver fish successfully migrated from Bonneville Dam to Lower Granite Dam.

Of the remaining 21 (13 transports/8 inrivers) PIT-tagged adults detected passing through the AFF, 14 (10 transports/4 inrivers) were detected passing Lower Granite Dam. Data from these non-radio-tagged adults showed that 76.9% of the transported fish and 50.0% of the inriver fish successfully migrated from Bonneville Dam to Lower Granite Dam. Combining all 44 fish, 64.3% of the transported fish and 62.5% of the inriver fish successfully migrated from Bonneville Dam to Lower Granite Dam.



All five of the wild fish detected at the AFF successfully migrated from Bonneville Dam to Lower Granite Dam (2 radio-tagged fish: 1 transports and 1 inrivers; 3 non-radio-tagged fish: 2 transports and 1 inrivers).

Prior to release back to the ladder, we examined each adult for marks and injuries and recorded its fork length. We are beginning to receive information regarding upstream recoveries of the study fish. Information on these recoveries through 15 October 2000 is included in Appendix Tables 13-14.2.

As for the 1995 study fish, SARs varied over the season (Figs. 1-2). The SARs of transported fish from the 1995 and 1998 study groups were generally much lower for fish transported in April than for those transported in May, although the exact timing of the somewhat abrupt increase in transport SARs differed by about 8 days between the two years. Furthermore, during the earlier periods of both years, SARs of inriver migrants were often equal to or higher than SARs of transported fish. However, during the second half of the migration in both years, transport SARs were nearly always at least twice as high as inriver migrant SARs, the expected result based upon earlier estimates of inriver survival. Inriver migrant SARs were highly variable through time in 1995 and trended downward in 1998.

The relatively rapid rise in transport SARs that occurred near the beginning of May in both years was an unexpected result. To the best of our knowledge, the event does not appear related to any environmental or biological factor examined during the freshwater phase. Apparently, some rather significant, post-release phenomenon affected the survival of transported fish in April and then dissipated over a rather short period in both years. The SARs of inriver-migrant fish tagged and released in April may not have been affected because the great majority of these fish would not have arrived below Bonneville Dam until after the SARs for transported fish had increased substantially. We do not know if this pattern is typical or if it occurs infrequently over time, although we suspect it may relate to certain ocean conditions or the presence of highly mobile marine predators, such as Pacific hake (*Merluccius productus*) during certain periods.

We also regressed inriver migrant SARs against lower Snake River flows and transport SARs against lower Columbia River flows during the 1995 and 1998 study years (Figs. 3-5). We found no relationship for inriver migrants in either year. This follows the same trend documented for juveniles over the past several years. For transported fish, SARs appeared to be related to flow in 1995, but not in 1998.

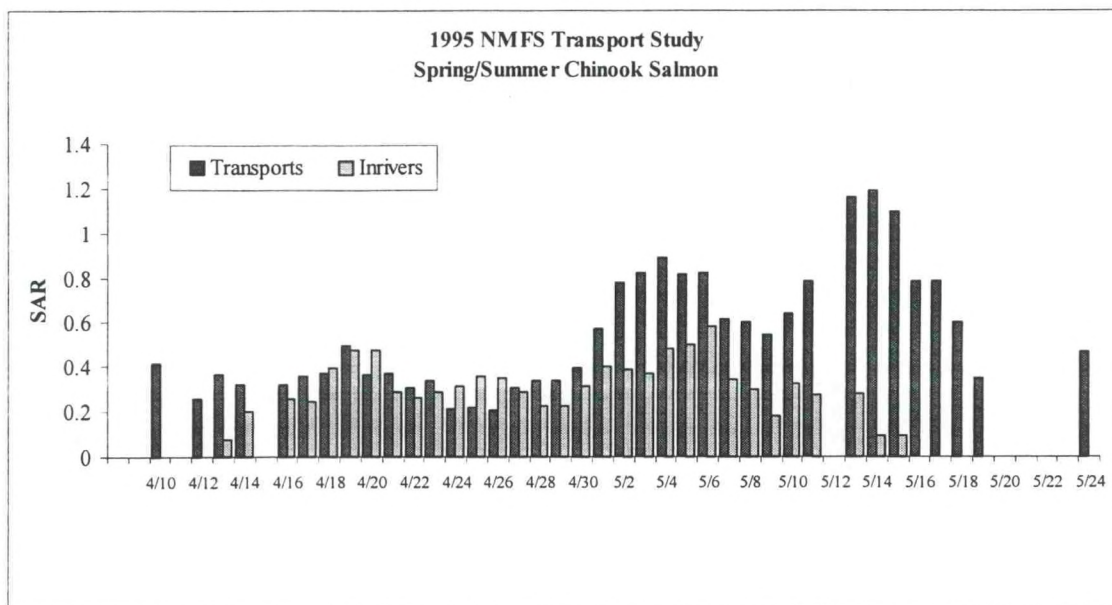


Figure 1. Smolt-to-adult return ratios (SARs) for transported and in river migrant spring/summer chinook salmon smolts tagged at Lower Granite Dam in 1995. Data presented as 3-day running averages of daily releases.

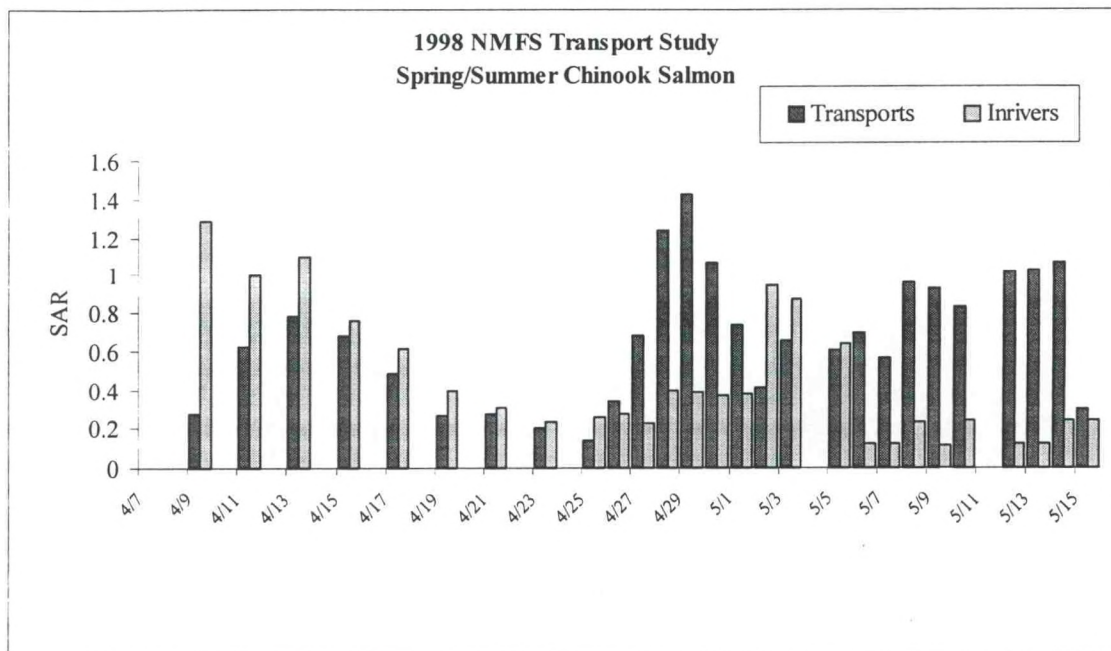


Figure 2. SARs for transported and in river migrant spring/summer chinook salmon smolts tagged at Lower Granite Dam in 1998. Data presented as 3-day running averages of daily releases and juvenile release numbers adjusted proportionally to daily collection numbers.



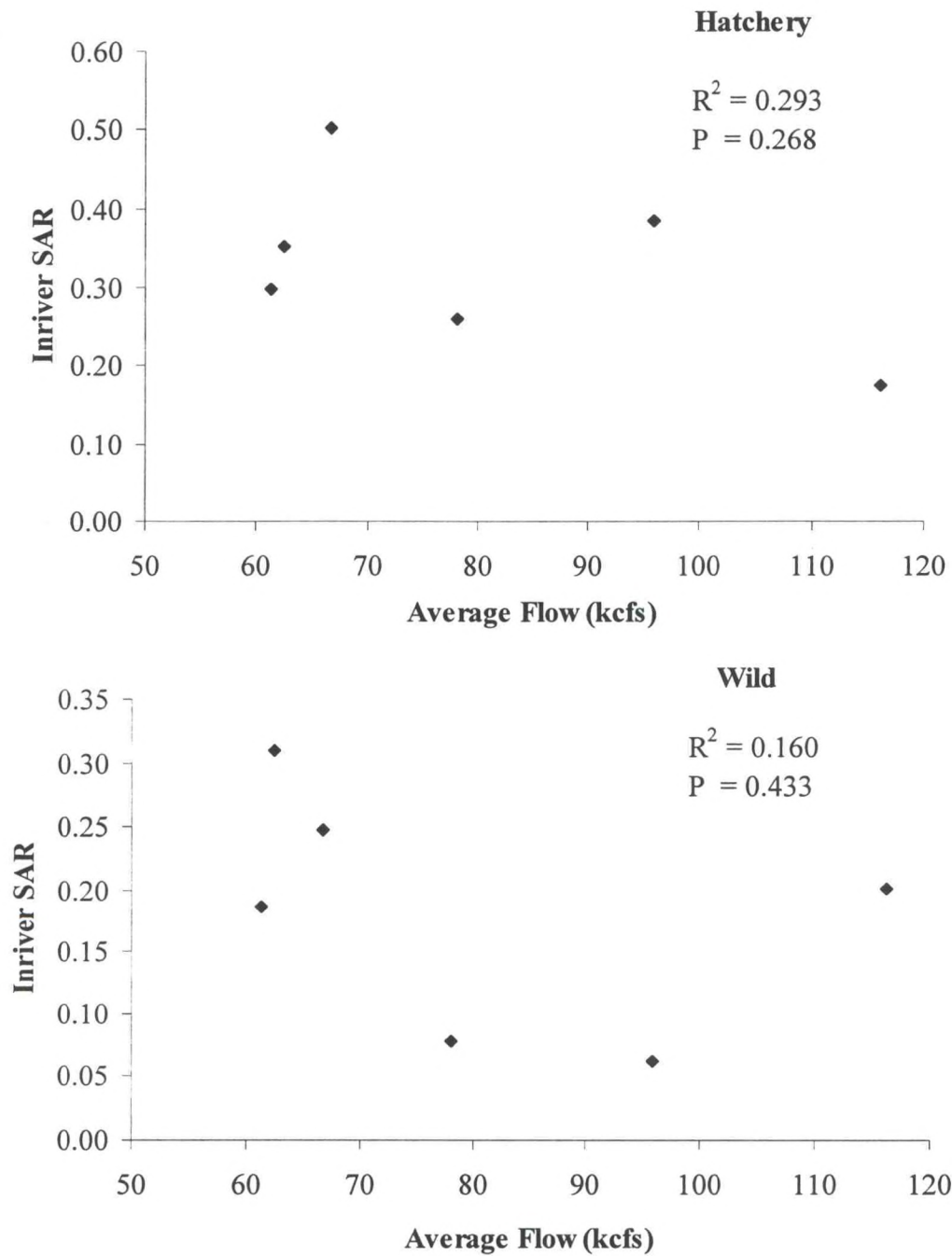


Figure 3. Inriver smolt-to-adult return ratios (SAR) vs. Snake River flows for hatchery and wild spring/summer chinook salmon smolts released in spring 1995.

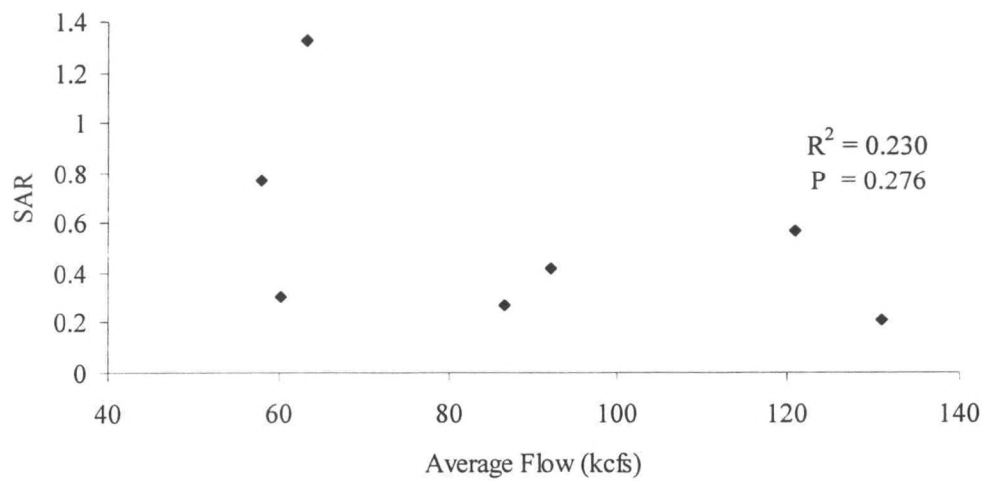
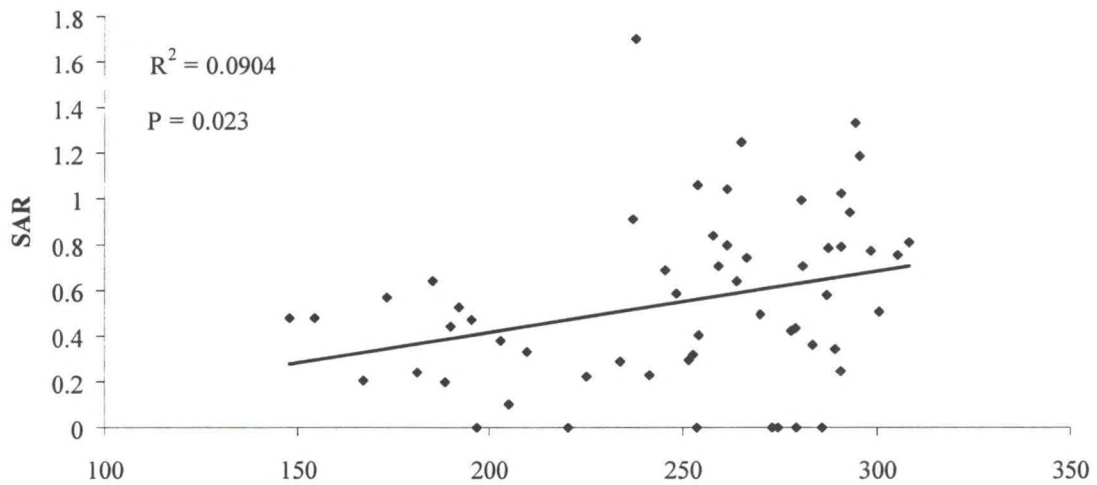


Figure 4. Inriver smolt-to-adult return ratios (SAR) vs. Snake River flows for combined hatchery and wild spring/summer chinook salmon smolts in spring 1998.



1995 Bonneville flows at time of LGR release



1998 Bonneville flows at time of LGR release

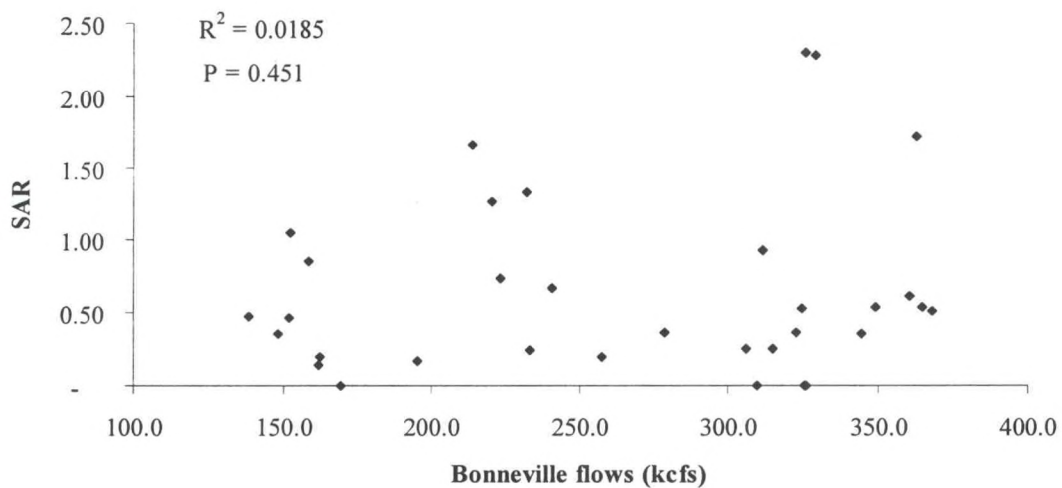


Figure 5. Daily spring/summer chinook salmon transport smolt-to-adult return ratios (SAR) vs. Bonneville Dam flows at time of release in 1995 and 1998.

## **Adult Recoveries of Spring/Summer Chinook Salmon from the 1999 Smolt Migration**

At Lower Granite Dam in 2000, we recovered spring/summer chinook salmon jacks tagged as smolts at the dam in 1999 (Table 5 and Appendix Tables 11 and 12.2). The first jack was observed on 23 April and the last on 9 September.

We recovered 174 jacks during 2000. Of the 174, 8 hatchery jacks were removed from analysis because they had been transported at dams downstream from Lower Granite Dam. Of the remaining 166 jacks, 88 (77 hatchery and 11 wild) and 78 (74 hatchery and 4 wild) were from the transport and inriver releases, respectively. Overall SARs to Lower Granite Dam were 0.17% for the transported group and 0.10% for all inriver fish (including those bypassed once or more downstream from Lower Granite Dam), for an overall T/I of 1.6. A 95% confidence interval will be calculated when adult returns are complete. When we compared the transport SAR to the SAR of inriver fish not detected at a Snake River collector dam after release from Lower Granite Dam (0.12%; 22 adults from 18,502 smolts), the overall T/I dropped to 1.5. A 95% confidence interval will be calculated when adult returns are completed.

Transport SARs were 0.18% for hatchery fish and 0.13% for wild fish, while SARs for all inriver fish were 0.12% for hatchery fish and 0.03% for wild fish. The respective overall T/Is for hatchery and wild fish were 1.5 and 3.7. When we compared transport SARs to inriver SARs of fish not detected at a Snake River collector dam after release from Lower Granite Dam (0.13% for hatchery fish and 0.05% for wild fish), the hatchery and wild T/Is dropped to 1.4 and 2.5, respectively.

During their return, 26 jacks (24 hatchery and 2 wild) were observed on detection coils in the AFF. Of the 24 hatchery jacks (17 transports and 7 inrivers), 16 (10 transports and 6 inrivers) successfully migrated from Bonneville Dam to Lower Granite Dam. Both wild fish (both transports) detected at the AFF successfully migrated from Bonneville Dam to Lower Granite Dam.

The total number of jacks recovered from the 1999 marking (174) was more than 2.5 times greater than the number of jacks recovered from the 1998 marking (67). Based on the strength of this year's jack return, we expect that SARs for the 1999 marking year will be the highest since this study began in 1995.



Table 5. Preliminary summary of recovered adult spring/summer chinook salmon marked at Lower Granite Dam in 1999 for the transportation study (recoveries through 17 August 2000). The inriver group includes only fish not detected during their outmigration at a Snake River collector dam after release into the Lower Granite Dam tailrace. All PIT-tag recoveries above Lower Granite Dam are listed (recoveries reported through 15 October 2000).

Group <sup>a</sup>	Number released	Adult returns at Lower Granite Dam		PIT-tag recoveries			
		Number	%	Hatcheries	Sports fishery	Spawning grounds	Traps
Transport							
Hatchery	42,153	77	0.18	6	0	0	6
Wild	8,622	11	0.13	0	0	0	0
Total	50,775	88	0.17	6	0	0	6
Inriver <sup>b</sup>							
Hatchery	16,512	21	0.13	3	0	0	1
Wild	1,990	1	0.05	0	0	0	0
Total	18,502	22	0.12	3	0	0	1

<sup>a</sup> 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).

<sup>b</sup> Adjusted as described in Sandford and Smith (In press).

## Adult Recoveries of Steelhead from the 1999 Smolt Migration

We also recovered age-1-ocean steelhead adults tagged as smolts in 1999. The first age-1-ocean steelhead adult returned on 14 June and, for the purposes of this report, the last was recovered on 15 October. We will continue collecting age-1-ocean steelhead through spring 2001.

So far, we have recovered 361 age-1-ocean steelhead adults during 2000 (Appendix Tables 13-14.2). Of the 361, 17 (16 hatchery and 1 wild) adults were removed from the analysis because they had been transported at dams downstream from Lower Granite Dam. Of the remaining 344 age-1-ocean steelhead adults, 179 (151 hatchery and 28 wild) and 165 (151 hatchery and 14 wild) were from the transport and inriver releases, respectively. Overall SARs to Lower Granite Dam were 0.38% for the transported group and 0.24% for all inriver fish (including those bypassed once or more at a Snake River collector dam downstream from Lower Granite Dam), for an overall T/I of 1.6. When we compared the transport SAR to the SAR of inriver fish not detected at a Snake River collector dam after release from Lower Granite Dam (0.34%; 40 adults from 11,900 smolts) (Table 6), the overall T/I dropped to 1.1. A 95% confidence interval will be calculated when all adult returns are complete.

Hatchery and wild fish accounted for 84.4% and 15.6% of the returning steelhead adults, respectively. When tagged as smolts, the percentages of hatchery and wild fish tagged were 87.5 and 12.5%, respectively (Harmon et al. 2000), although the wild fraction was bolstered to some extent because some hatchery fish were not adipose-fin clipped. Transport SARs were 0.37% for hatchery fish and 0.46% for wild fish while SARs for all inriver fish were 0.25% for hatchery fish and 0.17% for wild fish. The respective overall T/Is for hatchery and wild fish were 1.5 and 2.7. When we compared transport SARs to inriver SARs of fish not detected at a Snake River collector dam after release from Lower Granite Dam (0.38% for hatchery fish; there were no wild fish recovered in this category), the hatchery T/I dropped to 1.0. Because no inriver wild fish have returned so far, a T/I estimate for wild fish is not yet calculable.

During their return, 115 adults were observed on detection coils in the AFF, 73 were transported (57 hatchery and 16 wild) and 42 were inriver migrants (34 hatchery and 8 wild). Of these, 31 transported fish (25 hatchery and 5 wild) and 23 inriver migrants (21 hatchery and 2 wild) successfully migrated as adults from Bonneville Dam to Lower Granite Dam. Of the 115 adults observed in the AFF, 8 hatchery adults had never been detected at a Snake River collector dam below Lower Granite Dam during smolt migration. Of these eight fish, seven were detected passing over Lower Granite Dam. No wild fish in this group were detected in the AFF.



Table 6. Preliminary summary of recovered adult steelhead marked at Lower Granite Dam in 1999 for the transportation study (recoveries through 15 October 2000). The inriver group includes only fish not detected during their outmigration at a Snake River collector dam after release into the Lower Granite Dam tailrace. All PIT-tag recoveries above Lower Granite Dam are listed (recoveries reported through 15 October 2000).

Group <sup>a</sup>	Number released	Adult returns at Lower Granite Dam	
		Number	%
Transport			
Hatchery	41,109	151	0.37
Wild	6,062	28	0.46
Total	47,171	179	0.38
Inriver <sup>b</sup>			
Hatchery	10,431	40	0.38
Wild	1,469	0	----
Total	11,900	40	0.34

<sup>a</sup> 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).

<sup>b</sup> Numbers adjusted as described in Sandford and Smith (in press)

## **INCIDENCE OF MARINE MAMMAL ABRASIONS AT 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 2000. Prevalence averaged 18.8% on adults examined, with 23.8% of the abrasions consisting of open wounds of varying severity (Table 7). As in the past, abrasion prevalence was generally higher during the early portion of the adult run (Achord et al. 1992; Matthews et al. 1992; Harmon et al. 1993, 1995, 1996; Marsh et al. 1996, 1997, 1998). With the levels of abrasions observed, it is quite likely that marine mammals continue to negatively affect depressed runs of Snake River spring/summer chinook salmon.

Table 7. Weekly prevalence (4 April to 8 August) of marine mammal abrasions on adult spring/summer chinook salmon at Lower Granite Dam in 2000.

Date	Sample size	Incidence (%)
4-9 April	5	40.0
10-16 April	27	33.3
17-23 April	240	25.0
24-30 April	603	25.9
1-7 May	589	18.8
8-14 May	371	17.3
15-21 May	185	20.0
22-28 May	210	18.6
29 May-4 June	131	15.3
5-11 June	183	16.4
12-18 June	140	5.7
19-25 June	107	11.2
26 June-2 July	82	9.8
3-9 July	39	2.6
10-16 July	28	0.0
17-23 July	14	0.0
24-30 July	4	0.0
31 July-6 August	1	0.0
7-8 August	1	0.0
	-----	-----
	Total 2,960	Average 18.8*

\* Open wounds were associated with 23.8% of the abrasions.



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## **APPENDIX**

### **Data Tables**

Appendix Table 1. Total wild spring/summer chinook salmon and wild steelhead tagged at Lower Granite Dam in spring 2000.

Tag date	Tagged		Released		Post-tagging mortality		Lost tags	
	Chinook	Steelhead	Chinook	Steelhead	Chinook	Steelhead	Chinook	Steelhead
30-Mar	0	15	0	15	0	0	0	0
31-Mar	0	86	0	86	0	0	0	0
1-Apr	2	125	2	123	0	0	0	2
3-Apr	1	189	1	185	0	0	0	4
4-Apr	2	327	2	323	0	0	0	4
5-Apr	5	143	5	143	0	0	0	0
6-Apr	17	416	16	414	1	0	0	2
7-Apr	50	716	48	706	2	9	0	1
8-Apr	30	296	29	295	1	1	0	0
9-Apr	28	377	28	376	0	0	0	1
10-Apr	51	1,179	49	1,158	1	9	0	12
11-Apr	127	939	126	929	1	3	0	7
12-Apr	769	1,677	764	1,634	1	16	4	27
13-Apr	696	926	690	909	4	1	2	16
14-Apr	2,304	1,951	2,291	1,896	12	28	1	27
15-Apr	3,971	2,359	3,957	2,345	10	5	4	9
16-Apr	3,270	3,460	3,251	3,437	19	10	0	13
17-Apr	1,792	4,502	1,782	4,485	10	16	0	1
18-Apr	1,132	4,129	1,128	4,114	4	7	0	8
19-Apr	556	2,023	552	2,008	4	2	0	13
20-Apr	1,363	4,388	1,357	4,368	6	2	0	18
21-Apr	2,087	3,641	2,070	3,626	13	1	4	14
22-Apr	2,280	2,644	2,271	2,635	2	2	7	7
24-Apr	1,274	1,185	1,261	1,183	11	2	2	0
25-Apr	877	1,525	873	1,519	4	2	0	4
26-Apr	2,317	1,633	2,304	1,625	12	3	1	5
27-Apr	2,178	3,191	2,158	3,185	18	3	2	3
28-Apr	1,662	2,751	1,646	2,731	13	4	3	16
29-Apr	2,418	2,175	2,403	2,169	12	3	3	3
30-Apr	1,261	1,529	1,246	1,522	13	3	2	4
1-May	2,320	1,593	2,309	1,592	7	0	4	1
2-May	1,111	2,244	1,101	2,243	9	1	1	0
3-May	634	1,996	630	1,993	4	3	0	0
4-May	1,227	2,016	1,213	2,013	14	3	0	0
5-May	739	1,395	736	1,392	3	3	0	0



Appendix Table 1. Continued.

Tag date	Tagged		Released		Post-tagging mortality		Lost tags	
	Chinook	Steelhead	Chinook	Steelhead	Chinook	Steelhead	Chinook	Steelhead
6-May	623	2,151	608	2,140	14	4	1	7
7-May	692	1,559	677	1,558	14	0	1	1
8-May	869	1,335	856	1,335	13	0	0	0
9-May	1,064	631	1,057	631	6	0	1	0
10-May	1,579	812	1,567	810	10	1	2	1
11-May	1,762	634	1,735	631	25	2	2	1
12-May	1,295	547	1,264	547	30	0	1	0
13-May	1,410	491	1,395	491	15	0	0	0
15-May	895	407	874	405	21	2	0	0
16-May	273	344	270	344	3	0	0	0
17-May	289	231	285	230	4	1	0	0
18-May	307	215	302	215	5	0	0	0
19-May	321	290	310	289	11	1	0	0
22-May	401	235	398	235	3	0	0	0
23-May	313	347	311	346	2	1	0	0
24-May	257	193	249	193	8	0	0	0
25-May	405	211	393	209	12	2	0	0
26-May	753	199	728	196	24	3	1	0
30-May	718	105	706	105	12	0	0	0
31-May	1,151	86	1,142	86	9	0	0	0
1-Jun	1,296	27	1,295	27	0	0	1	0
2-Jun	1,462	41	1,446	41	16	0	0	0
5-Jun	185	30	185	30	0	0	0	0
6-Jun	328	37	328	37	0	0	0	0
7-Jun	1,014	60	1,011	55	2	5	1	0
8-Jun	148	44	148	44	0	0	0	0
9-Jun	261	19	261	19	0	0	0	0
12-Jun	122	25	122	25	0	0	0	0
13-Jun	56	4	56	4	0	0	0	0
14-Jun	196	21	196	21	0	0	0	0
15-Jun	179	7	179	7	0	0	0	0
16-Jun	65	13	65	13	0	0	0	0
19-Jun	93	15	93	15	0	0	0	0

Appendix Table 2. Observations (detections) and transportation numbers at Little Goose Dam of spring/summer chinook salmon and steelhead smolts released into the Lower Granite Dam tailrace, 2000.

Tag group	Chinook			Steelhead		
	Total observed	Number transported	Percent transported	Total observed	Number transported	Percent transported
DMM00090.CS1	--	--	--	13	9	69.2
DMM00091.CS1	--	--	--	69	49	71.0
DMM00092.CS1	1	0	0	84	58	69.0
DMM00094.CS1	1	1	100.0	147	98	66.7
DMM00095.CS1	--	--	--	240	154	64.2
DMM00096.CS1	3	3	100.0	100	71	71.0
DMM00097.CS1	10	7	70.0	242	158	65.3
DMM00098.CS1	34	30	88.2	222	155	69.8
DMM00099.CH1	21	17	81.0	--	--	--
DMM00099.SH1	--	--	--	107	79	73.8
DMM00100.CH1	17	14	82.4	--	--	--
DMM00100.SH1	--	--	--	197	140	71.1
DMM00101.CH1	24	17	70.8	37	32	86.5
DMM00101.SH1	--	--	--	581	447	76.9
DMM00101.SH2	--	--	--	68	47	69.1
DMM00102.CH1	84	64	76.2	--	--	--
DMM00102.SH1	--	--	--	416	307	73.8
DMM00102.SH2	--	--	--	156	123	78.8
DMM00103.CH1	355	269	75.8	--	--	--
DMM00103.CH2	74	54	73.0	--	--	--
DMM00103.SH1	--	--	--	608	464	76.3
DMM00103.SH2	--	--	--	280	213	76.1
DMM00104.CH1	249	188	75.5	--	--	--
DMM00104.CH2	109	80	73.4	--	--	--
DMM00104.SH1	--	--	--	293	114	38.9
DMM00104.SH2	--	--	--	158	90	57.0

Appendix Table 2. Continued.

Tag group	Chinook			Steelhead		
	Total observed	Number transported	Percent transported	Total observed	Number transported	Percent transported
DMM00105.CH1	851	629	73.9	--	--	--
DMM00105.CH2	444	331	74.5	--	--	--
DMM00105.SH1	--	--	--	625	471	75.4
DMM00105.SH2	--	--	--	352	266	75.6
DMM00106.CH1	970	708	73.0	1	0	0
DMM00106.CH2	951	685	72.0	--	--	--
DMM00106.SH1	42	28	66.7	853	626	73.4
DMM00106.SH2	9	7	77.8	790	607	76.8
DMM00107.CH1	726	491	67.6	--	--	--
DMM00107.CH2	453	306	67.5	3	3	100.0
DMM00107.SH1	--	--	--	1,158	822	71.0
DMM00107.SH2	--	--	--	965	729	75.5
DMM00108.CH1	485	327	67.4	4	2	50.0
DMM00108.CH2	151	91	60.3	4	3	75.0
DMM00108.SH1	--	--	--	1,285	951	74.0
DMM00108.SH2	--	--	--	759	577	76.0
DMM00109.CH1	367	268	73.0	23	15	65.2
DMM00109.CH2	63	48	76.2	12	8	66.7
DMM00109.SH1	--	--	--	1,014	760	75.0
DMM00109.SH2	--	--	--	607	435	71.7
DMM00110.CH1	257	174	67.7	--	--	--
DMM00110.SH1	--	--	--	536	381	71.1
DMM00110.SH2	--	--	--	170	121	71.2
DMM00111.CH1	712	485	68.1	12	7	58.3
DMM00111.CH2	19	12	63.2	--	--	--
DMM00111.SH1	--	--	--	1,135	841	74.1
DMM00111.SH2	--	--	--	224	155	69.2
DMM00111.SH3	--	--	--	37	27	73.0



Appendix Table 2. Continued.

Tag group	Chinook			Steelhead		
	Total observed	Number transported	Percent transported	Total observed	Number transported	Percent transported
DMM00112.CH1	942	657	69.7	5	4	80.0
DMM00112.CH2	194	151	77.8	--	--	--
DMM00112.SH1	--	--	--	1,630	1,178	72.3
DMM00112.SH2	--	--	--	137	89	65.0
DMM00113.CH1	1,050	771	73.4	--	--	--
DMM00113.CH2	278	204	73.4	--	--	--
DMM00113.SH1	--	--	--	543	400	73.7
DMM00113.SH2	--	--	--	470	343	73.0
DMM00115.CH1	396	301	76.0	--	--	--
DMM00115.CH2	246	186	75.6	--	--	--
DMM00115.SH1	--	--	--	605	450	74.4
DMM00116.CH1	403	300	74.4	--	--	--
DMM00116.SH1	--	--	--	883	669	75.8
DMM00117.CH1	766	541	70.6	--	--	--
DMM00117.CH2	266	184	69.2	--	--	--
DMM00117.SH1	--	--	--	914	675	73.9
DMM00118.CH1	658	449	68.2	20	16	80.0
DMM00118.CH2	267	186	69.7	23	19	82.6
DMM00118.SH1	--	--	--	1,571	1,142	72.7
DMM00119.CH1	581	424	73.0	1	1	100.0
DMM00119.CH2	113	79	69.9	--	--	--
DMM00119.SH1	--	--	--	1,529	1,123	73.4
DMM00120.CH1	589	415	70.5	--	--	--
DMM00120.CH2	306	220	71.9	--	--	--
DMM00120.SH1	--	--	--	1,159	860	74.2
DMM00121.CH1	420	286	68.1	--	--	--
DMM00121.CH2	12	10	83.3	--	--	--
DMM00121.SH1	--	--	--	811	583	71.9

Appendix Table 2. Continued.

Tag group	Chinook			Steelhead		
	Total observed	Number transported	Percent transported	Total observed	Number transported	Percent transported
DMM00122.CH1	424	316	74.5	--	--	--
DMM00122.CH2	132	102	77.3	--	--	--
DMM00122.SH1	--	--	--	610	450	73.8
DMM00123.CH1	244	178	73.0	--	--	--
DMM00123.SH1	--	--	--	827	609	73.6
DMM00124.CH1	128	94	73.4	--	--	--
DMM00124.SH1	--	--	--	702	530	75.5
DMM00125.CH1	258	201	77.9	--	--	--
DMM00125.SH1	--	--	--	540	397	73.5
DMM00126.CH1	217	160	73.7	--	--	--
DMM00126.SH1	--	--	--	324	257	79.3
DMM00127.CH1	193	141	73.1	--	--	--
DMM00127.SH1	--	--	--	443	338	76.3
DMM00128.CH1	215	156	72.6	--	--	--
DMM00128.SH1	--	--	--	405	308	76.0
DMM00129.CH1	254	182	71.7	--	--	--
DMM00129.SH1	--	--	--	190	139	73.2
DMM00130.CH1	215	159	74.0	--	--	--
DMM00130.SH1	--	--	--	64	50	78.1
DMM00131.CH1	274	187	68.2	--	--	--
DMM00131.SH1	--	--	--	66	50	75.8
DMM00132.CH1	313	243	77.6	--	--	--
DMM00132.SH1	--	--	--	42	30	71.4
DMM00133.CH1	189	146	77.2	--	--	--
DMM00133.SH1	--	--	--	39	29	74.4
DMM00134.CH1	188	148	78.7	--	--	--
DMM00134.CH2	17	15	88.2	--	--	--
DMM00134.SH1	--	--	--	55	42	76.4

Appendix Table 2. Continued.

Tag group	Chinook			Steelhead		
	Total observed	Number transported	Percent transported	Total observed	Number transported	Percent transported
DMM00136.CH1	139	102	73.4	--	--	--
DMM00136.SH1	--	--	--	50	40	80.0
DMM00137.CH1	46	31	67.4	--	--	--
DMM00137.SH1	--	--	--	49	40	81.6
DMM00138.CH1	70	56	80.0	--	--	--
DMM00138.SH1	--	--	--	33	26	78.8
DMM00139.CH1	85	65	76.5	--	--	--
DMM00139.SH1	--	--	--	33	24	72.7
DMM00140.CH1	96	66	68.8	--	--	--
DMM00140.SH1	--	--	--	49	37	75.5
DMM00143.CH1	97	75	77.3	--	--	--
DMM00143.SH1	--	--	--	36	30	83.3
DMM00144.CH1	50	34	68.0	--	--	--
DMM00144.SH1	--	--	--	69	59	85.5
DMM00145.CH1	74	55	74.3	--	--	--
DMM00145.SH1	--	--	--	42	32	76.2
DMM00146.CH1	102	76	74.5	--	--	--
DMM00146.SH1	--	--	--	46	35	76.1
DMM00147.CH1	246	183	74.4	--	--	--
DMM00147.SH1	--	--	--	43	33	76.7
DMM00151.CH1	128	97	75.8	--	--	--
DMM00151.SH1	--	--	--	7	4	57.1
DMM00152.CH1	263	193	73.4	--	--	--
DMM00152.SH1	30	18	60.0	8	6	75.0
DMM00153.CH1	407	282	69.3	--	--	--
DMM00153.SH1	70	49	70.0	3	3	100.0
DMM00154.CH1	352	279	79.3	--	--	--
DMM00154.SH1	174	129	74.1	10	7	70.0



Appendix Table 2. Continued.

Tag group	Chinook			Steelhead		
	Total observed	Number transported	Percent transported	Total observed	Number transported	Percent transported
DMM00157.CH1	75	60	80.0	--	--	--
DMM00157.SH1	--	--	--	6	5	83.3
DMM00158.CH1	110	85	77.3	--	--	--
DMM00158.SH1	--	--	--	7	4	57.1
DMM00159.CH1	247	189	76.5	--	--	--
DMM00159.SH1	14	11	78.6	2	2	100.0
DMM00160.CH1	20	16	80.0	--	--	--
DMM00160.SH1	--	--	--	1	1	100.0
DMM00161.CH1	45	35	77.8	--	--	--
DMM00161.SH1	--	--	--	1	1	100.0
DMM00164.CS1	41	27	65.9	1	1	100.0
DMM00165.CH1	20	11	55.0	--	--	--
DMM00166.CH1	82	57	69.5	--	--	--
DMM00166.SH1	--	--	--	2	1	50.0
DMM00167.CS1	70	53	75.7	--	--	--
DMM00168.CS1	16	12	75.0	--	--	--
DMM00171.CS1	50	37	74.0	1	1	100.0
	21,449	15,509	72.3	29,694	21,788	73.4

Appendix Table 3. Locations of observations (detections) of PIT-tagged spring/summer chinook salmon within the Little Goose Dam juvenile fish facility, 2000.

GOJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
07-Apr-00	-	-	-	-	-	-	1
10-Apr-00	-	-	-	-	-	1	-
11-Apr-00	-	-	-	-	-	1	-
13-Apr-00	-	-	-	-	2	2	-
14-Apr-00	-	-	-	-	2	18	-
15-Apr-00	-	-	-	-	22	93	1
16-Apr-00	-	-	-	-	46	176	6
17-Apr-00	-	-	-	-	91	291	5
18-Apr-00	-	-	-	1	138	426	5
19-Apr-00	1	2	-	2	149	519	3
20-Apr-00	-	-	-	1	187	644	12
21-Apr-00	12	-	-	1	446	803	7
22-Apr-00	2	1	-	4	221	571	8
23-Apr-00	10	-	-	2	280	642	10
24-Apr-00	11	2	-	-	352	787	15
25-Apr-00	5	1	-	4	275	794	13
26-Apr-00	-	1	-	1	154	552	8
27-Apr-00	-	-	-	-	82	264	4
28-Apr-00	2	1	-	1	153	348	-
29-Apr-00	-	1	-	-	121	410	6
30-Apr-00	6	-	-	1	168	395	6
01-May-00	2	1	-	-	334	734	4
02-May-00	-	-	-	-	171	540	3
03-May-00	1	3	-	3	386	945	11
04-May-00	3	1	-	1	164	440	5
05-May-00	-	1	-	1	148	392	5
06-May-00	1	1	-	1	94	233	2
07-May-00	-	-	-	1	45	161	-

Appendix Table 3. Continued.

GOJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
08-May-00	-	-	-	-	35	131	1
09-May-00	-	-	-	-	57	200	-
10-May-00	-	-	-	-	53	192	2
11-May-00	2	-	-	-	78	191	3
12-May-00	-	-	-	1	75	150	2
13-May-00	-	1	-	1	54	150	1
14-May-00	2	-	-	-	47	144	-
15-May-00	1	-	-	-	50	163	1
16-May-00	-	-	-	2	40	148	3
17-May-00	-	1	-	-	36	103	3
18-May-00	-	-	-	1	19	83	-
19-May-00	-	-	-	-	28	102	4
20-May-00	-	-	-	-	19	67	3
21-May-00	-	-	-	1	28	100	7
22-May-00	-	-	1	-	24	116	4
23-May-00	-	-	-	1	27	83	6
24-May-00	-	-	-	-	24	74	3
25-May-00	-	-	-	-	15	44	-
26-May-00	-	-	-	-	20	69	3
27-May-00	-	-	-	-	20	54	2
28-May-00	-	-	-	-	21	69	4
29-May-00	-	-	-	1	24	82	1
30-May-00	-	-	-	-	32	114	4
31-May-00	-	-	-	-	13	40	1
01-Jun-00	-	-	-	-	2	5	1
02-Jun-00	-	-	-	-	1	7	1
03-Jun-00	-	-	-	-	8	31	5
04-Jun-00	-	-	-	-	11	48	4
05-Jun-00	-	-	-	-	13	45	3



Appendix Table 3. Continued.

GOJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
06-Jun-00	-	-	-	1	18	68	11
07-Jun-00	-	1	-	-	21	82	10
08-Jun-00	-	-	-	-	51	135	9
09-Jun-00	-	-	-	2	95	330	15
10-Jun-00	-	-	-	1	98	351	13
11-Jun-00	-	-	-	1	24	101	1
12-Jun-00	-	-	-	-	6	22	-
13-Jun-00	-	-	-	-	13	53	3
14-Jun-00	-	-	-	-	2	9	-
15-Jun-00	-	-	-	-	1	4	1
16-Jun-00	-	-	-	-	5	13	4
17-Jun-00	-	-	-	-	2	9	1
18-Jun-00	-	-	-	1	1	4	4
19-Jun-00	-	-	-	-	6	18	4
20-Jun-00	-	-	-	-	16	60	5
21-Jun-00	-	-	-	-	3	18	2
22-Jun-00	-	-	-	-	8	28	3
23-Jun-00	-	-	-	-	5	16	1
24-Jun-00	-	-	-	-	3	14	1
25-Jun-00	-	-	-	-	1	6	2
26-Jun-00	-	-	-	-	2	8	-
27-Jun-00	-	-	-	-	2	8	-
28-Jun-00	-	-	-	-	3	11	-
29-Jun-00	-	-	-	-	2	6	-
30-Jun-00	-	-	-	-	3	11	-
01-Jul-00	-	-	-	-	4	24	-
02-Jul-00	-	-	-	-	4	21	1
03-Jul-00	-	-	-	-	3	8	-
04-Jul-00	-	-	-	-	3	14	-

Appendix Table 3. Continued.

GOJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
05-Jul-00	-	-	-	-	1	6	-
06-Jul-00	-	-	-	-	1	2	-
07-Jul-00	-	-	-	-	1	4	-
08-Jul-00	-	-	-	-	3	10	-
09-Jul-00	-	-	-	-	1	4	-
10-Jul-00	-	-	-	-	1	5	-
11-Jul-00	-	-	-	-	2	3	-
12-Jul-00	-	-	-	-	1	8	3
13-Jul-00	-	-	-	-	2	2	-
14-Jul-00	-	-	-	-	1	5	-
15-Jul-00	-	-	-	-	-	2	1
16-Jul-00	-	-	-	-	-	3	1
17-Jul-00	-	-	-	-	1	-	-
18-Jul-00	-	-	-	-	1	1	1
19-Jul-00	-	-	-	-	-	2	1
20-Jul-00	-	-	-	-	-	2	-
21-Jul-00	-	-	-	-	1	1	-
22-Jul-00	-	-	-	-	-	2	1
24-Jul-00	-	-	-	-	1	-	-
25-Jul-00	-	-	-	-	-	1	-
03-Aug-00	-	-	-	-	1	-	-
06-Aug-00	-	-	-	-	-	-	1

Appendix Table 4. Locations of observations (detections) of PIT-tagged spring/summer chinook salmon within the Lower Monumental Dam juvenile fish facility, 2000.

LMJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
13-Apr-00	-	-	-	-	1	-	-
14-Apr-00	-	-	-	-	2	-	-
15-Apr-00	-	-	-	-	3	-	-
16-Apr-00	-	-	-	-	8	-	-
17-Apr-00	-	-	-	-	21	-	-
18-Apr-00	-	-	-	-	41	-	1
19-Apr-00	-	-	-	-	142	5	6
20-Apr-00	-	-	-	-	167	3	6
21-Apr-00	-	-	-	-	188	-	4
22-Apr-00	-	-	-	1	290	99	10
23-Apr-00	-	-	-	-	832	167	17
24-Apr-00	-	1	-	-	832	193	9
25-Apr-00	-	1	-	-	483	7	3
26-Apr-00	-	-	-	-	322	5	1
27-Apr-00	1	-	-	-	195	1	2
28-Apr-00	-	-	-	-	164	4	1
29-Apr-00	-	-	-	-	193	1	-
30-Apr-00	-	-	-	-	128	1	1
01-May-00	-	-	-	-	205	1	1
02-May-00	-	-	-	-	247	7	1
03-May-00	-	-	-	1	351	7	50
04-May-00	-	-	-	7	313	6	51
05-May-00	-	-	-	4	322	3	23
06-May-00	4	-	-	-	283	2	-
07-May-00	5	-	-	1	66	-	8
08-May-00	-	-	-	-	42	8	3
09-May-00	-	-	-	-	62	4	10
10-May-00	-	-	-	1	105	11	17



Appendix Table 4. Continued.

LMJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
11-May-00	-	-	-	-	148	6	20
12-May-00	-	-	-	-	135	1	-
13-May-00	-	-	-	-	59	1	-
14-May-00	-	-	-	-	74	-	5
15-May-00	-	-	-	-	34	2	3
16-May-00	-	-	-	-	18	-	2
17-May-00	-	-	-	-	24	-	-
18-May-00	-	-	-	-	29	-	-
19-May-00	1	-	-	-	21	-	-
20-May-00	-	-	-	1	72	3	2
21-May-00	-	-	-	-	108	1	1
22-May-00	-	-	-	-	90	-	3
23-May-00	-	-	1	1	107	3	13
24-May-00	-	-	-	-	54	-	-
25-May-00	-	-	-	-	62	1	3
26-May-00	-	-	-	-	80	2	1
27-May-00	-	-	-	1	78	4	1
28-May-00	-	-	-	-	66	-	3
29-May-00	-	-	-	-	29	-	-
30-May-00	-	-	-	-	21	-	-
31-May-00	-	-	-	-	58	1	-
01-Jun-00	-	-	-	-	15	-	1
02-Jun-00	-	-	-	-	3	-	-
03-Jun-00	-	-	-	-	4	-	-
04-Jun-00	-	-	-	-	8	1	1
05-Jun-00	-	-	-	-	20	-	3
06-Jun-00	-	-	-	-	55	1	3
07-Jun-00	-	-	-	-	53	3	6
08-Jun-00	-	-	-	-	53	2	1

Appendix Table 4. Continued.

LMJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
09-Jun-00	-	-	-	-	52	2	3
10-Jun-00	-	-	-	-	51	-	4
11-Jun-00	-	-	-	-	31	-	1
12-Jun-00	-	-	-	-	9	-	1
13-Jun-00	-	-	-	-	13	-	-
14-Jun-00	-	-	-	-	15	-	-
15-Jun-00	-	-	-	-	16	-	-
16-Jun-00	-	-	-	-	4	-	-
20-Jun-00	-	-	-	-	7	-	-
21-Jun-00	-	-	-	-	43	-	1
22-Jun-00	-	-	-	-	39	-	1
23-Jun-00	-	-	-	-	17	-	-
24-Jun-00	-	-	-	-	8	-	-
25-Jun-00	-	-	-	-	17	-	-
26-Jun-00	-	-	-	-	2	-	-
27-Jun-00	-	-	-	-	10	-	-
28-Jun-00	-	-	-	-	3	-	-
29-Jun-00	-	-	-	-	7	-	-
30-Jun-00	-	-	-	-	11	-	1
01-Jul-00	-	-	-	-	7	-	1
02-Jul-00	-	-	-	-	12	1	1
03-Jul-00	-	-	-	-	5	-	-
04-Jul-00	-	-	-	-	3	-	1
05-Jul-00	-	-	-	-	4	-	-
06-Jul-00	-	-	-	-	2	-	-
07-Jul-00	-	-	-	-	3	-	-
08-Jul-00	-	-	-	-	3	-	1
09-Jul-00	-	-	-	-	1	-	-
11-Jul-00	-	-	-	-	1	-	-

Appendix Table 4. Continued.

LMJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
12-Jul-00	-	-	-	-	1	-	-
13-Jul-00	-	-	-	-	1	-	2
14-Jul-00	-	-	-	-	4	-	1
15-Jul-00	-	-	-	-	2	-	-
17-Jul-00	-	-	-	-	1	-	-
18-Jul-00	-	-	-	-	1	-	1
20-Jul-00	-	-	-	-	1	-	-
21-Jul-00	-	-	-	-	1	-	-
23-Jul-00	-	-	-	-	3	-	-
25-Jul-00	-	-	-	-	1	-	-
27-Jul-00	-	-	-	-	1	-	-
02-Aug-00	-	-	-	-	1	-	-
03-Aug-00	-	-	-	-	1	-	-
14-Aug-00	-	-	-	-	1	-	-
16-Aug-00	-	-	-	-	1	-	-
18-Aug-00	-	-	-	-	1	-	-
04-Sep-00	-	-	-	-	-	-	1



Appendix Table 5. Locations of observations (detections) of PIT-tagged spring/summer chinook salmon within the McNary Dam juvenile fish facility, 2000.

MCJ date	Div	Sep	Sep Div	Sep Div Lost	Sep Lost	Sep Samp	Sep Samp Div
17-Apr-00	-	-	1	-	-	-	-
18-Apr-00	-	-	3	-	-	-	-
19-Apr-00	-	-	3	-	-	-	-
20-Apr-00	-	-	4	-	-	-	-
21-Apr-00	-	-	8	-	-	-	2
22-Apr-00	-	-	37	-	-	-	-
23-Apr-00	-	-	77	-	-	-	8
24-Apr-00	-	-	93	-	-	-	3
25-Apr-00	2	-	141	-	-	-	3
26-Apr-00	-	9	193	-	7	-	8
27-Apr-00	-	9	219	-	47	-	8
28-Apr-00	-	-	334	-	-	-	10
29-Apr-00	-	-	309	-	-	-	9
30-Apr-00	-	1	296	-	-	-	10
01-May-00	-	-	266	-	-	1	11
02-May-00	1	3	206	-	-	-	8
03-May-00	-	-	191	-	-	-	5
04-May-00	-	2	197	-	-	-	6
05-May-00	-	1	243	1	1	-	4
06-May-00	-	-	329	-	-	-	6
07-May-00	-	-	303	-	-	-	4
08-May-00	-	-	390	-	-	-	5
09-May-00	-	2	400	-	-	-	8
10-May-00	-	-	407	-	-	-	5
11-May-00	-	-	261	-	-	-	3
12-May-00	-	-	226	-	-	-	2
13-May-00	-	1	127	-	-	-	1

Appendix Table 5. Continued.

MCJ date	Div	Sep	Sep Div	Sep Div Lost	Sep Lost	Sep Samp	Sep Samp Div
14-May-00	-	-	108	-	-	-	-
15-May-00	-	-	164	-	-	-	6
16-May-00	-	-	80	-	2	-	3
17-May-00	-	-	131	-	-	-	1
18-May-00	-	-	127	-	-	-	2
19-May-00	-	-	169	-	-	-	4
20-May-00	-	-	136	-	-	-	-
21-May-00	-	-	129	-	-	-	3
22-May-00	-	-	137	-	-	-	4
23-May-00	-	-	123	-	-	-	2
24-May-00	-	-	96	-	-	-	4
25-May-00	-	-	105	-	-	-	1
26-May-00	-	-	87	-	-	-	-
27-May-00	-	-	82	-	-	-	1
28-May-00	2	-	67	-	-	-	1
29-May-00	-	-	91	-	-	-	2
30-May-00	-	-	79	-	-	-	1
31-May-00	-	-	85	-	-	1	1
01-Jun-00	-	-	77	-	-	-	-
02-Jun-00	-	1	45	-	5	1	-
03-Jun-00	-	12	19	-	4	-	-
04-Jun-00	-	8	24	-	-	1	-
05-Jun-00	-	4	16	-	-	-	-
06-Jun-00	-	9	2	-	7	1	-
07-Jun-00	-	6	23	-	4	-	-
08-Jun-00	-	-	31	-	-	-	1
09-Jun-00	-	-	48	-	-	-	-
10-Jun-00	-	-	48	-	-	-	-

Appendix Table 5. Continued.

MCJ date	Div	Sep	Sep Div	Sep Div Lost	Sep Lost	Sep Samp	Sep Samp Div
11-Jun-00	-	-	42	-	-	-	-
12-Jun-00	-	-	51	-	-	-	3
13-Jun-00	-	-	12	-	-	-	1
14-Jun-00	-	-	64	-	-	-	1
15-Jun-00	-	-	83	-	-	-	3
16-Jun-00	-	-	166	-	-	-	1
17-Jun-00	-	-	81	-	-	-	2
18-Jun-00	-	-	53	-	-	-	-
19-Jun-00	-	-	44	-	-	1	9
20-Jun-00	-	-	46	-	-	3	-
21-Jun-00	-	-	32	-	-	1	-
22-Jun-00	-	-	43	-	-	-	-
23-Jun-00	-	-	20	-	-	-	-
24-Jun-00	-	-	13	-	-	-	-
25-Jun-00	-	-	28	-	-	-	-
26-Jun-00	-	-	27	-	-	-	-
27-Jun-00	-	-	18	-	-	-	-
28-Jun-00	-	-	10	-	-	-	-
29-Jun-00	-	-	9	-	-	-	-
30-Jun-00	-	-	5	-	-	-	-
01-Jul-00	-	-	16	-	-	-	-
02-Jul-00	-	-	7	-	-	-	-
03-Jul-00	-	-	12	-	-	-	-
04-Jul-00	-	-	16	-	-	-	-
05-Jul-00	-	-	23	-	-	-	-
06-Jul-00	-	-	14	-	-	-	-
07-Jul-00	-	-	5	-	-	-	-
08-Jul-00	-	-	6	-	-	-	-



Appendix Table 5. Continued.

MCJ date	Div	Sep	Sep Div	Sep Div Lost	Sep Lost	Sep Samp	Sep Samp Div
09-Jul-00	-	-	5	-	-	-	-
10-Jul-00	-	-	5	-	-	-	-
11-Jul-00	-	-	6	-	-	-	-
12-Jul-00	-	-	5	-	-	-	-
13-Jul-00	-	-	1	-	-	-	-
14-Jul-00	-	-	1	-	-	1	-
15-Jul-00	-	-	1	-	-	-	-
16-Jul-00	-	-	4	-	-	-	-
18-Jul-00	-	-	4	-	-	1	-
19-Jul-00	-	-	4	-	-	-	-
20-Jul-00	-	-	2	-	-	-	-
21-Jul-00	-	-	2	-	-	-	-
22-Jul-00	-	-	1	-	-	-	-
23-Jul-00	-	-	1	-	-	-	-
25-Jul-00	-	-	2	-	1	-	-
26-Jul-00	-	-	3	-	-	-	-
27-Jul-00	-	-	2	-	-	-	-
28-Jul-00	-	-	2	-	-	-	-
30-Jul-00	-	-	1	-	-	-	-
21-Aug-00	-	-	1	-	-	-	-
03-Sep-00	-	-	1	-	-	-	-

Appendix Table 6. Locations of observations (detections) of PIT-tagged steelhead within the Little Goose Dam juvenile fish facility, 2000.

GOJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
02-Apr-00	-	-	-	-	-	4	1
03-Apr-00	-	-	-	-	-	6	1
04-Apr-00	-	-	-	-	-	12	3
05-Apr-00	-	1	-	-	7	18	5
06-Apr-00	-	-	-	-	11	38	7
07-Apr-00	-	-	-	-	16	74	14
08-Apr-00	-	-	-	4	25	106	32
09-Apr-00	-	-	-	3	21	87	35
10-Apr-00	-	1	1	5	28	109	23
11-Apr-00	-	-	-	-	34	111	18
12-Apr-00	-	-	-	-	20	84	9
13-Apr-00	-	-	-	2	63	237	21
14-Apr-00	-	1	-	1	117	459	27
15-Apr-00	-	2	-	2	160	559	20
16-Apr-00	-	2	-	-	213	435	15
17-Apr-00	-	2	-	-	208	607	17
18-Apr-00	2	3	-	4	361	1,125	19
19-Apr-00	6	3	-	20	438	1,241	16
20-Apr-00	-	2	-	5	424	1,491	12
21-Apr-00	8	4	1	8	593	1,518	16
22-Apr-00	1	2	-	7	357	1,051	14
23-Apr-00	4	7	-	5	437	1,232	13
24-Apr-00	4	-	-	4	385	927	10
25-Apr-00	2	4	-	1	212	593	9
26-Apr-00	-	-	-	-	70	225	-
27-Apr-00	-	-	-	-	82	283	3
28-Apr-00	2	3	-	1	214	546	5
29-Apr-00	2	2	-	1	200	716	8

Appendix Table 6. Continued.

GOJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
30-Apr-00	2	1	-	2	262	730	6
01-May-00	1	5	-	4	406	1,122	16
02-May-00	-	1	-	-	216	734	8
03-May-00	4	2	-	3	409	1,012	11
04-May-00	2	-	-	-	179	526	6
05-May-00	1	1	-	-	196	647	4
06-May-00	2	-	-	-	211	592	5
07-May-00	-	1	-	4	151	515	5
08-May-00	-	-	-	2	84	268	3
09-May-00	1	1	-	1	49	213	4
10-May-00	1	-	-	-	97	297	3
11-May-00	-	-	-	1	120	362	3
12-May-00	-	-	-	-	42	149	4
13-May-00	-	-	-	-	27	107	1
14-May-00	-	-	-	-	10	28	1
15-May-00	-	-	-	-	6	25	2
16-May-00	-	-	-	-	5	12	-
17-May-00	-	-	-	-	3	13	1
18-May-00	-	-	-	1	3	16	2
19-May-00	-	1	-	-	5	15	1
20-May-00	-	-	-	-	2	12	-
21-May-00	-	-	-	1	4	20	1
22-May-00	-	-	-	-	10	31	1
23-May-00	-	-	-	-	13	61	3
24-May-00	-	-	-	-	15	40	1
25-May-00	-	-	-	-	4	22	-
26-May-00	-	-	-	-	5	28	1
27-May-00	-	-	-	-	14	62	3
28-May-00	-	-	-	-	11	42	-
29-May-00	-	-	-	-	8	42	2

Appendix Table 6. Continued.

GOJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
30-May-00	-	-	-	-	9	26	-
31-May-00	-	-	-	-	3	14	-
01-Jun-00	-	-	-	-	2	10	1
02-Jun-00	-	-	-	-	1	5	-
03-Jun-00	-	-	-	-	1	2	1
04-Jun-00	-	-	-	-	2	6	-
05-Jun-00	-	-	-	-	-	5	1
06-Jun-00	-	-	-	-	1	2	-
07-Jun-00	-	-	-	-	2	6	-
08-Jun-00	-	-	-	-	1	5	-
09-Jun-00	-	-	-	-	1	3	1
10-Jun-00	-	-	-	-	-	4	-
11-Jun-00	-	-	-	-	2	1	1
24-Jun-00	-	-	-	-	-	1	-
26-Jun-00	-	-	-	-	-	2	-
01-Jul-00	-	-	-	-	1	-	-
09-Jul-00	-	-	-	-	-	1	-
13-Jul-00	-	-	-	-	-	1	-
19-Jul-00	-	-	-	-	-	1	-
22-Jul-00	-	-	-	-	-	1	-
23-Jul-00	-	-	-	-	1	-	1
24-Jul-00	-	-	-	-	-	2	-
26-Jul-00	-	-	-	-	-	1	-



Appendix Table 7. Locations of observations (detections) of PIT-tagged steelhead within the Lower Monumental Dam juvenile fish facility, 2000.

LMJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
06-Apr-00	-	-	-	-	-	1	-
07-Apr-00	-	-	-	-	-	1	-
08-Apr-00	-	-	-	-	5	4	-
09-Apr-00	-	-	-	-	2	3	1
10-Apr-00	-	-	-	-	2	-	1
12-Apr-00	-	-	-	-	24	3	2
13-Apr-00	-	-	-	-	79	7	13
14-Apr-00	-	-	-	-	100	13	12
15-Apr-00	-	-	-	-	112	5	6
16-Apr-00	-	-	-	-	222	14	4
17-Apr-00	-	-	-	-	128	2	5
18-Apr-00	-	-	-	-	215	11	6
19-Apr-00	-	-	-	-	422	14	13
20-Apr-00	-	-	-	-	370	15	5
21-Apr-00	-	-	-	2	462	20	16
22-Apr-00	-	-	-	2	561	222	21
23-Apr-00	-	2	-	2	661	264	14
24-Apr-00	-	1	-	2	1,110	442	17
25-Apr-00	-	-	-	-	1,214	61	9
26-Apr-00	-	-	-	-	732	25	2
27-Apr-00	-	-	-	-	586	23	3
28-Apr-00	-	-	-	-	221	8	1
29-Apr-00	-	-	-	-	231	4	1
30-Apr-00	-	-	-	-	292	3	-
01-May-00	-	-	-	-	525	23	2
02-May-00	-	-	-	-	424	15	1
03-May-00	1	-	-	5	435	12	34
04-May-00	-	-	-	3	384	9	56
05-May-00	-	-	-	2	357	15	28

Appendix Table 7. Continued.

LMJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
07-May-00	9	-	-	-	208	8	19
08-May-00	-	-	-	3	157	66	49
09-May-00	-	-	-	1	199	6	29
10-May-00	-	-	-	1	94	20	20
11-May-00	-	-	-	2	242	15	31
12-May-00	-	-	-	-	358	14	1
13-May-00	-	-	-	-	267	5	3
14-May-00	-	-	-	-	170	12	-
15-May-00	-	-	-	-	50	3	5
16-May-00	-	-	-	-	53	2	5
17-May-00	-	-	-	-	16	-	1
18-May-00	-	-	-	-	21	-	1
19-May-00	1	-	-	-	12	1	-
20-May-00	-	-	-	-	24	2	1
21-May-00	1	-	-	-	42	-	1
22-May-00	-	-	-	-	25	-	-
23-May-00	-	-	-	-	88	3	13
24-May-00	-	-	-	-	77	5	1
25-May-00	-	-	-	-	72	6	2
26-May-00	-	-	-	-	40	1	-
27-May-00	-	-	-	-	17	3	2
28-May-00	-	-	-	-	19	2	1
29-May-00	-	-	-	-	39	-	3
30-May-00	-	-	-	-	16	-	-
31-May-00	-	-	-	-	16	-	1
01-Jun-00	-	-	-	-	11	-	1
02-Jun-00	-	-	-	-	8	1	-
03-Jun-00	-	-	-	-	2	-	1
04-Jun-00	-	-	-	-	2	-	1

Appendix Table 7. Continued.

LMJ date	Div	Lost	Sampled	Sep	Sep Div	Sep Lost	Sep Samp
06-Jun-00	-	-	-	-	4	-	-
07-Jun-00	-	-	-	-	9	-	-
08-Jun-00	-	-	-	-	6	-	1
09-Jun-00	-	-	-	-	4	-	-
11-Jun-00	-	-	-	-	1	-	-
12-Jun-00	-	-	-	-	1	-	-
15-Jun-00	-	-	-	-	1	-	-
17-Jun-00	-	-	-	-	1	-	-
21-Jun-00	-	-	-	-	1	-	-
29-Jun-00	-	-	-	-	1	-	-
01-Jul-00	-	-	-	-	1	-	-
02-Jul-00	-	-	-	-	2	-	-
14-Jul-00	-	-	-	-	2	-	-
19-Jul-00	-	-	-	-	1	-	-
22-Jul-00	-	-	-	-	1	-	1
05-Sep-00	-	-	-	-	1	-	-

Appendix Table 8. Locations of observations (detections) of PIT-tagged steelhead within the McNary Dam juvenile fish facility, 2000.

MCJ date	Div	Lost	Sep	Sep Div	Sep Lost	Sep Samp	Sep Samp Div
10-Apr-00	-	-	-	1	-	-	-
11-Apr-00	-	-	-	7	-	-	-
12-Apr-00	-	-	-	3	-	-	1
13-Apr-00	-	-	-	7	-	-	-
14-Apr-00	-	-	-	10	-	-	1
15-Apr-00	-	-	-	26	-	-	3
16-Apr-00	-	-	-	34	-	-	-
17-Apr-00	-	-	-	33	-	-	1
18-Apr-00	1	-	-	32	-	-	11
19-Apr-00	-	-	-	62	-	-	7
20-Apr-00	2	-	-	68	-	-	9
21-Apr-00	-	-	-	62	-	-	1
22-Apr-00	-	-	-	65	-	-	2
23-Apr-00	-	-	-	123	-	-	8
24-Apr-00	1	-	-	237	-	-	9
25-Apr-00	-	-	-	217	-	-	13
26-Apr-00	-	1	27	272	29	-	11
27-Apr-00	-	-	18	215	137	-	11
28-Apr-00	-	-	-	249	-	1	9
29-Apr-00	1	-	-	283	-	1	10
30-Apr-00	-	-	-	179	-	-	6
01-May-00	-	-	-	115	-	1	6
02-May-00	-	-	3	77	1	-	5
03-May-00	-	-	-	127	-	-	5
04-May-00	-	-	1	193	-	-	5
05-May-00	2	-	1	208	-	-	7
06-May-00	-	-	2	159	-	-	3
07-May-00	-	-	1	107	-	-	1
08-May-00	-	-	-	186	-	-	3
09-May-00	-	-	-	184	-	-	2
10-May-00	-	-	-	136	-	-	2



Appendix Table 8. Continued.

MCJ date	Div	Lost	Sep	Sep Div	Sep Lost	Sep Samp	Sep Samp Div
11-May-00	-	-	-	184	-	-	2
12-May-00	-	-	-	169	-	-	2
13-May-00	-	-	1	86	-	-	-
14-May-00	-	-	-	72	-	-	1
15-May-00	-	-	-	76	-	1	-
16-May-00	-	-	2	49	3	-	4
17-May-00	-	-	-	73	-	-	2
18-May-00	-	-	-	37	-	-	1
19-May-00	1	-	-	28	-	-	-
20-May-00	-	-	-	28	-	-	-
21-May-00	-	-	-	42	-	-	1
22-May-00	1	-	-	28	-	-	1
23-May-00	-	-	-	23	-	-	-
24-May-00	-	-	-	19	-	-	-
25-May-00	-	-	-	11	-	-	2
26-May-00	-	-	-	18	-	-	-
27-May-00	-	-	-	22	-	-	-
28-May-00	1	-	-	20	-	-	-
29-May-00	-	-	-	12	-	-	-
30-May-00	-	-	-	11	-	-	-
31-May-00	-	-	-	16	-	-	-
01-Jun-00	-	-	-	23	-	-	-
02-Jun-00	-	-	-	6	-	-	-
03-Jun-00	-	-	5	1	-	-	-
04-Jun-00	-	-	6	-	-	-	-
05-Jun-00	-	-	6	2	-	-	-
06-Jun-00	-	-	3	-	2	-	-
07-Jun-00	-	-	3	1	1	-	-
08-Jun-00	-	-	-	4	-	-	-
09-Jun-00	-	-	-	1	-	-	-
11-Jun-00	-	-	-	2	-	-	-
12-Jun-00	-	-	-	3	-	-	-

Appendix Table 8. Continued.

MCJ date	Div	Lost	Sep	Sep Div	Sep Lost	Sep Samp	Sep Samp Div
13-Jun-00	-	-	-	1	-	-	-
14-Jun-00	-	-	-	2	-	-	-
15-Jun-00	-	-	-	5	-	-	-
16-Jun-00	-	-	-	4	-	-	-
17-Jun-00	-	-	-	2	-	-	-
23-Jun-00	-	-	-	2	-	-	-
24-Jun-00	-	-	-	1	-	-	-
26-Jun-00	-	-	-	1	-	-	-

Appendix Table 9. Total adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as inriver fish at Lower Granite Dam in spring 1998. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/7/1998		4/29/2000	510C0A7D18		116	---		NR
		4/30/2000	510C0A3A6C	*	116	---		NR
		4/30/2000	5111312A59	*	138	---		NR
	4/15/2000	5/2/2000	51056D1654	*	116	---		NR
		5/7/2000	51111B7E63	*	105	---		NR
		5/9/2000	510A511712		107	---		NR
		5/12/2000	510C0C4A03		109	---		NR
		5/14/2000	511210511C	*	126	---		NR
		5/16/2000	51163F1E4D	*	121	---		NR
		6/5/2000	510C172C1F		108	---		NR
		6/9/2000	510C1D6F41		113	---		NR
		7/4/2000	510005030A	*	105	---		NR
	4/8/1998	5/5/2000	510A587A54		134	---		NR
		5/9/2000	5105651D52		114	---		NR
		6/10/2000	5116327E78		108	---		NR
	4/9/1998	4/10/2000	5/1/2000		144	---		NR
			5/20/2000	*	125	---		NR
			5/23/2000	*	128	---		NR
			6/7/2000	*	109	---		NR
			6/17/2000	*	134	---		NR
			6/24/2000	*	103	---		NR
			6/26/2000		116	---		NR
			7/9/2000	*	---	---		NR
4/10/1998		6/2/1999	51163D003C		149	480	7/1/1999	DWOR
		4/28/2000	51163F005B		126	---		NR
		4/29/2000	5100016645	*	127	---		NR
		5/3/2000	510F79476D	*	143	---		NR
		5/7/2000	51163C4B00	*	127	---		NR
		5/8/2000	511125204B	*	123	---		NR
		5/13/2000	510E063032	*	153	---		NR
		5/17/2000	510C131032	*	107	---		NR
		6/25/2000	510001382A	*	115	---		NR
	4/11/1998	6/28/1999	7/8/1999	*	126	560		NR
			5/1/2000		127	---		NR
			5/4/2000	*	132	---		NR
			5/5/2000	*	140	---		RAPH
			5/5/2000	*	119	---		NR
			5/11/2000	*	126	---		NR
			5/11/2000		133	---		NR
			6/12/2000	*	124	790	8/28/2000	SAWT
4/12/1998		6/14/2000	5116442648	*	120	---		NR
		6/4/1999	51120B5A05	*	130	460	7/1/1999	DWOR
		6/7/1999	5100036701	*	129	---		NR
	5/26/1999	6/16/1999	510C164F66	*	129	530		NR

Appendix Table 9. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/12/1998		4/26/2000	5109462D1D		130	---		NR
		4/28/2000	510C471110	*	124	---		NR
		4/30/2000	510618137C	*	126	---		NR
	4/14/2000	5/1/2000	511200610D		138	---		NR
	4/17/2000	5/3/2000	5110275456	*	132	---		NR
		5/5/2000	510F136728		123	---		NR
		5/6/2000	5105635879		125	---		NR
		5/8/2000	510C07675B	*	116	---		NR
		5/10/2000	51056F4D65		121	---		NR
		5/10/2000	510C18590A	*	125	---		NR
		5/17/2000	5100065A1B		127	---		NR
	4/13/1998	5/23/1999	510C3A013B		140	510		NR
	4/13/1998	5/26/1999	510A553133		132	480		NR
		5/27/1999	510A532005	*	133	450		NR
4/13/1998		7/19/1999	51075D5E67	*	140	580		NR
		4/24/2000	5106712A51		118	---		NR
		4/28/2000	51160A703C		128	---		NR
		4/28/2000	511B7B2C5B	*	119	---		NR
		4/30/2000	51061A1B5D		125	---		NR
		5/2/2000	51192C1F34		129	---		NR
		5/3/2000	5109432C26		148	---		NR
		5/4/2000	5112153D22	*	137	---		NR
		5/5/2000	51061E5B28	*	136	---		NR
		5/5/2000	5119427661		127	---		NR
		5/6/2000	5106747D43	*	164	---		NR
		5/6/2000	51106C3E1B	*	125	---		NR
		5/7/2000	511C0A6611	*	148	---		NR
		5/8/2000	5106183E00		139	---		NR
		5/9/2000	51193C1013		125	---		NR
		5/11/2000	5119387E0D	*	108	---		NR
		5/12/2000	510C3E7F5B	*	153	---		NR
		5/12/2000	510C35750D	*	146	---		NR
		5/12/2000	511C304E1F	*	129	---		NR
		5/13/2000	511B5E6152		118	---		NR
		5/14/2000	511C09327F	*	128	---		NR
		5/14/2000	510946076C	*	122	---		NR
		5/26/2000	511C401B3B	*	118	---		NR
		6/7/2000	5107554C7A		118	---		NR
		6/9/2000	5106733F71	*	140	---		NR
		6/17/2000	5107572421		119	---		NR
		6/18/2000	510C3E3550	*	120	---		NR
		6/19/2000	511B7F4C2D	*	118	810	8/26/2000	SAWT
		7/1/2000	5112145033		119	---		NR
	4/14/1998	5/25/1999	5119390075	*	134	510	6/28/1999	RAPH
		7/11/1999	511C032960	*	109	---		NR
		4/25/2000	511B5B6F22	*	139	---		NR
		5/5/2000	510C1A1E19	*	119	---		NR
		5/9/2000	511B790D1C	*	133	---		NR



Appendix Table 9. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/14/1998		5/16/2000	511B1C677A		116	---		NR
		5/17/2000	511612107D		132	---		NR
	5/5/2000	5/25/2000	511B316D50	*	141	---		NR
		6/5/2000	511C626527	*	129	---		NR
		6/6/2000	511B1E6529		116	---		NR
4/15/1998		6/15/2000	511C5D7B62	*	146	---		NR
		5/16/1999	511B2A376D		140	480	6/28/1999	RAPH
		5/31/1999	511B296E7C		136	---		NR
		4/24/2000	511C023475		128	---		NR
		4/30/2000	511B226204	*	126	---		NR
		5/1/2000	511B571870	*	132	---		NR
		5/3/2000	511C055C36		134	---		NR
		5/5/2000	511A7E7C20	*	129	---		NR
		5/8/2000	511C3E061C	*	150	---		NR
		5/9/2000	511B56343B	*	125	---		NR
		5/12/2000	511B485128	*	139	---		NR
		5/13/2000	511A7C0D60		120	---		NR
		5/21/2000	511B224429	*	138	---		NR
		5/21/2000	51193D1C5B	*	125	---		NR
		5/26/2000	5119446440	*	115	---		NR
		6/2/2000	511C0A487A	*	147	---		NR
		6/5/2000	511B585B36	*	119	---		NR
4/16/1998		5/23/1999	511041544B	*	139	530		NR
		4/27/2000	511B7C4418		121	---		NR
		4/29/2000	511B7E176F	*	135	---		NR
		4/29/2000	511B495B4E	*	148	---		NR
		4/30/2000	510B042D6C	*	116	---		NR
		5/6/2000	511B4C191B		132	---		NR
		5/19/2000	511C00396D	*	127	---		NR
		5/26/2000	511B7E455C	*	136	---		NR
		5/28/2000	511B1A4C43		120	---		NR
		4/28/2000	510E2B5133	*	154	---		NR
4/17/1998		5/4/2000	510E2B2137		137	---		NR
4/18/1998	5/14/1999	6/1/1999	511C0B0A23		133	---		NR
		4/23/2000	51122D0F47	*	142	---		NR
		4/26/2000	510C70704D		144	---		NR
		4/28/2000	510D1A5C30	*	138	---		NR
		5/1/2000	51134B3626	*	118	---		NR
		5/1/2000	5116073A78		147	---		NR
		5/3/2000	51155D4020	*	145	---		NR
		5/5/2000	510C696406	*	137	---		NR
		5/8/2000	5109137070		128	---		NR
		5/10/2000	51133F4523		139	---		NR
		5/13/2000	510D160A42	*	148	---		NR
	4/28/2000	5/13/2000	51166C1E33		114	---		NR
		6/4/2000	5113432C7D	*	122	790		SAWT
		6/7/2000	510D1A352F	*	134	---		NR

Appendix Table 9. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/19/1998	7/1/1999	6/2/1999	5115622530	*	148	460	7/4/1999	RAPH
		7/11/1999	5114277130		146	---		NR
		5/2/2000	510C6D1D6B		115	---		NR
4/20/1998		5/7/2000	510C7F064F	*	126	---		NR
		5/1/2000	510C6D006A		143	---		NR
		5/13/2000	5110114335		148	---		NR
4/22/1998		5/20/2000	510A497B0F		115	---		NR
		5/27/2000	510A491729	*	137	---		NR
		6/11/2000	5106112C09	*	148	---		NR
4/23/1998		7/3/2000	510E372334	*	114	---		NR
		6/11/1999	516914317F		132	500		NR
		5/1/2000	5107586A18	*	143	---		NR
4/24/1998		5/19/2000	510E5E337F	*	133	---		NR
		5/31/1999	5110710B7C	*	129	490	7/1/1999	DWOR
		5/1/2000	510D79171D	*	129	---		NR
4/25/1998		5/14/2000	5113667433		139	---		NR
		5/25/2000	510C134950		119	---		NR
		5/27/1999	5105710875		137	450	7/2/1999	RAPH
4/26/1998		5/2/2000	5112154E31		140	---		NR
		5/2/2000	510A583445	*	126	---		NR
		5/3/2000	51163D4C19	*	127	---		NR
4/27/1998		5/3/2000	51114D7643	*	128	---		NR
		5/4/2000	510F771562	*	144	---		NR
		5/4/2000	51120E0646	*	120	---		NR
4/28/1998		5/5/2000	51101A1D7E	*	125	---		NR
		5/6/2000	5110183F2E	*	138	---		NR
		5/10/2000	51107C276C	*	134	---		NR
4/29/1998		6/29/1999	510C0D2A6D	*	142		7/28/1999	SALSFW
		5/4/2000	510C0C477C		135	---		NR
		5/6/2000	51133C4647	*	128	---		NR
4/30/1998		5/10/2000	511343693D	*	161	---		NR
		5/22/1999	51085D361E	*	142		6/24/1999	RAPH
		6/9/1999	510F697F3A	*	147	---		NR
4/31/1998		4/28/2000	5108640E1D		132	---		NR
		5/7/2000	510F6E1A06		143	---		NR
		5/8/2000	5117745544		127	---		NR
4/32/1998		5/2/2000	51182A1153		152	---		NR
		5/7/2000	511800021D		117	---		NR
		5/23/2000	5117754E7F		137	---		NR
4/33/1998		6/2/2000	511820020A	*	144	---		NR
		5/4/2000	51101B237F		138	---		NR
		5/19/2000	51086B3020		123	---		NR
4/34/1998		7/21/2000	5108606B52	*	127	---		NR
		5/25/1999	51120C4F3D	*	138	---		NR
		6/3/1999	504C3F6926	*	134	---		NR
4/35/1998	5/26/1999	6/11/1999	504C492168	*	149	530	7/18/1999	SALSFW
		6/17/1999	504C48526F		150		8/26/1999	SALSFW
		4/13/2000	5108615F21		141	---		NR
4/36/1998		7/18/1999	5110170955		149		8/28/1999	SALSFW

Appendix Table 9. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/29/1998		4/22/2000	5113443F6B		146	---		NR
		4/28/2000	510B2C2170		129	---		NR
		4/29/2000	51133A0A09		147	---		NR
		4/30/2000	510C0C6151		139	---		NR
		4/30/2000	504C556005	*	134	---		NR
		5/4/2000	5113473449		132	---		NR
		5/4/2000	51086B372D		124	---		NR
		5/6/2000	504C4A532B		121	---		NR
		5/7/2000	510F5F413F		141	---		NR
		5/9/2000	5117556C5F	*	159	830	7/15/2000	POW
		5/13/2000	5118251A2A	*	162	---		NR
		5/15/2000	510B301E71		147	---		RAPH
		5/19/2000	5110281633		130	---		NR
		5/22/2000	504C457F5C		137	---		NR
		6/15/2000	5118293123		152	---		NR
		6/18/2000	510868586F		129	820	9/7/2000	SAWT
4/30/1998		4/27/2000	5116417A0B		148	---		NR
		5/6/2000	510B27554A	*	136	---		NR
	5/26/2000	6/6/2000	51102A3B28		127	---		NR
5/1/1998		5/22/1999	5114763916		139		7/8/1999	RAPH
		5/21/2000	510B697F66	*	141	---		NR
5/2/1998		6/13/1999	510F6D7544	*	141	530	7/20/1999	SALSFW
		7/22/1999	51134B396D	*	144	600		NR
		4/29/2000	511524636D	*	151	---		NR
		4/29/2000	510F727500		129	---		NR
		5/2/2000	51150D3510	*	127	---		NR
		5/10/2000	51144F0B67	*	135	---		NR
		6/10/2000	504C44336D		137	---		RAPH
	6/8/2000	6/21/2000	510D7B4F3B		113	---		NR
		6/6/1999	5102706305	*	137	490	7/2/1999	RAPH
		6/21/1999	5117142702	*	148	550	7/21/1999	SALSFW
5/3/1998		4/24/2000	511509343F	*	134	---		NR
		5/9/2000	51115F0A10	*	136	---		NR
	5/25/2000	6/10/2000	511154057F		148	---		NR
		6/18/2000	5114762D72	*	139	---		NR
		4/29/2000	507F55520A		153	---		NR
5/6/1998		5/13/2000	507F0F7D7F		127	---		NR
5/7/1998		4/30/2000	507F484D1C	*	106	---		NR
		5/24/2000	51131B6844	*	129	---		NR
		7/9/2000	5118004B01		150	---		NR
5/9/1998	4/26/2000	5/13/2000	51145F726A	*	169	---		NR
		7/3/2000	507F4B7908		148	800	7/20/2000	PAHSIW
5/10/1998		5/27/2000	511A462811		137	---		NR
5/12/1998		5/13/2000	511D112644	*	148	760	6/23/2000	CROTRP
5/15/1998		5/10/2000	511E290678		144	---		NR
		5/31/2000	511D4D0D40	*	127	780	7/6/2000	SAWT
		6/18/2000	507F142F04	*	136	---		NR
5/29/1998		5/21/2000	511D354E63	*	137	---		NR

Total adult returns: Jacks, 33; 2-ocean, 203; 3-ocean, NA

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.<sup>b</sup> Upstream recoveries of 2-ocean adults returning in 2000 were incomplete at the time this document was published.<sup>c</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 9.1. Total hatchery adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as inriver fish at Lower Granite Dam in spring 1998. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/7/1998	4/15/2000	5/2/2000	51056D1654	*	116	---		NR
		5/7/2000	51111B7E63	*	105	---		NR
		5/14/2000	511210511C	*	126	---		NR
		5/16/2000	51163F1E4D	*	121	---		NR
4/8/1998		5/5/2000	510A587A54		134	---		NR
4/9/1998	4/10/2000	5/1/2000	5109432654		144	---		NR
		5/20/2000	510C394131		125	---		NR
		7/9/2000	510C453F1C	*	---	---		NR
4/10/1998		6/2/1999	51163D003C		149	480	7/1/1999	DWOR
		4/29/2000	5100016645	*	127	---		NR
		5/3/2000	510F79476D	*	143	---		NR
		5/7/2000	51163C4B00	*	127	---		NR
4/11/1998	6/28/1999	7/8/1999	5116380107	*	126	560		NR
		5/1/2000	5105663447		127	---		NR
		5/4/2000	510A533776		132	---		NR
		5/5/2000	5109425C36	*	140	---		RAPH
		5/5/2000	51107A7C51	*	119	---		NR
		5/11/2000	5105680B4D		133	---		NR
		5/11/2000	510A4C4615	*	126	---		NR
		6/12/2000	510C40773B	*	124	790	8/28/2000	SAWT
4/12/1998		6/4/1999	51120B5A05	*	130	460	7/1/1999	DWOR
		6/7/1999	5100036701	*	129	---		NR
	5/26/1999	6/16/1999	510C164F66	*	129	530		NR
		4/26/2000	5109462D1D		130	---		NR
		4/28/2000	510C471110	*	124	---		NR
		4/30/2000	510618137C	*	126	---		NR
	4/14/2000	5/1/2000	511200610D		138	---		NR
		5/3/2000	5110275456	*	132	---		NR
	4/17/2000	5/6/2000	5105635879		125	---		NR
		5/10/2000	51056F4D65		121	---		NR
		5/10/2000	510C18590A	*	125	---		NR
		5/17/2000	5100065A1B		127	---		NR
4/13/1998		5/23/1999	510C3A013B		140	510		NR
		5/26/1999	510A553133		132	480		NR
		5/27/1999	510A532005	*	133	450		NR
		7/19/1999	51075D5E67	*	140	580		NR
		4/24/2000	5106712A51		118	---		NR
		4/28/2000	51160A703C		128	---		NR
		4/30/2000	51061A1B5D		125	---		NR
		5/2/2000	51192C1F34		129	---		NR
		5/3/2000	5109432C26		148	---		NR
		5/4/2000	5112153D22	*	137	---		NR
		5/5/2000	51061E5B28	*	136	---		NR
		5/5/2000	5119427661		127	---		NR
		5/6/2000	5106747D43	*	164	---		NR
		5/6/2000	51106C3E1B	*	125	---		NR
		5/7/2000	511C0A6611	*	148	---		NR



Appendix Table 9.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/13/1998		5/8/2000	5106183E00		139	---		NR
		5/9/2000	51193C1013		125	---		NR
		5/12/2000	510C3E7F5B	*	153	---		NR
4/13/1998		5/12/2000	511C304E1F	*	129	---		NR
		5/12/2000	510C35750D	*	146	---		NR
		5/13/2000	511B5E6152		118	---		NR
		5/14/2000	511C09327F	*	128	---		NR
		5/14/2000	510946076C	*	122	---		NR
		5/26/2000	511C401B3B	*	118	---		NR
		6/9/2000	5106733F71	*	140	---		NR
		6/17/2000	5107572421		119	---		NR
4/14/1998		5/25/1999	5119390075	*	134	510	6/28/1999	RAPH
		4/25/2000	511B5B6F22	*	139	---		NR
		5/5/2000	510C1A1E19	*	119	---		NR
		5/9/2000	511B790D1C	*	133	---		NR
		5/17/2000	511612107D		132	---		NR
	5/5/2000	5/25/2000	511B316D50	*	141	---		NR
		6/5/2000	511C626527	*	129	---		NR
		6/15/2000	511C5D7B62	*	146	---		NR
4/15/1998		5/16/1999	511B2A376D		140	480	6/28/1999	RAPH
		5/31/1999	511B296E7C		136	---		NR
		4/24/2000	511C023475		128	---		NR
		4/30/2000	511B226204	*	126	---		NR
		5/1/2000	511B571870	*	132	---		NR
		5/3/2000	511C055C36		134	---		NR
		5/5/2000	511A7E7C20	*	129	---		NR
		5/8/2000	511C3E061C	*	150	---		NR
		5/9/2000	511B56343B	*	125	---		NR
		5/12/2000	511B485128	*	139	---		NR
		5/13/2000	511A7C0D60		120	---		NR
		5/21/2000	511B224429	*	138	---		NR
		6/2/2000	511C0A487A	*	147	---		NR
		5/23/1999	511041544B	*	139	530		NR
		4/27/2000	511B7C4418		121	---		NR
		4/29/2000	511B495B4E	*	148	---		NR
4/16/1998		4/29/2000	511B7E176F	*	135	---		NR
		4/30/2000	510B042D6C	*	116	---		NR
		5/6/2000	511B4C191B		132	---		NR
		5/19/2000	511C00396D	*	127	---		NR
		5/26/2000	511B7E455C	*	136	---		NR
		5/28/2000	511B1A4C43		120	---		NR
		4/28/2000	510E2B5133	*	154	---		NR
		5/4/2000	510E2B2137		137	---		NR
4/17/1998		6/1/1999	511C0B0A23		133	---		NR
4/18/1998	5/14/1999	4/23/2000	51122D0F47	*	142	---		NR
		4/26/2000	510C70704D		144	---		NR
		4/28/2000	510D1A5C30	*	138	---		NR
		5/1/2000	5116073A78		147	---		NR
		5/3/2000	51155D4020	*	145	---		NR
		5/5/2000	510C696406	*	137	---		NR
		5/8/2000	5109137070		128	---		NR
		5/10/2000	51133F4523		139	---		NR

Appendix Table 9.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/18/1998		5/13/2000	510D160A42	*	148	---		NR
		6/7/2000	510D1A352F	*	134	---		NR
4/19/1998		6/2/1999	5115622530	*	148	460	7/4/1999	RAPH
	7/1/1999	7/11/1999	5114277130		146	---		NR
		5/7/2000	510C7F064F	*	126	---		NR
4/20/1998		5/1/2000	510C6D006A		143	---		NR
		5/13/2000	5110114335		148	---		NR
		5/27/2000	510A491729	*	137	---		NR
		6/11/2000	5106112C09	*	148	---		NR
4/22/1998		6/11/1999	516914317F		132	500		NR
		5/1/2000	5107586A18	*	143	---		NR
		5/19/2000	510E5E337F	*	133	---		NR
4/23/1998		5/31/1999	5110710B7C	*	129	490	7/1/1999	DWOR
		5/1/2000	510D79171D	*	129	---		NR
		5/14/2000	5113667433		139	---		NR
4/24/1998		5/27/1999	5105710875		137	450	7/2/1999	RAPH
		5/2/2000	5112154E31		140	---		NR
		5/2/2000	510A583445	*	126	---		NR
		5/3/2000	51163D4C19	*	127	---		NR
		5/3/2000	51114D7643	*	128	---		NR
		5/4/2000	510F771562	*	144	---		NR
		5/4/2000	51120E0646	*	120	---		NR
		5/5/2000	51101A1D7E	*	125	---		NR
		5/6/2000	5110183F2E	*	138	---		NR
		5/10/2000	51107C276C	*	134	---		NR
4/25/1998		6/29/1999	510C0D2A6D	*	142		7/28/1999	SALSFW
		5/4/2000	510C0C477C		135	---		NR
		5/6/2000	51133C4647	*	128	---		NR
		5/10/2000	511343693D	*	161	---		NR
4/26/1998		5/22/1999	51085D361E	*	142		6/24/1999	RAPH
		6/9/1999	510F697F3A	*	147	---		NR
		4/28/2000	5108640E1D		132	---		NR
		5/7/2000	510F6E1A06		143	---		NR
		5/8/2000	5117745544		127	---		NR
4/27/1998		5/2/2000	51182A1153		152	---		NR
		5/23/2000	5117754E7F		137	---		NR
		6/2/2000	511820020A	*	144	---		NR
4/28/1998		5/4/2000	51101B237F		138	---		NR
		5/19/2000	51086B3020		123	---		NR
		7/21/2000	5108606B52	*	127	---		NR
4/29/1998		5/25/1999	51120C4F3D	*	138	---		NR
		6/3/1999	504C3F6926	*	134	---		NR
	5/26/1999	6/11/1999	504C492168	*	149	530	7/18/1999	SALSFW
		6/17/1999	504C48526F		150		8/26/1999	SALSFW
		7/18/1999	5110170955		149		8/28/1999	SALSFW
		4/13/2000	5108615F21		141	---		NR
		4/22/2000	5113443F6B		146	---		NR
		4/28/2000	510B2C2170		129	---		NR
		4/29/2000	51133A0A09		147	---		NR
		4/30/2000	510C0C6151		139	---		NR
		4/30/2000	504C556005	*	134	---		NR
		5/4/2000	51086B372D		124	---		NR

Appendix Table 9.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/29/1998		5/4/2000	5113473449		132	---		NR
		5/6/2000	504C4A532B		121	---		NR
		5/7/2000	510F5F413F		141	---		NR
		5/9/2000	5117556CSF	*	159	830	7/15/2000	POWP
		5/13/2000	5118251A2A	*	162	---		NR
		5/15/2000	510B301E71		147	---		RAPH
		5/19/2000	5110281633		130	---		NR
		5/22/2000	504C457F5C		137	---		NR
		6/15/2000	5118293123		152	---		NR
		6/18/2000	510868586F		129	820	9/7/2000	SAWT
4/30/1998		4/27/2000	5116417A0B		148	---		NR
		5/6/2000	510B27554A	*	136	---		NR
	5/26/2000	6/6/2000	51102A3B28		127	---		NR
5/1/1998		5/22/1999	5114763916		139	---	7/8/1999	RAPH
		5/21/2000	510B697F66	*	141	---		NR
5/2/1998		6/13/1999	510F6D7544	*	141	530	7/20/1999	SALSFW
		7/22/1999	51134B396D	*	144	600		NR
		4/29/2000	511524636D	*	151	---		NR
		4/29/2000	510F727500		129	---		NR
		5/2/2000	51150D3510	*	127	---		NR
		5/10/2000	51144F0B67	*	135	---		NR
		6/10/2000	504C44336D		137	---		RAPH
5/2/1998		6/6/1999	5102706305	*	137	490	7/2/1999	RAPH
5/3/1998		6/21/1999	5117142702	*	148	550	7/21/1999	SALSFW
		4/24/2000	511509343F	*	134	---		NR
		5/9/2000	51115F0A10	*	136	---		NR
	5/25/2000	6/10/2000	511154057F		148	---		NR
		6/18/2000	5114762D72	*	139	---		NR
5/6/1998		4/29/2000	507F55520A		153	---		NR
5/7/1998		5/24/2000	51131B6844	*	129	---		NR
		7/9/2000	5118004B01		150	---		NR
5/9/1998	4/26/2000	5/13/2000	51145F726A	*	169	---		NR
		7/3/2000	507F4B7908		148	800	7/20/2000	PAHSIW
		5/27/2000	511A462811		137	---		NR
5/10/1998		5/13/2000	511D112644	*	148	760	6/23/2000	CROTRP
5/12/1998		5/10/2000	511E290678		144	---		NR
5/15/1998		6/18/2000	507F142F04	*	136	---		NR
Total adult returns:								
	Jacks	32						
	2-ocean	156						
	3-ocean	NA						

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.

<sup>b</sup> Upstream recoveries of 2-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>c</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 9.2. Total wild adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as inriver fish at Lower Granite Dam in spring 1998. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/7/1998		4/29/2000	510C0A7D18		116	---		NR
		4/30/2000	5111312A59	*	138	---		NR
		4/30/2000	510C0A3A6C	*	116	---		NR
		5/9/2000	510A511712		107	---		NR
		5/12/2000	510C0C4A03		109	---		NR
		6/5/2000	510C172C1F		108	---		NR
		6/9/2000	510C1D6F41		113	---		NR
		7/4/2000	510005030A	*	105	---		NR
4/8/1998		5/9/2000	5105651D52		114	---		NR
		6/10/2000	5116327E78		108	---		NR
4/9/1998		5/23/2000	510673574D	*	128	---		NR
		6/7/2000	51075E3840	*	109	---		NR
		6/17/2000	51111C0E18	*	134	---		NR
		6/24/2000	510A4A3812	*	103	---		NR
		6/26/2000	5109435369		116	---		NR
4/10/1998		4/28/2000	51163F005B		126	---		NR
		5/8/2000	511125204B	*	123	---		NR
		5/13/2000	510E063032	*	153	---		NR
		5/17/2000	510C131032	*	107	---		NR
		6/25/2000	510001382A	*	115	---		NR
4/11/1998		6/14/2000	5116442648	*	120	---		NR
4/12/1998		5/5/2000	510F136728		123	---		NR
4/13/1998		5/8/2000	510C07675B	*	116	---		NR
		4/28/2000	511B7B2C5B	*	119	---		NR
		5/11/2000	5119387E0D	*	108	---		NR
		6/7/2000	5107554C7A		118	---		NR
		6/18/2000	510C3E3550	*	120	---		NR
4/14/1998		6/19/2000	511B7F4C2D	*	118	810	8/26/2000	SAWT
		7/1/2000	5112145033		119	---		NR
		7/11/1999	511C032960	*	109	---		NR
		5/16/2000	511B1C677A		116	---		NR
		6/6/2000	511B1E6529		116	---		NR
4/15/1998		5/21/2000	51193D1C5B	*	125	---		NR
		5/26/2000	5119446440	*	115	---		NR
		6/5/2000	511B585B36	*	119	---		NR
4/18/1998		5/1/2000	51134B3626	*	118	---		NR
	4/28/2000	5/13/2000	51166C1E33		114	---		NR
		6/4/2000	5113432C7D	*	122	790		SAWT
4/19/1998		5/2/2000	510C6D1D6B		115	---		NR
4/20/1998		5/20/2000	510A497B0F		115	---		NR
		7/3/2000	510E372334	*	114	---		NR
4/23/1998		5/25/2000	510C134950		119	---		NR
4/27/1998		5/7/2000	511800021D		117	---		NR
5/2/1998	6/8/2000	6/21/2000	510D7B4F3B		113	---		NR
5/6/1998		5/13/2000	507F0F7D7F		127	---		NR
5/7/1998		4/30/2000	507F484D1C	*	106	---		NR
5/15/1998		5/31/2000	511D4D0D40	*	127	780	7/6/2000	SAWT
5/29/1998		5/21/2000	511D354E63	*	137	---		NR

Total adult returns: Jacks, 1; 2-ocean, 47; 3-ocean, NA

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.

<sup>b</sup> Upstream recoveries of 2-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>c</sup> Recovery location abbreviations: NR = Not recovered.



Appendix Table 10. Total adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1998. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/9/1998		4/30/2000	5116117C28		127	---		NR
		5/4/2000	5116180033		105	---		NR
		6/28/2000	51160A3166		123	---		NR
4/11/1998		5/18/1999	507F70304B		131	520		NR
		5/25/1999	510612626B		116	500		NR
		4/27/2000	5109403360		105	---		NR
		4/27/2000	5116154B54		139	---		NR
		4/30/2000	510564632A		115	---		NR
		5/2/2000	5105707946		157	---		NR
		5/2/2000	51056A4236		103	---		NR
		5/5/2000	51057A2137		131	---		NR
		5/9/2000	5105703C06		124	---		NR
		5/26/2000	5116346B54		113	---		NR
		6/10/2000	510A541A75		106	---		NR
		6/13/2000	5105780549		116	---		NR
		7/19/2000	510A5A132C		134	---		NR
4/13/1998		5/29/1999	511202627D		132	---		NR
		6/2/1999	510C05504C		142		7/22/1999	DWOR
		7/7/1999	5106765B09		121	---		NR
		7/9/1999	507F7D2B2B		126	570		NR
		4/27/2000	51163D7422		125	---		NR
		4/28/2000	51075F1306		133	---		NR
		4/29/2000	51112B5150		109	---		NR
		5/1/2000	5100026A6A		119	---		NR
		5/1/2000	510611610F		121	---		NR
		5/2/2000	5106722050		139	---		NR
		5/3/2000	510F106933		113	---		NR
		5/4/2000	510C193235		135	---		NR
		5/4/2000	51056E3624		115	---		NR
		5/5/2000	511936081B		134	---		NR
		5/7/2000	510C0A264E		137	---		NR
		5/8/2000	5116476F27		115	---		NR
		5/9/2000	510755534F		128	---		NR
		5/10/2000	510A5B2937		125	---		NR
		5/14/2000	510754473F		124	---		NR
		5/16/2000	5113765668		114	---		NR
		5/19/2000	510A51622F		140	---		NR
		5/26/2000	510A563257		124	---		NR
	5/9/2000	5/30/2000	510A5A3616		152	---		NR
		6/5/2000	51163B756A		132	---		NR
	5/27/2000	6/10/2000	510A51555F		---	---		NR
		6/12/2000	51117A4852		97	---		NR
		6/14/2000	507F6D3551		121	---		NR
		6/22/2000	510C3A4C3D		134	---		NR

Appendix Table 10. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/15/1998		5/15/1999	511B322C79		130	490		NR
		5/15/1999	511B545426		128	460		NR
		5/16/1999	511B52602A		141	510	7/1/1999	DWOR
		5/19/1999	511C60424E		136	480	7/3/1999	RAPH
		7/26/1999	511C354F24		130	---		NR
		4/28/2000	511C0E3117		123	---		NR
		4/28/2000	511B785244		127	---		NR
		5/1/2000	511B2F3C24		122	---		NR
		5/5/2000	5119301D37		116	---		NR
		5/6/2000	511B776A57		118	---		NR
		5/12/2000	511C041962		123	---		NR
		5/21/2000	511C0F5C06		142	---		NR
	4/15/1998	5/22/2000	511B534D42		133	---		NR
		5/23/2000	511A6C2070		125	---		NR
		6/6/2000	511B5F785D		139	---		NR
4/17/1998		6/9/2000	511B5C1305		120	---		NR
		6/10/2000	511C43630A		137	---		NR
		6/12/1999	511A6A701C		124		7/22/1999	DWOR
		6/27/1999	507F6F6705		144	610		NR
		5/6/2000	510C643343		125	---		NR
4/19/1998		7/1/2000	511B506F06		114	---		NR
		6/14/1999	511A717177		147	450		NR
		6/17/1999	510C77250C		120	480		NR
		4/24/2000	511A7F1A60		117	---		NR
		4/27/2000	510E2E1C2D		119	---		NR
	4/22/2000	5/5/2000	510C796549		106	---		NR
		5/6/2000	510C69776F		131	---		NR
		5/7/2000	51166F686A		125	---		NR
		5/10/2000	511B5F7C47		131	---		NR
	5/4/2000	5/18/2000	5115566962		126	---		NR
		5/19/2000	51112F4235		134	---		NR
	5/25/2000	6/10/2000	510E214349		129	---		NR
		6/23/2000	5113425E59		119	---		NR
		7/15/1999	5107587F5F		118	510		NR
4/21/1998		4/20/2000	51075B3309		136	---		NR
		5/6/2000	510E2A1653		137	---		NR
		5/6/2000	510A49581B		121	---		NR
		5/12/2000	510E2D1121		144	---		NR
		5/12/2000	510567561D		130	---		NR
		5/16/2000	510C1A6156		136	---		NR
	4/23/1998	5/18/1999	511021317E		142	480	7/1/1999	DWOR
		5/22/1999	510E281139		117	470		NR
		5/26/1999	510E307756		138	500	7/26/1999	RAPH
		6/30/1999	5113487002		143	540	7/27/1999	PAHSIW
		6/30/1999	5105652050		110	---		NR
		4/30/2000	510E532F12		126	---		NR
		5/14/2000	51107F2977		111	---		NR
		5/17/2000	5112092C48		142	---		NR

Appendix Table 10. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/25/1998		4/22/2000	510E54434B		129	---		NR
		5/1/2000	51133B0D10		114	---		NR
		5/2/2000	510C0D3904		132	---		NR
		5/4/2000	51111F5A76		128	---		NR
		5/4/2000	510E5D3B4A		122	---		NR
	4/20/2000	5/9/2000	510D482967		131	---		NR
		5/11/2000	510F76192A		142	---		NR
		5/11/2000	510E04294E		132	---		NR
4/27/1998		5/22/2000	510F03135A		130	---		NR
		6/14/1999	510D475600		139	---		NR
		4/19/2000	5110150679		131	---		NR
		4/26/2000	5117544220		137	---		NR
		4/28/2000	510F6F1C3C		133	---		NR
		4/29/2000	510F643047		146	---		NR
		4/30/2000	510F645209		135	---		NR
		5/1/2000	510C186408		114	---		NR
		5/2/2000	51101E5B25		124	---		NR
		5/3/2000	511742371A		143	---		NR
		5/4/2000	51134E537D		125	---		RAPH
		5/4/2000	510F656D2B		139	---		NR
		5/5/2000	504C4F134A		136	---		NR
		5/12/2000	511742352E		137	---		NR
	4/27/1998	5/21/2000	507F7F3B32		130	---		NR
	4/23/2000	5/22/2000	51134D7E72		145	---		NR
4/28/1998		5/31/2000	5110106E5D		125	---		NR
		6/21/2000	5117725C4A		127	---		NR
	5/5/2000	6/28/2000	504C447A71		133	---		NR
		5/18/1999	511773436B		139	510		NR
		6/17/1999	5113514E38		143	480		NR
		7/6/1999	5113397A7E		146		7/25/1999	SALSFW
		4/23/2000	5117520311		132	---		NR
		4/27/2000	510B29461F		145	---		NR
		4/28/2000	510B29235C		189	---		NR
		4/29/2000	5110272F03		128	---		NR
4/29/1998		5/4/2000	510B294031		135	---		NR
		5/9/2000	510F096774		117	---		NR
		5/26/2000	510F647329		150	---		NR
		6/2/2000	510D7A5A68		131	---		NR
		6/2/2000	510B2D5277		130	---		RAPH
		5/26/1999	510F777C7D		137	520		NR
		7/3/1999	5118220754		136	510		NR
		4/27/2000	51177A7042		134	---		NR
		4/27/2000	51101D4079		121	---		NR
		4/29/2000	5117460252		140	---		NR
		4/29/2000	510B2E4E26		138	750	6/17/2000	REDR
		4/30/2000	51085F4267		143	---		NR
		5/1/2000	5108625A6B		134	---		NR
		5/1/2000	510F63603F		137	---		NR
		5/1/2000	5108610E05		126	---		NR
		5/1/2000	5118254671		132	---		NR
		5/4/2000	51177A3D44		147	---		NR

Appendix Table 10. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/29/1998	4/13/2000	5/5/2000	51174A5F71	1	44	---		NR
		5/5/2000	5100040D76		134	---		NR
		5/6/2000	5117487E36		134	---		NR
		5/6/2000	51102A0E6C		125	---		NR
		5/8/2000	504C515911		109	---		NR
		5/10/2000	510B2C5811		113	---		NR
		5/10/2000	5110181252		119	---		NR
		5/11/2000	511754714A		134	---		RAPH
		5/11/2000	504C471D75		128	---		NR
		5/12/2000	5118266869		155	---		NR
		5/14/2000	504C4B0E47		141	730	6/23/2000	CROOKR
		5/16/2000	5117700E1E		142	---		RAPH
		5/18/2000	510B613120		148	---		NR
		5/19/2000	511824061C		140	---		NR
		5/19/2000	510C156938		123	---		NR
		5/27/2000	510B2E7D4C		158	---		NR
		6/4/2000	5108676771		135	---		NR
		6/10/2000	5108654636		123	---		NR
		6/11/2000	510F675D31		141	---		NR
		6/12/2000	510B5A5943		140	730	6/30/2000	CROTRP
		7/5/2000	51177D157E		143	---		NR
4/30/1998		5/31/1999	504C4B1817		139	490		NR
		6/27/1999	511773053C		151	530		NR
		7/1/1999	510B267B35		134	570		NR
		4/18/2000	504C50497B		137	---		NR
		4/23/2000	510B681459		135	---		NR
		5/1/2000	5117553842		136	---		NR
		5/4/2000	51085C5D21		155	---		NR
		5/6/2000	504C546857		144	---		NR
		5/8/2000	504C3E7724		142	---		NR
		5/12/2000	510B270779		140	---		NR
4/30/1998		5/20/2000	504C415B49		137	---		NR
		5/22/2000	510864400C		136	---		NR
		6/13/2000	504C54790A		137	720	7/6/2000	SAWT
		6/14/2000	510B61783C		137	---		NR
5/1/1998		7/7/2000	5117533E07		131	---		NR
		4/30/2000	5112615326		140	---		NR
		6/8/2000	510B5D360D		137	---		NR
5/2/1998		5/1/2000	510B67552B		140	---		NR
4/21/2000		5/4/2000	5117413064		---	---		NR
		5/5/2000	51126A7850		133	---		NR
		5/8/2000	5115084322		131	---		NR
		5/9/2000	504C422E07		122	---		NR
		5/13/2000	504C554628		148	---		NR
		5/27/2000	511740346A		139	---		NR
		5/31/2000	51147E6D5C		144	---		NR
		5/13/2000	507F55703D		140	---		NR
		5/14/2000	5104343449		127	---		NR
		6/26/2000	51147B4422		160	---		NR



Appendix Table 10. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/5/1998		5/2/2000	507F3D5B4E		150	---		NR
		5/19/2000	5101020B57		152	---		NR
		5/25/2000	507F4C4641		147	---		RAPH
		6/16/2000	507F1A3968		135	---		NR
		7/3/2000	510404486A		143	720	7/25/2000	PAHSIW
5/6/1998		6/26/1999	5104245803		159	590		NR
		4/29/2000	5115350E10		139	---		NR
		5/6/2000	51040C1E14		148	---		NR
	4/23/2000	5/13/2000	510431261B		142	---		NR
		6/28/2000	507F144B64		136	---		NR
5/7/1998		6/4/1999	511744762B		142	500	7/1/1999	DWOR
	4/12/2000	5/4/2000	5114784A39		147	730	6/27/2000	CROTRP
		5/22/2000	504C4A5A4E		137	---		NR
		5/23/2000	5117413A16		136	---		NR
		5/29/2000	511C6B0213		139	---		NR
5/8/1998		5/29/2000	51150E634A		145	---		NR
		6/22/2000	510B282F14		148	---		NR
		6/30/2000	5117703B5A		141	760	7/26/2000	SAWT
		7/6/2000	5117564D0C		136	---		NR
		5/6/2000	511D3C0C6D		144	---		NR
5/9/1998		5/6/2000	511273657E		151	---		NR
		5/7/2000	507F0F4249		160	---		NR
		5/19/2000	511D470D70		139	---		NR
		5/30/2000	5115261E71		136	---		NR
	5/12/1999	6/6/1999	511D0B7031		150	490	7/9/1999	CROTRP
5/9/1998		4/27/2000	511D18710D		136	---		RAPH
		4/29/2000	51193C5644		137	---		NR
		4/29/2000	511C2A0E3A		153	760	6/26/2000	POWP
		5/3/2000	511D080272		136	---		NR
		5/4/2000	51182A7F41		---	---		NR
5/9/1998		5/4/2000	5117726766		134	---		NR
	4/27/2000	5/19/2000	511D10524E		155	---		NR
		5/23/2000	5118284975		129	---		RAPH
	5/14/2000	5/28/2000	511D363919		142	---		NR
		6/2/2000	511D441F49		146	---		NR
5/9/1998		6/4/2000	511778072C		139	---		NR
		6/5/2000	5117790322		143	---		NR
		6/8/2000	511D497037		129	---		NR
		6/10/2000	511D370C49		144	---		NR
		6/12/2000	511D413C45		147	---		NR
5/10/1998		6/13/2000	51042C337F		146	---		NR
		6/24/2000	5118275165		144	---		NR
		6/30/2000	51174F2026		139	---		NR
		7/10/2000	511D1A4872		151	---		NR
		5/6/2000	511C2C3B15		137	---		NR
5/10/1998	4/19/2000	5/6/2000	511945273A		122	---		NR
		5/12/2000	51640C2D54		140	---		NR
		6/5/2000	511D153521		126	---		NR

Appendix Table 10. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/5/1998		5/2/2000	507F3D5B4E		150	---		NR
5/12/1998		5/2/2000	511E27352E		138	---		RAPH
		5/11/2000	511D0A5E4E		137	---		NR
5/13/1998		5/5/2000	511C5C5729		140	---		NR
	4/20/2000	5/12/2000	511A4F6B3C		128	---		NR
		5/29/2000	5119743C7A		152	---		NR
	5/25/2000	6/8/2000	511D3E3A59		147	---		NR
		6/16/2000	511973193F		142	---		NR
5/14/1998		5/23/2000	511C3D3B6D		142	---		RAPH
		6/5/2000	511C667F27		146	---		NR
		6/14/2000	51193E7414		147	---		NR
5/15/1998		5/1/2000	511C630E18		156	730	6/23/2000	CROOKC
		5/24/2000	511C2E1214		154	---		NR
5/20/1998		5/10/2000	511C39504A		145	---		NR
5/22/1998		5/29/1999	51195B4524		151		7/21/1999	SALSFW
5/29/1998		5/6/2000	511C64512B		157	---		NR
6/4/1998	4/15/2000	5/6/2000	511D362C5E		158	---		NR
6/16/1998		5/8/2000	511D05296F		130	---		NR

Total adult returns:

Jacks	34
2-ocean	223
3-ocean	NA

<sup>a</sup> Upstream recoveries of 2-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 10.1. Total hatchery adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1998. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/9/1998		4/30/2000	5116117C28		127	---		NR
4/11/1998		5/18/1999	507F70304B		131	520		NR
		4/27/2000	5116154B54		139	---		NR
		5/2/2000	5105707946		157	---		NR
		5/5/2000	51057A2137		131	---		NR
		5/9/2000	5105703C06		124	---		NR
4/13/1998		5/29/1999	511202627D		132	---		NR
		6/2/1999	510C05504C		142		7/22/1999	DWOR
		7/9/1999	507F7D2B2B		126	570		NR
		4/27/2000	51163D7422		125	---		NR
		4/28/2000	51075F1306		133	---		NR
		5/1/2000	510611610F		121	---		NR
		5/2/2000	5106722050		139	---		NR
		5/3/2000	510F106933		113	---		NR
		5/4/2000	51056E3624		115	---		NR
		5/4/2000	510C193235		135	---		NR
		5/5/2000	511936081B		134	---		NR
		5/7/2000	510C0A264E		137	---		NR
		5/8/2000	5116476F27		115	---		NR
		5/9/2000	510755534F		128	---		NR
		5/10/2000	510A5B2937		125	---		NR
		5/14/2000	510754473F		124	---		NR
		5/16/2000	5113765668		114	---		NR
		5/19/2000	510A51622F		140	---		NR
		5/26/2000	510A563257		124	---		NR
	5/9/2000	5/30/2000	510A5A3616		152	---		NR
		6/5/2000	51163B756A		132	---		NR
		6/14/2000	507F6D3551		121	---		NR
		6/22/2000	510C3A4C3D		134	---		NR
4/15/1998		5/15/1999	511B545426		128	460		NR
		5/15/1999	511B322C79		130	490		NR
		5/16/1999	511B52602A		141	510	7/1/1999	DWOR
		5/19/1999	511C60424E		136	480	7/3/1999	RAPH
		7/26/1999	511C354F24		130	---		NR
		4/28/2000	511B785244		127	---		NR
		4/28/2000	511C0E3117		123	---		NR
		5/1/2000	511B2F3C24		122	---		NR
		5/5/2000	5119301D37		116	---		NR
		5/6/2000	511B776A57		118	---		NR
		5/12/2000	511C041962		123	---		NR
		5/21/2000	511C0F5C06		142	---		NR
		5/22/2000	511B534D42		133	---		NR
		5/23/2000	511A6C2070		125	---		NR
		6/6/2000	511B5F785D		139	---		NR
		6/9/2000	511B5C1305		120	---		NR
		6/10/2000	511C43630A		137	---		NR
4/17/1998		6/12/1999	511A6A701C		124		7/22/1999	DWOR
		6/27/1999	507F6F6705		144	610		NR
		5/6/2000	510C643343		125	---		NR

Appendix Table 10.1. Continued

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/19/1998		6/14/1999	511A717177		147	450		NR
		4/27/2000	510E2E1C2D		119	---		NR
		5/6/2000	510C69776F		131	---		NR
		5/7/2000	51166F686A		125	---		NR
		5/10/2000	511B5F7C47		131	---		NR
	5/4/2000	5/18/2000	5115566962		126	---		NR
		5/19/2000	51112F4235		134	---		NR
4/19/1998	5/25/2000	6/10/2000	510E214349		129	---		NR
4/21/1998		4/20/2000	51075B3309		136	---		NR
		5/6/2000	510E2A1653		137	---		NR
		5/12/2000	510E2D1121		144	---		NR
		5/16/2000	510C1A6156		136	---		NR
4/23/1998		5/18/1999	511021317E		142	480	7/1/1999	DWOR
		5/26/1999	510E307756		138	500	7/26/1999	RAPH
		6/30/1999	5113487002		143	540	7/27/1999	PAHSIW
		6/30/1999	5105652050		110	---		NR
		4/30/2000	510E532F12		126	---		NR
		5/14/2000	51107F2977		111	---		NR
		5/17/2000	5112092C48		142	---		NR
4/25/1998		4/22/2000	510E54434B		129	---		NR
		5/2/2000	510C0D3904		132	---		NR
		5/4/2000	510E5D3B4A		122	---		NR
		5/4/2000	51111F5A76		128	---		NR
	4/20/2000	5/9/2000	510D482967		131	---		NR
		5/11/2000	510F76192A		142	---		NR
		5/11/2000	510E04294E		132	---		NR
		5/22/2000	510F03135A		130	---		NR
4/27/1998		6/14/1999	510D475600		139	---		NR
		4/19/2000	5110150679		131	---		NR
		4/26/2000	5117544220		137	---		NR
		4/28/2000	510F6F1C3C		133	---		NR
		4/29/2000	510F643047		146	---		NR
		4/30/2000	510F645209		135	---		NR
		5/2/2000	51101E5B25		124	---		NR
		5/3/2000	511742371A		143	---		NR
		5/4/2000	51134E537D		125	---		RAPH
		5/4/2000	510F656D2B		139	---		NR
		5/5/2000	504C4F134A		136	---		NR
		5/12/2000	511742352E		137	---		NR
		5/21/2000	507F7F3B32		130	---		NR
	4/23/2000	5/22/2000	51134D7E72		145	---		NR
		5/31/2000	5110106E5D		125	---		NR
		6/21/2000	5117725C4A		127	---		NR
	5/5/2000	6/28/2000	504C447A71		133	---		NR
4/28/1998		5/18/1999	511773436B		139	510		NR
		6/17/1999	5113514E38		143	480		NR
		7/6/1999	5113397A7E		146		7/25/1999	SALSFW
		4/23/2000	5117520311		132	---		NR
		4/27/2000	510B29461F		145	---		NR
		4/28/2000	510B29235C		189	---		NR
		4/29/2000	5110272F03		128	---		NR
		5/4/2000	510B294031		135	---		NR



Appendix Table 10.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/28/1998		5/9/2000	510F096774		117	---		NR
		5/26/2000	510F647329		150	---		NR
		6/2/2000	510D7A5A68		131	---		NR
		6/2/2000	510B2D5277		130	---		RAPH
4/29/1998		5/26/1999	510F777C7D		137	520		NR
		7/3/1999	5118220754		136	510		NR
		4/27/2000	51177A7042		134	---		NR
		4/27/2000	51101D4079		121	---		NR
		4/29/2000	510B2E4E26		138	750	6/17/2000	REDR
		4/29/2000	5117460252		140	---		NR
		4/30/2000	51085F4267		143	---		NR
		5/1/2000	510F63603F		137	---		NR
		5/1/2000	5108610E05		126	---		NR
		5/1/2000	5118254671		132	---		NR
4/29/1998		5/1/2000	5108625A6B		134	---		NR
		5/4/2000	51177A3D44		147	---		NR
	4/13/2000	5/5/2000	5100040D76		134	---		NR
		5/5/2000	51174A5F71		144	---		NR
		5/6/2000	5117487E36		134	---		NR
		5/6/2000	51102A0E6C		125	---		NR
		5/10/2000	5110181252		119	---		NR
		5/11/2000	511754714A		134	---		RAPH
		5/11/2000	504C471D75		128	---		NR
		5/12/2000	5118266869		155	---		NR
		5/14/2000	504C4B0E47		141	730	6/23/2000	CROOKR
		5/16/2000	5117700E1E		142	---		RAPH
		5/18/2000	510B613120		148	---		NR
		5/19/2000	511824061C		140	---		NR
		5/19/2000	510C156938		123	---		NR
		5/27/2000	510B2E7D4C		158	---		NR
		6/4/2000	5108676771		135	---		NR
		6/10/2000	5108654636		123	---		NR
		6/11/2000	510F675D31		141	---		NR
		6/12/2000	510B5A5943		140	730	6/30/2000	CROTRP
		7/5/2000	51177D157E		143	---		NR
4/30/1998		5/31/1999	504C4B1817		139	490		NR
		6/27/1999	511773053C		151	530		NR
		7/1/1999	510B267B35		134	570		NR
		4/18/2000	504C50497B		137	---		NR
		4/23/2000	510B681459		135	---		NR
		5/1/2000	5117553842		136	---		NR
		5/4/2000	51085C5D21		155	---		NR
		5/6/2000	504C546857		144	---		NR
		5/8/2000	504C3E7724		142	---		NR
		5/12/2000	510B270779		140	---		NR
		5/20/2000	504C415B49		137	---		NR
		5/22/2000	510864400C		136	---		NR
	5/31/2000	6/13/2000	504C54790A		137	720	7/6/2000	SAWT
		6/14/2000	510B61783C		137	---		NR
		7/7/2000	5117533E07		131	---		NR
5/1/1998		4/30/2000	5112615326		140	---		NR
		6/8/2000	510B5D360D		137	---		NR

Appendix Table 10.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/2/1998	4/21/2000	5/1/2000	510B67552B		140	---		NR
		5/4/2000	5117413064		---	---		NR
		5/5/2000	51126A7850		133	---		NR
		5/8/2000	5115084322		131	---		NR
		5/13/2000	504C554628		148	---		NR
		5/27/2000	511740346A		139	---		NR
		5/31/2000	51147E6D5C		144	---		NR
5/3/1998		5/13/2000	507F55703D		140	---		NR
		5/14/2000	5104343449		127	---		NR
		6/26/2000	51147B4422		160	---		NR
5/5/1998		5/2/2000	507F3D5B4E		150	---		NR
		5/19/2000	5101020B57		152	---		NR
		5/25/2000	507F4C4641		147	---		RAPH
		6/16/2000	507F1A3968		135	---		NR
		7/3/2000	510404486A		143	720	7/25/2000	PAHSIW
5/6/1998		6/26/1999	5104245803		159	590		NR
		4/29/2000	5115350E10		139	---		NR
		5/6/2000	51040C1E14		148	---		NR
	4/23/2000	5/13/2000	510431261B		142	---		NR
5/6/1998		6/28/2000	507F144B64		136	---		NR
5/7/1998		6/4/1999	511744762B		142	500	7/1/1999	DWOR
	4/12/2000	5/4/2000	5114784A39		147	730	6/27/2000	CROTRP
		5/22/2000	504C4A5A4E		137	---		NR
		5/23/2000	5117413A16		136	---		NR
		5/29/2000	51150E634A		145	---		NR
		5/29/2000	511C6B0213		139	---		NR
		6/22/2000	510B282F14		148	---		NR
		6/30/2000	5117703B5A		141	760	7/26/2000	SAWT
		7/6/2000	5117564D0C		136	---		NR
5/8/1998		5/6/2000	511D3C0C6D		144	---		NR
		5/6/2000	511273657E		151	---		NR
		5/7/2000	507F0F4249		160	---		NR
		5/19/2000	511D470D70		139	---		NR
		5/30/2000	5115261E71		136	---		NR
5/9/1998	5/12/1999	6/6/1999	511D0B7031		150	490	7/9/1999	CROTRP
		4/27/2000	511D18710D		136	---		RAPH
		4/29/2000	51193C5644		137	---		NR
		4/29/2000	511C2A0E3A		153	760	6/26/2000	POWP
		5/3/2000	511D080272		136	---		NR
		5/4/2000	5117726766		134	---		NR
		5/4/2000	51182A7F41		---	---		NR
	4/27/2000	5/19/2000	511D10524E		155	---		NR
		5/23/2000	5118284975		129	---		RAPH
	5/14/2000	5/28/2000	511D363919		142	---		NR
		6/2/2000	511D441F49		146	---		NR
		6/4/2000	511778072C		139	---		NR
		6/5/2000	5117790322		143	---		NR
		6/8/2000	511D497037		129	---		NR
		6/10/2000	511D370C49		144	---		NR
		6/12/2000	511D413C45		147	---		NR
		6/13/2000	51042C337F		146	---		NR
		6/24/2000	5118275165		144	---		NR
		6/30/2000	51174F2026		139	---		NR
		7/10/2000	511D1A4872		151	---		NR

Appendix Table 10.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/10/1998		5/6/2000	511C2C3B15		137	---		NR
		5/12/2000	51640C2D54		140	---		NR
		6/5/2000	511D153521		126	---		NR
5/12/1998		5/2/2000	511E27352E		138	---		RAPH
		5/11/2000	511D0A5E4E		137	---		NR
5/13/1998		5/5/2000	511C5C5729		140	---		NR
	4/20/2000	5/12/2000	511A4F6B3C		128	---		NR
		5/29/2000	5119743C7A		152	---		NR
	5/25/2000	6/8/2000	511D3E3A59		147	---		NR
		6/16/2000	511973193F		142	---		NR
		5/23/2000	511C3D3B6D		142	---		RAPH
5/14/1998		6/5/2000	511C667F27		146	---		NR
		6/14/2000	51193E7414		147	---		NR
		5/1/2000	511C630E18		156	730	6/23/2000	CROOKC
5/15/1998		5/24/2000	511C2E1214		154	---		NR
5/20/1998		5/10/2000	511C39504A		145	---		NR
5/22/1998		5/29/1999	51195B4524		151	---	7/21/1999	SALSWF
5/29/1998		5/6/2000	511C64512B		157	---		NR
6/4/1998	4/15/2000	5/6/2000	511D362C5E			158	---	
	NR							

Total adult returns:

Jacks	29
2-ocean	197
3-ocean	NA

<sup>a</sup> Upstream recoveries of 2-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 10.2. Total wild adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1998. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/9/1998		5/4/2000	5116180033			105	---	NR
4/9/1998		6/28/2000	51160A3166			123	---	NR
4/11/1998		5/25/1999	510612626B			116	500	NR
		4/27/2000	5109403360			105	---	NR
		4/30/2000	510564632A			115	---	NR
		5/2/2000	51056A4236			103	---	NR
		5/26/2000	5116346B54			113	---	NR
		6/10/2000	510A541A75			106	---	NR
		6/13/2000	5105780549			116	---	NR
		7/19/2000	510A5A132C			134	---	NR
4/13/1998		7/7/1999	5106765B09			121	---	NR
		4/29/2000	51112B5150			109	---	NR
		5/1/2000	5100026A6A			119	---	NR
	5/27/2000	6/10/2000	510A51555F			---	---	NR
		6/12/2000	51117A4852			97	---	NR
4/17/1998		7/1/2000	511B506F06			114	---	NR
4/19/1998		6/17/1999	510C77250C			120	480	NR
		4/24/2000	511A7F1A60			117	---	NR
	4/22/2000	5/5/2000	510C796549			106	---	NR
		6/23/2000	5113425E59			119	---	NR
4/21/1998		7/15/1999	5107587F5F			118	510	NR
		5/6/2000	510A49581B			121	---	NR
		5/12/2000	510567561D			130	---	NR
4/23/1998		5/22/1999	510E281139			117	470	NR
4/25/1998		5/1/2000	51133B0D10			114	---	NR
4/27/1998		5/1/2000	510C186408			114	---	NR
4/29/1998		5/8/2000	504C515911			109	---	NR
		5/10/2000	510B2C5811			113	---	NR
5/2/1998		5/9/2000	504C422E07			122	---	NR
5/10/1998	4/19/2000	5/6/2000	511945273A			122	---	NR
6/16/1998		5/8/2000	511D05296F			130	---	NR

Total adult returns:

Jacks	5
2-ocean	26
3-ocean	NA

<sup>a</sup> Upstream recoveries of 2-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.



Appendix Table 11. Total adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as inriver fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/6/1999		5/2/2000	511A7D6152	138	---	---	---	NR
4/8/1999		5/21/2000	5119443750	116	---	---	---	NR
4/17/1999		5/4/2000	527154562C	141	---	---	---	NR
4/18/1999		5/14/2000	526D13790A	*153	---	---	---	RAPH
4/21/1999		5/19/2000	526A3E4D7A	128	---	---	---	NR
4/22/1999		5/6/2000	52703A502C	150	---	---	---	NR
4/22/1999		5/15/2000	511A417516	123	---	---	---	NR
4/22/1999		5/21/2000	52703D433A	114	470	6/22/2000		CROTRP
4/23/1999		5/12/2000	526A48677A	160	480	6/23/2000		POWP
4/23/1999		5/12/2000	511E18595B	144	---	---	---	NR
4/23/1999		5/14/2000	52716A5A37	145	---	---	---	NR
4/23/1999		5/19/2000	511D0A5D59	*140	---	---	---	NR
4/23/1999		5/20/2000	526E4F3F18	*148	---	---	---	RAPH
4/23/1999		5/25/2000	511C0E3872	*138	---	---	---	NR
4/24/1999		5/6/2000	52623F3E77	132	---	---	---	NR
4/24/1999	5/5/2000	5/17/2000	526A232939	138	---	---	---	NR
4/24/1999		5/19/2000	525F34760B	143	---	---	---	NR
4/24/1999		5/19/2000	52714E1942	148	---	---	---	RAPH
4/24/1999		5/25/2000	52612E7700	133	---	---	---	NR
4/24/1999		7/3/2000	52601C277F	144	---	---	---	NR
4/25/1999		5/6/2000	526046504B	147	---	---	---	NR
4/25/1999		5/8/2000	51192C4656	123	---	---	---	NR
4/25/1999		5/9/2000	527017696C	138	---	---	---	NR
4/25/1999		5/20/2000	526B4D0A03	*148	---	---	---	NR
4/26/1999		5/14/2000	526B602430	*147	---	---	---	NR
4/26/1999		5/23/2000	526B237B6E	139	---	---	---	RAPH
4/26/1999		7/20/2000	52701B0D57	112	---	---	---	NR
4/27/1999		5/12/2000	526B7C476A	146	---	---	---	NR
4/27/1999		5/13/2000	52747C215D	146	---	---	---	NR
4/27/1999		5/16/2000	5275626110	150	---	---	---	NR
4/27/1999		5/17/2000	526E4B4756	137	---	---	---	NR
4/27/1999		5/23/2000	526A1C3366	*139	---	---	---	NR
4/27/1999		6/21/2000	526C2D0745	*130	---	---	---	NR
4/28/1999		5/10/2000	5278424D6A	151	---	---	---	NR
4/28/1999		5/12/2000	5276615339	135	---	---	---	NR
4/28/1999		5/12/2000	5304462443	133	---	---	---	NR
4/28/1999		5/15/2000	5273742820	*139	---	---	---	NR
4/28/1999		5/20/2000	5275236272	*145	---	---	---	NR
4/28/1999		5/22/2000	52704A104F	145	---	---	---	NR
4/28/1999		5/27/2000	5278267131	127	---	---	---	NR
4/28/1999		6/11/2000	53017A7668	150	---	---	---	NR
4/29/1999		5/18/2000	53010D5214	*149	---	---	---	NR
4/29/1999		6/15/2000	530533711B	124	---	---	---	NR
4/29/1999	6/11/2000	6/20/2000	5302114B2B	143	---	---	---	NR
4/29/1999		6/29/2000	5304312B6D	127	---	---	---	NR
4/29/1999	7/12/2000	7/27/2000	524B7B3556	136	---	---	---	NR
5/1/1999		5/15/2000	52753E1061	136	---	---	---	NR
5/1/1999		5/25/2000	527461281B	142	---	---	---	NR
5/1/1999		9/2/2000	526E775A77	150	---	---	---	NR

Appendix Table 11. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/2/1999		5/5/2000	527905337C		146	---	---	NR
5/2/1999		5/17/2000	5275336109		128	---	---	NR
5/2/1999		7/4/2000	52736F594F		148	---	---	NR
5/2/1999		7/4/2000	52754B2A6C		138	---	---	NR
5/3/1999		5/4/2000	5270454559	*	138	520	6/19/2000	CROTRP
5/3/1999		5/27/2000	5271056371		151	---	---	NR
5/3/1999		6/7/2000	526D09304A		132	---	---	NR
5/3/1999		7/20/2000	527911612F		134	---	---	NR
5/4/1999		5/7/2000	5272350A06		146	---	---	NR
5/5/1999		5/14/2000	5300570369		148	---	---	NR
5/5/1999		5/19/2000	5265336B5D	*	153	---	---	RAPH
5/5/1999		5/21/2000	5260723165		144	---	---	NR
5/5/1999		6/6/2000	5265022D65	*	123	---	---	NR
5/5/1999		6/26/2000	5300170E77	*	131	---	---	NR
5/5/1999		6/30/2000	5300363C3D	*	126	---	---	NR
5/5/1999		7/16/2000	5301047C3C	*	124	---	---	NR
5/5/1999		7/24/2000	53001D4F1D		106	---	---	NR
5/6/1999		5/8/2000	5261321274		139	---	---	NR
5/6/1999		5/18/2000	525F6C4418		155	---	---	NR
5/6/1999		5/20/2000	53010B1F79		161	---	---	NR
5/6/1999		6/6/2000	52664E416A		126	---	---	NR
5/7/1999		4/27/2000	53047D615C		144	---	---	NR
5/8/1999		5/27/2000	5274634040		136	---	---	NR
5/8/1999		6/14/2000	526E791F0B		126	---	---	NR
5/9/1999		5/6/2000	526311656E		151	---	---	NR
5/11/1999		5/18/2000	526D475E05	*	150	---	---	NR
5/11/1999		7/16/2000	524B7F3C3F	*	118	---	---	NR
5/13/1999	4/28/2000	5/11/2000	53024F5E5D		141	---	---	NR
5/14/1999		6/16/2000	52784A5208	*	136	---	---	NR
5/14/1999		6/21/2000	53025D5E56		136	---	---	NR
5/14/1999		6/22/2000	527616016F		143	---	---	NR
5/15/1999		5/29/2000	52783C0E22	*	163	---	---	NR
5/15/1999		7/8/2000	53052E1B30		137	---	---	NR
5/22/1999		5/17/2000	5104341173		137	---	---	NR
5/26/1999		5/15/2000	510431616F	*	146	---	---	NR
5/26/1999	6/9/2000	6/19/2000	51005C1F66		124	---	---	NR
5/26/1999		6/26/2000	510101254F		142	---	---	NR

Total adult returns:

Jacks	86
2-ocean	NA
3-ocean	NA

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.<sup>b</sup> Upstream recoveries of jacks returning in 2000 were incomplete at the time this document was published.<sup>c</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 11.1. Total hatchery adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as inriver fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/6/1999		5/2/2000	5/13/2000	511A7D6152	138	---	---	NR
4/17/1999			5/4/2000	527154562C	141	---	---	NR
4/18/1999			5/14/2000	526D13790A	*	153	---	RAPH
4/21/1999			5/19/2000	526A3E4D7A	128	---	---	NR
4/22/1999			5/6/2000	52703A502C	150	---	---	NR
4/22/1999			5/15/2000	511A417516	123	---	---	NR
4/23/1999			5/12/2000	511E18595B	144	---	---	NR
4/23/1999			5/12/2000	526A48677A	160	480	6/23/2000	POWP
4/23/1999			5/14/2000	52716A5A37	145	---	---	NR
4/23/1999			5/19/2000	511D0A5D59	*	140	---	NR
4/23/1999			5/20/2000	526E4F3F18	*	148	---	RAPH
4/23/1999			5/25/2000	511C0E3872	*	138	---	NR
4/24/1999			5/6/2000	52623F3E77	132	---	---	NR
4/24/1999	5/5/2000		5/17/2000	526A232939	138	---	---	NR
4/24/1999			5/19/2000	525F34760B	143	---	---	NR
4/24/1999			5/19/2000	52714E1942	148	---	---	RAPH
4/24/1999			5/25/2000	52612E7700	133	---	---	NR
4/24/1999			7/3/2000	52601C277F	144	---	---	NR
4/25/1999			5/6/2000	526046504B	147	---	---	NR
4/25/1999			5/8/2000	51192C4656	123	---	---	NR
4/25/1999			5/9/2000	527017696C	138	---	---	NR
4/25/1999			5/20/2000	526B4D0A03	*	148	---	NR
4/26/1999			5/14/2000	526B602430	*	147	---	NR
4/26/1999			5/23/2000	526B237B6E	139	---	---	RAPH
4/27/1999			5/12/2000	526B7C476A	146	---	---	NR
4/27/1999			5/13/2000	52747C215D	146	---	---	NR
4/27/1999			5/16/2000	5275626110	150	---	---	NR
4/27/1999			5/17/2000	526E4B4756	137	---	---	NR
4/27/1999			5/23/2000	526A1C3366	*	139	---	NR
4/27/1999			6/21/2000	526C2D0745	*	130	---	NR
4/28/1999			5/10/2000	5278424D6A	151	---	---	NR
4/28/1999			5/12/2000	5304462443	133	---	---	NR
4/28/1999			5/12/2000	5276615339	135	---	---	NR
4/28/1999			5/15/2000	5273742820	*	139	---	NR
4/28/1999			5/20/2000	5275236272	*	145	---	NR
4/28/1999			5/22/2000	52704A104F	145	---	---	NR
4/28/1999			5/27/2000	5278267131	127	---	---	NR
4/28/1999			6/11/2000	53017A7668	150	---	---	NR
4/29/1999			5/18/2000	53010D5214	*	149	---	NR
4/29/1999			6/15/2000	530533711B	124	---	---	NR
4/29/1999	6/11/2000		6/20/2000	5302114B2B	143	---	---	NR
4/29/1999			6/29/2000	5304312B6D	127	---	---	NR
4/29/1999	7/12/2000		7/27/2000	524B7B3556	136	---	---	NR
5/1/1999			5/15/2000	52753E1061	136	---	---	NR
5/1/1999			5/25/2000	527461281B	142	---	---	NR
5/1/1999			9/2/2000	526E775A77	150	---	---	NR
5/2/1999			5/5/2000	527905337C	146	---	---	NR
5/2/1999			5/17/2000	5275336109	128	---	---	NR

Appendix Table 11.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/2/1999		7/4/2000	52754B2A6C		138	---	---	NR
5/2/1999		7/4/2000	52736F594F		148	---	---	NR
5/3/1999		5/4/2000	5270454559	*	138	520	6/19/2000	CROTRP
5/3/1999		5/27/2000	5271056371		151	---	---	NR
5/3/1999		6/7/2000	526D09304A		132	---	---	NR
5/3/1999		7/20/2000	527911612F		134	---	---	NR
5/4/1999		5/7/2000	5272350A06		146	---	---	NR
5/5/1999		5/14/2000	5300570369		148	---	---	NR
5/5/1999		5/19/2000	5265336B5D	*	153	---	---	RAPH
5/5/1999		5/21/2000	5260723165		144	---	---	NR
5/5/1999		6/6/2000	5265022D65	*	123	---	---	NR
5/5/1999		6/26/2000	5300170E77	*	131	---	---	NR
5/5/1999		6/30/2000	5300363C3D	*	126	---	---	NR
5/5/1999		7/16/2000	5301047C3C	*	124	---	---	NR
5/5/1999		7/24/2000	53001D4F1D		106	---	---	NR
5/6/1999		5/8/2000	5261321274		139	---	---	NR
5/6/1999		5/18/2000	525F6C4418		155	---	---	NR
5/6/1999		5/20/2000	53010B1F79		161	---	---	NR
5/6/1999		6/6/2000	52664E416A		126	---	---	NR
5/7/1999		4/27/2000	53047D615C		144	---	---	NR
5/8/1999		5/27/2000	5274634040		136	---	---	NR
5/8/1999		6/14/2000	526E791F0B		126	---	---	NR
5/9/1999		5/6/2000	526311656E		151	---	---	NR
5/11/1999		5/18/2000	526D475E05	*	150	---	---	NR
5/13/1999	4/28/2000	5/11/2000	53024F5E5D		141	---	---	NR
5/14/1999		6/16/2000	52784A5208	*	136	---	---	NR
5/14/1999		6/21/2000	53025D5E56		136	---	---	NR
5/14/1999		6/22/2000	527616016F		143	---	---	NR
5/15/1999		5/29/2000	52783C0E22	*	163	---	---	NR
5/15/1999		7/8/2000	53052E1B30		137	---	---	NR
5/22/1999		5/17/2000	5104341173		137	---	---	NR
5/26/1999		5/15/2000	510431616F	*	146	---	---	NR
5/26/1999	6/9/2000	6/19/2000	51005C1F66		124	---	---	NR
5/26/1999		6/26/2000	510101254F		142	---	---	NR

Total adult returns:

Jacks	82
2-ocean	NA
3-ocean	NA

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.<sup>b</sup> Upstream recoveries of jacks returning in 2000 were incomplete at the time this document was published.<sup>c</sup> Recovery location abbreviations: NR = Not recovered.



Appendix Table 11.2 Total wild adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as inriver fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/8/1999		5/21/2000	5119443750		116	---	---	NR
4/22/1999		5/21/2000	52703D433A		114	470	6/22/2000	CROTRP
4/26/1999		7/20/2000	52701B0D57		112	---	---	NR
5/11/1999		7/16/2000	524B7F3C3F	*	118	---	---	NR

Total adult returns:

Jacks	4
2-ocean	NA
3-ocean	NA

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.

<sup>b</sup> Upstream recoveries of jacks returning in 2000 were incomplete at the time this document was published.

<sup>c</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 12. Total adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/4/1999		5/11/2000	516A655D44		120	---	---	NR
4/4/1999		5/14/2000	516A3C2B20		116	---	---	NR
4/22/1999		5/27/2000	5271667524		127	---	---	NR
4/23/1999		4/23/2000	525F7B7B3D		136	---	---	NR
4/23/1999	5/15/2000	6/2/2000	511E17606B		128	---	---	NR
4/24/1999		5/20/2000	526A1D4827		141	---	---	NR
4/25/1999		5/16/2000	5262065938		125	---	---	NR
4/25/1999		5/20/2000	525F484714		108	---	---	NR
4/25/1999		5/23/2000	527145641D		129	---	---	NR
4/25/1999		5/25/2000	5261001D23		148	---	---	NR
4/26/1999		5/14/2000	526C5D0266		150	510	8/26/2000	POWP
4/26/1999		5/22/2000	526C3C5B66		132	---	---	NR
4/26/1999		7/3/2000	526A7B3E10		112	---	---	NR
4/26/1999		7/21/2000	52700D4C0A		122	---	---	NR
4/27/1999	4/30/2000	5/12/2000	52782B151E		171	---	---	NR
4/27/1999	6/12/2000	6/26/2000	526C43136B		115	---	---	NR
4/27/1999		7/5/2000	526C44162D		149	---	---	NR
4/28/1999		5/14/2000	52672D1C73		140	---	---	NR
4/28/1999		5/19/2000	530502567A		140	---	---	NR
4/28/1999		5/27/2000	526A187D7B		136	---	---	NR
4/28/1999	5/14/2000	6/6/2000	5273724154		138	---	---	NR
4/28/1999		6/29/2000	5271595740		100	---	---	NR
4/28/1999		6/30/2000	5270051628		124	---	---	NR
4/29/1999		5/6/2000	5277481C3B		147	---	---	NR
4/29/1999	4/29/2000	5/19/2000	52753F2705		145	---	---	RAPH
4/29/1999		5/22/2000	52745F4377		139	---	---	NR
4/29/1999		7/3/2000	5301673B4D		125	---	---	NR
4/29/1999		7/3/2000	5275215C00		131	---	---	NR
4/30/1999	4/20/2000	5/3/2000	52736D580B		138	---	---	NR
4/30/1999		5/15/2000	52745F501E		138	---	---	NR
5/1/1999		5/1/2000	5271073963		146	---	---	NR
5/1/1999		5/12/2000	526A436449		150	---	---	NR
5/1/1999		5/17/2000	5271704D18		145	480	7/10/2000	POWP
5/1/1999		5/23/2000	53011A6359		134	---	---	RAPH
5/1/1999	5/11/2000	5/25/2000	5273416466		155	---	---	RAPH
5/1/1999		5/28/2000	53044D7F31		143	---	---	NR
5/1/1999		6/18/2000	527109611E		124	---	---	NR
5/1/1999		7/2/2000	5274764034		113	---	---	NR
5/2/1999		5/8/2000	526D170F2C		137	---	---	NR
5/4/1999		5/29/2000	53003B544E		138	---	---	RAPH
5/4/1999		6/9/2000	5269606C78		126	---	---	NR
5/4/1999		6/17/2000	527011022C		137	---	---	NR
5/5/1999		5/13/2000	5263452869		131	---	---	NR
5/5/1999	5/7/2000	5/18/2000	53001C3C1A		140	---	---	NR
5/5/1999		5/20/2000	5302092F70		148	---	---	NR
5/5/1999		5/23/2000	53020D6359		141	520	6/28/2000	REDR
5/5/1999		6/2/2000	5272371477		111	---	---	NR
5/5/1999		6/5/2000	525F72644B		137	---	---	NR
5/5/1999		7/3/2000	52710C2B0D		140	---	---	NR
5/6/1999		4/30/2000	524B6E0B37		151	---	---	NR

Appendix Table 12. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/6/1999		5/3/2000	52660D4756		144	---	---	NR
5/6/1999		5/13/2000	526638074C		149	---	---	RAPH
5/6/1999		5/26/2000	526D6C5818		137	---	---	NR
5/6/1999		5/26/2000	525F710D27		164	---	---	NR
5/6/1999		5/27/2000	53010E5267		153	---	---	NR
5/6/1999		5/30/2000	526610253B		163	---	---	NR
5/6/1999		6/4/2000	52607D137A		132	---	---	NR
5/6/1999		6/4/2000	526242616E		157	---	---	NR
5/6/1999		6/10/2000	5301317E6B		136	---	---	NR
5/6/1999		6/19/2000	526315760B		126	---	---	NR
5/6/1999		7/2/2000	5264494807		135	---	---	NR
5/7/1999		5/17/2000	5304426D53		147	---	---	NR
5/7/1999		5/21/2000	5305122505		155	---	---	NR
5/7/1999		6/27/2000	53044F4254		153	---	---	NR
5/7/1999		7/1/2000	53053A4A74		139	---	---	NR
5/8/1999	4/19/2000	5/3/2000	526A244A2B		140	---	---	NR
5/8/1999		5/10/2000	527017484C		141	---	---	NR
5/8/1999		5/14/2000	5265335366		163	---	---	NR
5/8/1999		5/26/2000	530158680E		141	---	---	NR
5/8/1999		6/22/2000	52723E1339		128	---	---	NR
5/9/1999		5/3/2000	526022127C		129	480	8/26/2000	POWP
5/9/1999		5/4/2000	525F7A6E6E		146	480	6/23/2000	CROTRP
5/9/1999		5/4/2000	526261421E		143	---	---	NR
5/9/1999		5/25/2000	526340742A		150	---	---	RAPH
5/9/1999		6/26/2000	526D497B03		146	---	---	NR
5/9/1999		7/4/2000	52607F5C2F		137	---	---	NR
5/9/1999		7/10/2000	5261595471		135	---	---	NR
5/9/1999		7/15/2000	52700B6F75		139	---	---	NR
5/9/1999	5/6/2000	7/20/2000	52633F607C		183	500	8/8/2000	POWP
5/11/1999	5/9/2000	5/21/2000	530127383B		115	---	---	NR
5/11/1999		6/10/2000	52664A3807		131	---	---	NR
5/11/1999		6/22/2000	52663D205A		140	---	---	NR
5/11/1999		6/29/2000	5261596E7E		143	---	---	NR
5/11/1999		7/6/2000	5260764A3C		134	---	---	NR
5/13/1999		7/14/2000	52770B3913		142	---	---	NR
5/18/1999	5/13/2000	5/26/2000	52770C3704		144	---	---	NR
5/18/1999		5/28/2000	5278490048		125	---	---	NR
5/18/1999		6/23/2000	53053F0821		134	---	---	NR

Total adult returns:

Jacks	88
2-ocean	NA
3-ocean	NA

<sup>a</sup> Upstream recoveries of jacks returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 12.1. Total hatchery adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/22/1999		5/27/2000	5271667524		127	---	---	NR
4/23/1999		4/23/2000	525F7B7B3D		136	---	---	NR
4/23/1999	5/15/2000	6/2/2000	511E17606B		128	---	---	NR
4/24/1999		5/20/2000	526A1D4827		141	---	---	NR
4/25/1999		5/16/2000	5262065938		125	---	---	NR
4/25/1999		5/23/2000	527145641D		129	---	---	NR
4/25/1999		5/25/2000	5261001D23		148	---	---	NR
4/26/1999		5/14/2000	526C5D0266		150	510	8/26/2000	POWP
4/26/1999		5/22/2000	526C3C5B66		132	---	---	NR
4/27/1999	4/30/2000	5/12/2000	52782B151E		171	---	---	NR
4/27/1999		7/5/2000	526C44162D		149	---	---	NR
4/28/1999		5/14/2000	52672D1C73		140	---	---	NR
4/28/1999		5/19/2000	530502567A		140	---	---	NR
4/28/1999		5/27/2000	526A187D7B		136	---	---	NR
4/28/1999	5/14/2000	6/6/2000	5273724154		138	---	---	NR
4/28/1999		6/30/2000	5270051628		124	---	---	NR
4/29/1999		5/6/2000	5277481C3B		147	---	---	NR
4/29/1999	4/29/2000	5/19/2000	52753F2705		145	---	---	RAPH
4/29/1999		5/22/2000	52745F4377		139	---	---	NR
4/29/1999		7/3/2000	5275215C00		131	---	---	NR
4/29/1999		7/3/2000	5301673B4D		125	---	---	NR
4/30/1999	4/20/2000	5/3/2000	52736D580B		138	---	---	NR
4/30/1999		5/15/2000	52745F501E		138	---	---	NR
5/1/1999		5/1/2000	5271073963		146	---	---	NR
5/1/1999		5/12/2000	526A436449		150	---	---	NR
5/1/1999		5/17/2000	5271704D18		145	480	7/10/2000	POWP
5/1/1999		5/23/2000	53011A6359		134	---	---	RAPH
5/1/1999	5/11/2000	5/25/2000	5273416466		155	---	---	RAPH
5/1/1999		5/28/2000	53044D7F31		143	---	---	NR
5/1/1999		6/18/2000	527109611E		124	---	---	NR
5/2/1999		5/8/2000	526D170F2C		137	---	---	NR
5/4/1999		5/29/2000	53003B544E		138	---	---	RAPH
5/4/1999		6/9/2000	5269606C78		126	---	---	NR
5/4/1999		6/17/2000	527011022C		137	---	---	NR
5/5/1999		5/13/2000	5263452869		131	---	---	NR
5/5/1999	5/7/2000	5/18/2000	53001C3C1A		140	---	---	NR
5/5/1999		5/20/2000	5302092F70		148	---	---	NR
5/5/1999		5/23/2000	53020D6359		141	520	6/28/2000	REDR
5/5/1999		6/5/2000	525F72644B		137	---	---	NR
5/5/1999		7/3/2000	52710C2B0D		140	---	---	NR
5/6/1999	4/30/2000		524B6E0B37		151	---	---	NR
5/6/1999		5/3/2000	52660D4756		144	---	---	NR
5/6/1999		5/13/2000	526638074C		149	---	---	RAPH
5/6/1999		5/26/2000	526D6C5818		137	---	---	NR
5/6/1999		5/26/2000	525F710D27		164	---	---	NR
5/6/1999		5/27/2000	53010E5267		153	---	---	NR
5/6/1999		5/30/2000	526610253B		163	---	---	NR



Appendix Table 12.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/6/1999		6/4/2000	526242616E		157	---	---	NR
5/6/1999		6/4/2000	52607D137A		132	---	---	NR
5/6/1999		6/10/2000	5301317E6B		136	---	---	NR
5/6/1999		6/19/2000	526315760B		126	---	---	NR
5/6/1999		7/2/2000	5264494807		135	---	---	NR
5/7/1999		5/17/2000	5304426D53		147	---	---	NR
5/7/1999		5/21/2000	5305122505		155	---	---	NR
5/7/1999		6/27/2000	53044F4254		153	---	---	NR
5/7/1999		7/1/2000	53053A4A74		139	---	---	NR
5/8/1999	4/19/2000	5/3/2000	526A244A2B		140	---	---	NR
5/8/1999		5/10/2000	527017484C		141	---	---	NR
5/8/1999		5/14/2000	5265335366		163	---	---	NR
5/8/1999		5/26/2000	530158680E		141	---	---	NR
5/9/1999		5/3/2000	526022127C		129	480	8/26/2000	POWP
5/9/1999		5/4/2000	525F7A6E6E		146	480	6/23/2000	CROTRP
5/9/1999		5/4/2000	526261421E		143	---	---	NR
5/9/1999		5/25/2000	526340742A		150	---	---	RAPH
5/9/1999		6/26/2000	526D497B03		146	---	---	NR
5/9/1999		7/4/2000	52607F5C2F		137	---	---	NR
5/9/1999		7/10/2000	5261595471		135	---	---	NR
5/9/1999		7/15/2000	52700B6F75		139	---	---	NR
5/9/1999	5/6/2000	7/20/2000	52633F607C		183	500	8/8/2000	POWP
5/11/1999		6/10/2000	52664A3807		131	---	---	NR
5/11/1999		6/22/2000	52663D205A		140	---	---	NR
5/11/1999		6/29/2000	5261596E7E		143	---	---	NR
5/11/1999		7/6/2000	5260764A3C		134	---	---	NR
5/13/1999		7/14/2000	52770B3913		142	---	---	NR
5/18/1999	5/13/2000	5/26/2000	52770C3704		144	---	---	NR
5/18/1999		5/28/2000	5278490048		125	---	---	NR
5/18/1999		6/23/2000	53053F0821		134	---	---	NR

Total adult returns:

Jacks	77
2-ocean	NA
3-ocean	NA

<sup>a</sup> Upstream recoveries of jacks returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 12.2. Total wild adult returns to Lower Granite Dam from spring/summer chinook salmon smolts tagged as transport fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/4/1999		5/11/2000	516A655D44		120	---	---	NR
4/4/1999		5/14/2000	516A3C2B20		116	---	---	NR
4/25/1999		5/20/2000	525F484714		108	---	---	NR
4/26/1999		7/3/2000	526A7B3E10		112	---	---	NR
4/26/1999		7/21/2000	52700D4C0A		122	---	---	NR
4/27/1999	6/12/2000	6/26/2000	526C43136B		115	---	---	NR
4/28/1999		6/29/2000	5271595740		100	---	---	NR
5/1/1999		7/2/2000	5274764034		113	---	---	NR
5/5/1999		6/2/2000	5272371477		111	---	---	NR
5/8/1999		6/22/2000	52723E1339		128	---	---	NR
5/11/1999	5/9/2000	5/21/2000	530127383B		115	---	---	NR

Total adult returns:

Jacks	11
2-ocean	NA
3-ocean	NA

<sup>a</sup> Upstream recoveries of jacks returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 13. Total adult returns to Lower Granite Dam from steelhead smolts tagged as inriver fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
3/31/1999		10/4/2000	511C6A1279		258	---	---	NR
3/31/1999		10/5/2000	511C364D63		303	---	---	NR
4/1/1999	8/18/2000	9/22/2000	511C426F42		228	---	---	NR
4/8/1999		9/10/2000	511C0A745B	*	256	---	---	NR
4/14/1999		9/19/2000	5119605731		252	---	---	NR
4/15/1999		9/8/2000	5119724744		250	---	---	NR
4/16/1999		9/11/2000	526E490271		225	---	---	NR
4/17/1999		9/5/2000	51196E6A0F		243	---	---	NR
4/17/1999		9/10/2000	5269617B1F		262	---	---	NR
4/17/1999		9/21/2000	516B69624D		227	---	---	NR
4/17/1999		9/23/2000	52737C5950		228	---	---	NR
4/17/1999		9/24/2000	52774E7830		242	---	---	NR
4/17/1999		9/25/2000	52732B3E55		201	---	---	NR
4/17/1999	9/2/2000	9/26/2000	5275423439		254	---	---	NR
4/17/1999		9/28/2000	511E467622		245	---	---	NR
4/17/1999		10/3/2000	5120022012		238	---	---	NR
4/17/1999		10/14/2000	5269694147		254	---	---	NR
4/17/1999		10/14/2000	5272092B06		232	---	---	NR
4/18/1999	8/27/2000	9/20/2000	5275381B5B		257	---	---	NR
4/18/1999		9/26/2000	511E1C3E20		240	---	---	NR
4/18/1999		9/26/2000	52761C362F	*	269	---	---	NR
4/20/1999		9/6/2000	52716A0804	*	230	---	---	NR
4/20/1999		9/6/2000	5120052A1F		212	---	---	NR
4/20/1999		9/19/2000	511E2C2740		222	---	---	NR
4/21/1999		8/11/2000	5271107B3D		264	---	---	NR
4/21/1999		9/21/2000	5272001550		223	---	---	NR
4/21/1999		9/24/2000	527207714F	*	233	---	---	NR
4/23/1999		8/31/2000	52623B4A65	*	212	---	---	NR
4/23/1999		9/9/2000	526C423F20		238	---	---	NR
4/23/1999		9/20/2000	526E470D06		262	---	---	NR
4/23/1999		9/21/2000	526A795251		199	---	---	NR
4/23/1999		9/23/2000	526B5C731A		248	---	---	NR
4/23/1999	8/18/2000	9/23/2000	526C5A3816	*	194	---	---	NR
4/23/1999		9/29/2000	526A10394F		200	---	---	NR
4/23/1999		10/7/2000	526C644E7B		211	---	---	NR
4/24/1999	7/27/2000	8/31/2000	5260706608		201	---	---	NR
4/24/1999		9/5/2000	526A417573		263	---	---	NR
4/24/1999		9/23/2000	526A705608		263	---	---	NR
4/24/1999	8/5/2000	9/25/2000	526B521451		216	---	---	NR
4/24/1999		10/5/2000	5261265E31	*	233	---	---	NR
4/24/1999		10/10/2000	5261370026		193	---	---	NR
4/25/1999		9/5/2000	526C2C451C	*	257	---	---	NR
4/25/1999	8/7/2000	9/8/2000	526B21034B		232	---	---	NR
4/25/1999		9/12/2000	5261332510		225	---	---	NR
4/25/1999		9/19/2000	526A725041		216	---	---	NR
4/25/1999		9/24/2000	5260203949		201	---	---	NR
4/25/1999		9/25/2000	527339373B		208	---	---	NR
4/25/1999	9/19/2000	9/30/2000	5271085931		195	---	---	NR
4/25/1999		10/9/2000	526A430724		219	---	---	NR
4/25/1999	9/11/2000	10/11/2000	526A253A3B	*	240	---	---	NR
4/27/1999	8/13/2000	9/8/2000	527460292C		223	---	---	NR

Appendix Table 13. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/27/1999		9/12/2000	527658606B		268	---	---	NR
4/27/1999		10/15/2000	526B230736		236	---	---	NR
4/28/1999		9/13/2000	52745C4304		214	---	---	NR
4/28/1999		9/20/2000	53044B1766	*	251	---	---	NR
4/28/1999		9/23/2000	526B5D722D		230	---	---	NR
4/28/1999		9/24/2000	53052E2C40		203	---	---	NR
4/28/1999		10/11/2000	5305103728		200	---	---	NR
4/28/1999		10/13/2000	53102F5C4E		239	---	---	NR
4/29/1999		9/10/2000	530117453B	*	243	---	---	NR
4/29/1999		9/13/2000	5275192832		235	---	---	NR
4/29/1999		9/15/2000	530202585D		259	---	---	NR
4/29/1999		9/19/2000	52732C6748		239	---	---	NR
4/29/1999		9/25/2000	5275241427		222	---	---	NR
4/29/1999		9/30/2000	526C5B3167		222	---	---	NR
5/1/1999		9/10/2000	5273580C75		214	---	---	NR
5/1/1999		9/24/2000	5301703415		217	---	---	NR
5/1/1999		9/28/2000	526F2A3C05	*	196	---	---	NR
5/1/1999		10/8/2000	5276280411		242	---	---	NR
5/1/1999		10/15/2000	52732F6F7D		248	---	---	NR
5/2/1999	8/24/2000	9/18/2000	526D6B2D5A		211	---	---	NR
5/2/1999	9/3/2000	9/22/2000	526E7F2F1D		232	---	---	NR
5/2/1999		9/23/2000	526F321C3D		225	---	---	NR
5/2/1999		9/25/2000	5273415847		250	---	---	NR
5/2/1999	8/30/2000	9/26/2000	526F017409		210	---	---	NR
5/2/1999		9/27/2000	5271190F60	*	202	---	---	NR
5/2/1999		9/27/2000	526F257E60	*	203	---	---	NR
5/2/1999		9/30/2000	52717E2E49		231	---	---	NR
5/2/1999		10/1/2000	5273343D06	*	222	---	---	NR
5/2/1999		10/10/2000	52710B751D		193	---	---	NR
5/3/1999		10/11/2000	5271151F45	*	211	---	---	NR
5/3/1999		10/13/2000	5271797443		207	---	---	NR
5/4/1999		9/14/2000	5279052970		226	---	---	NR
5/4/1999		9/19/2000	530013182B		233	---	---	NR
5/4/1999		10/1/2000	527501292A		213	---	---	NR
5/5/1999		8/7/2000	5301032E70		214	---	---	NR
5/5/1999		9/19/2000	53004C1666	*	210	---	---	NR
5/5/1999		10/7/2000	524F7D3561		212	---	---	NR
5/6/1999		8/14/2000	525F670D20		210	---	---	NR
5/6/1999		8/27/2000	5300676651	*	234	---	---	NR
5/6/1999		9/13/2000	526D6B4E37		229	---	---	NR
5/6/1999		9/13/2000	52601D385E		260	---	---	NR
5/6/1999		9/16/2000	53005C4217		209	---	---	NR
5/6/1999		9/18/2000	526452196B		213	---	---	NR
5/6/1999		9/19/2000	526700712E		254	---	---	NR
5/6/1999		9/26/2000	5260723923		255	---	---	NR
5/6/1999		9/27/2000	525F37421F		232	---	---	NR
5/6/1999		10/5/2000	52615C6620		199	---	---	NR
5/7/1999		7/31/2000	53004B3872		235	---	---	NR
5/7/1999		9/8/2000	5300384754		214	---	---	NR
5/7/1999		9/19/2000	5305384827	*	243	---	---	NR
5/7/1999		9/23/2000	5301084351		218	---	---	NR
5/7/1999		9/29/2000	526D4B6D34		238	---	---	NR
5/7/1999	9/17/2000	10/12/2000	53004F2B17	*	203	---	---	NR
5/7/1999		10/15/2000	5305106C7E		235	---	---	NR
5/8/1999		9/18/2000	525F7B2645		262	---	---	NR



Appendix Table 13. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/8/1999		9/23/2000	5304691522		205	---	---	NR
5/8/1999	9/9/2000	9/26/2000	5275614B12		211	---	---	NR
5/8/1999		9/26/2000	53044F5630		264	---	---	NR
5/8/1999		10/12/2000	526D451469		241	---	---	NR
5/9/1999	7/25/2000	9/9/2000	5261217A57	*	230	---	---	NR
5/9/1999		9/10/2000	526152027C	*	254	---	---	NR
5/9/1999		9/15/2000	526311710A		258	---	---	NR
5/9/1999	8/4/2000	9/20/2000	5266365E12		233	---	---	NR
5/9/1999		9/21/2000	53053C0971		239	---	---	NR
5/9/1999		9/27/2000	52630E6227	*	220	---	---	NR
5/9/1999		9/30/2000	526671422E		232	---	---	NR
5/9/1999		10/14/2000	5262635E5B	*	223	---	---	NR
5/9/1999		10/15/2000	5261260818		214	---	---	NR
5/11/1999		9/4/2000	5302572533		215	---	---	NR
5/11/1999		9/18/2000	52647B7020		200	---	---	NR
5/11/1999		9/18/2000	526E213520		261	---	---	NR
5/11/1999	8/18/2000	9/23/2000	526346093A		216	---	---	NR
5/11/1999		9/27/2000	5264247E6D		247	---	---	NR
5/11/1999		9/28/2000	53017A303F		228	---	---	NR
5/11/1999		9/29/2000	5266493C6E	*	271	---	---	NR
5/12/1999	7/27/2000	9/5/2000	527731432E	*	222	---	---	NR
5/12/1999		9/21/2000	5302194514		219	---	---	NR
5/12/1999		9/28/2000	5302334B5B		230	---	---	NR
5/12/1999		9/30/2000	530251130B		243	---	---	NR
5/13/1999		9/7/2000	5300262150	*	230	---	---	NR
5/13/1999		9/7/2000	52780F1612	*	263	---	---	NR
5/13/1999	8/4/2000	9/25/2000	53025D7F76	*	248	---	---	NR
5/13/1999		10/13/2000	52772A1F3D		223	---	---	NR
5/14/1999		9/12/2000	5263443B14	*	247	---	---	NR
5/14/1999		9/16/2000	5263451814		235	---	---	NR
5/14/1999		9/17/2000	530317177F		235	---	---	NR
5/14/1999		9/22/2000	5303343D6A	*	251	---	---	NR
5/15/1999		8/28/2000	53025E7359		139	---	---	NR
5/15/1999		9/2/2000	53047C7015		254	---	---	NR
5/15/1999		9/20/2000	53047E2075		215	---	---	NR
5/15/1999		9/21/2000	52771B3E72		264	---	---	NR
5/15/1999		9/26/2000	5305116321		239	---	---	NR
5/15/1999		9/28/2000	52770F191C		224	---	---	NR
5/15/1999		9/29/2000	53027D367D		231	---	---	NR
5/15/1999		10/1/2000	5304295D7C		267	---	---	NR
5/15/1999		10/6/2000	5304206504		210	---	---	NR
5/15/1999		10/8/2000	53030E3D21		276	---	---	NR
5/15/1999		10/14/2000	5303035645		287	---	---	NR
5/17/1999		9/13/2000	51005C0E3B	*	296	---	---	NR
5/17/1999		9/13/2000	5305155164	*	253	---	---	NR
5/17/1999		9/30/2000	51004C1356	*	234	---	---	NR
5/18/1999		9/10/2000	530513721B		228	---	---	NR
5/18/1999		9/16/2000	52765B5900		223	---	---	NR
5/18/1999		9/24/2000	5302642D7D		230	---	---	NR
5/18/1999		10/7/2000	53027F4876		215	---	---	NR
5/19/1999		9/12/2000	53003D4B10		213	---	---	NR
5/19/1999		9/24/2000	5304141743		253	---	---	NR
5/19/1999	9/15/2000	9/28/2000	5301202771		232	---	---	NR
5/19/1999		9/29/2000	53003B5D2B		218	---	---	NR
5/20/1999		9/18/2000	53014A520A		216	---	---	NR

Appendix Table 13. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/20/1999		9/23/2000	53004B5808		231	---	---	NR
5/20/1999		9/23/2000	5303522D09		254	---	---	NR
5/20/1999		10/15/2000	5303472844		272	---	---	NR
5/21/1999		9/6/2000	5303712131		265	---	---	NR
5/21/1999		9/9/2000	5303121B3B	*	208	---	---	NR
5/21/1999		9/11/2000	53041A2D70		189	---	---	NR
5/21/1999		9/30/2000	5305080063		265	---	---	NR
5/22/1999	7/27/2000	9/7/2000	5101120A18		255	---	---	NR
5/22/1999		9/20/2000	5303095562		223	---	---	NR
5/22/1999		9/26/2000	530518177C	*	249	---	---	NR
5/22/1999		9/29/2000	507F1B1139		232	---	---	NR
5/25/1999		8/10/2000	5100543463	*	252	---	---	NR
5/25/1999	8/14/2000	8/31/2000	5101167F29	*	194	---	---	NR
5/25/1999		9/7/2000	5104091F2F		265	---	---	NR
5/25/1999		9/8/2000	51040B036A		222	---	---	NR
5/25/1999		9/11/2000	530414116D	*	232	---	---	NR
5/25/1999	7/27/2000	9/16/2000	5102674E6A		199	---	---	NR
5/25/1999		9/29/2000	51005E4457		275	---	---	NR
5/27/1999		8/26/2000	521E177652		247	---	---	NR
5/27/1999	7/18/2000	9/6/2000	223007147E		222	---	---	NR
6/5/1999		6/14/2000	516A5E1229	*	146	---	---	NR

## Total adult returns:

1-ocean 182  
 2-ocean NA  
 3-ocean NA

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.

<sup>b</sup> Upstream recoveries of 1-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>c</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 13.1. Total hatchery adult returns to Lower Granite Dam from steelhead smolts tagged as inriver fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
3/31/1999		10/4/2000	511C6A1279		258	---	---	NR
4/1/1999	8/18/2000	9/22/2000	511C426F42		228	---	---	NR
4/8/1999		9/10/2000	511C0A745B	*	256	---	---	NR
4/14/1999		9/19/2000	5119605731		252	---	---	NR
4/15/1999		9/8/2000	5119724744		250	---	---	NR
4/16/1999		9/11/2000	526E490271		225	---	---	NR
4/17/1999		9/5/2000	51196E6A0F		243	---	---	NR
4/17/1999		9/10/2000	5269617B1F		262	---	---	NR
4/17/1999		9/21/2000	516B69624D		227	---	---	NR
4/17/1999		9/23/2000	52737C5950		228	---	---	NR
4/17/1999		9/24/2000	52774E7830		242	---	---	NR
4/17/1999	9/2/2000	9/26/2000	5275423439		254	---	---	NR
4/17/1999		9/28/2000	511E467622		245	---	---	NR
4/17/1999		10/3/2000	5120022012		238	---	---	NR
4/17/1999		10/14/2000	5272092B06		232	---	---	NR
4/18/1999	8/27/2000	9/20/2000	5275381B5B		257	---	---	NR
4/18/1999		9/26/2000	511E1C3E20		240	---	---	NR
4/18/1999		9/26/2000	52761C362F	*	269	---	---	NR
4/20/1999		9/6/2000	5120052A1F		212	---	---	NR
4/20/1999		9/6/2000	52716A0804	*	230	---	---	NR
4/20/1999		9/19/2000	511E2C2740		222	---	---	NR
4/21/1999		8/11/2000	5271107B3D		264	---	---	NR
4/21/1999		9/21/2000	5272001550		223	---	---	NR
4/21/1999		9/24/2000	527207714F	*	233	---	---	NR
4/23/1999		8/31/2000	52623B4A65	*	212	---	---	NR
4/23/1999		9/9/2000	526C423F20		238	---	---	NR
4/23/1999		9/20/2000	526E470D06		262	---	---	NR
4/23/1999		9/21/2000	526A795251		199	---	---	NR
4/23/1999		9/23/2000	526B5C731A		248	---	---	NR
4/23/1999	8/18/2000	9/23/2000	526C5A3816	*	194	---	---	NR
4/23/1999		9/29/2000	526A10394F		200	---	---	NR
4/23/1999		10/7/2000	526C644E7B		211	---	---	NR
4/24/1999	7/27/2000	8/31/2000	5260706608		201	---	---	NR
4/24/1999		9/5/2000	526A417573		263	---	---	NR
4/24/1999		9/23/2000	526A705608		263	---	---	NR
4/24/1999	8/5/2000	9/25/2000	526B521451		216	---	---	NR
4/24/1999		10/5/2000	5261265E31	*	233	---	---	NR
4/25/1999		9/5/2000	526C2C451C	*	257	---	---	NR
4/25/1999	8/7/2000	9/8/2000	526B21034B		232	---	---	NR
4/25/1999		9/19/2000	526A725041		216	---	---	NR
4/25/1999		9/25/2000	527339373B		208	---	---	NR
4/25/1999	9/19/2000	9/30/2000	5271085931		195	---	---	NR
4/25/1999		10/9/2000	526A430724		219	---	---	NR
4/25/1999	9/11/2000	10/11/2000	526A253A3B	*	240	---	---	NR
4/27/1999	8/13/2000	9/8/2000	527460292C		223	---	---	NR
4/27/1999		9/12/2000	527658606B		268	---	---	NR
4/27/1999		10/15/2000	526B230736		236	---	---	NR
4/28/1999		9/13/2000	52745C4304		214	---	---	NR

Appendix Table 13.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/28/1999		9/20/2000	53044B1766	*	251	---	---	NR
4/28/1999		9/23/2000	526B5D722D		230	---	---	NR
4/28/1999		10/11/2000	5305103728		200	---	---	NR
4/28/1999		10/13/2000	53102F5C4E		239	---	---	NR
4/29/1999		9/10/2000	530117453B	*	243	---	---	NR
4/29/1999		9/13/2000	5275192832		235	---	---	NR
4/29/1999		9/15/2000	530202585D		259	---	---	NR
4/29/1999		9/19/2000	52732C6748		239	---	---	NR
4/29/1999		9/25/2000	5275241427		222	---	---	NR
4/29/1999		9/30/2000	526C5B3167		222	---	---	NR
5/1/1999		9/10/2000	5273580C75		214	---	---	NR
5/1/1999		9/24/2000	5301703415		217	---	---	NR
5/1/1999		9/28/2000	526F2A3C05	*	196	---	---	NR
5/1/1999		10/8/2000	5276280411		242	---	---	NR
5/1/1999		10/15/2000	52732F6F7D		248	---	---	NR
5/2/1999	8/24/2000	9/18/2000	526D6B2D5A		211	---	---	NR
5/2/1999	9/3/2000	9/22/2000	526E7F2F1D		232	---	---	NR
5/2/1999		9/23/2000	526F321C3D		225	---	---	NR
5/2/1999		9/25/2000	5273415847		250	---	---	NR
5/2/1999	8/30/2000	9/26/2000	526F017409		210	---	---	NR
5/2/1999		9/27/2000	5271190F60	*	202	---	---	NR
5/2/1999		9/27/2000	526F257E60	*	203	---	---	NR
5/2/1999		9/30/2000	52717E2E49		231	---	---	NR
5/2/1999		10/1/2000	5273343D06	*	222	---	---	NR
5/2/1999		10/10/2000	52710B751D		193	---	---	NR
5/3/1999		10/11/2000	5271151F45	*	211	---	---	NR
5/3/1999		10/13/2000	5271797443		207	---	---	NR
5/4/1999		9/14/2000	5279052970		226	---	---	NR
5/4/1999		9/19/2000	530013182B		233	---	---	NR
5/4/1999		10/1/2000	527501292A		213	---	---	NR
5/5/1999		8/7/2000	5301032E70		214	---	---	NR
5/5/1999		9/19/2000	53004C1666	*	210	---	---	NR
5/5/1999		10/7/2000	524F7D3561		212	---	---	NR
5/6/1999		8/14/2000	525F670D20		210	---	---	NR
5/6/1999		8/27/2000	5300676651	*	234	---	---	NR
5/6/1999		9/13/2000	52601D385E		260	---	---	NR
5/6/1999		9/13/2000	526D6B4E37		229	---	---	NR
5/6/1999		9/16/2000	53005C4217		209	---	---	NR
5/6/1999		9/18/2000	526452196B		213	---	---	NR
5/6/1999		9/19/2000	526700712E		254	---	---	NR
5/6/1999		9/26/2000	5260723923		255	---	---	NR
5/6/1999		9/27/2000	525F37421F		232	---	---	NR
5/6/1999		10/5/2000	52615C6620		199	---	---	NR
5/7/1999		7/31/2000	53004B3872		235	---	---	NR
5/7/1999		9/8/2000	5300384754		214	---	---	NR
5/7/1999		9/19/2000	5305384827	*	243	---	---	NR
5/7/1999		9/23/2000	5301084351		218	---	---	NR
5/7/1999		9/29/2000	526D4B6D34		238	---	---	NR
5/7/1999	9/17/2000	10/12/2000	53004F2B17	*	203	---	---	NR
5/7/1999		10/15/2000	5305106C7E		235	---	---	NR
5/8/1999		9/18/2000	525F7B2645		262	---	---	NR
5/8/1999		9/23/2000	5304691522		205	---	---	NR
5/8/1999		9/26/2000	53044F5630		264	---	---	NR



Appendix Table 13.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/8/1999		10/12/2000	526D451469		241	---	---	NR
5/9/1999	7/25/2000	9/9/2000	5261217A57	*	230	---	---	NR
5/9/1999		9/10/2000	526152027C	*	254	---	---	NR
5/9/1999		9/15/2000	526311710A		258	---	---	NR
5/9/1999	8/4/2000	9/20/2000	5266365E12		233	---	---	NR
5/9/1999		9/21/2000	53053C0971		239	---	---	NR
5/9/1999		9/27/2000	52630E6227	*	220	---	---	NR
5/9/1999		9/30/2000	526671422E		232	---	---	NR
5/9/1999		10/14/2000	5262635E5B	*	223	---	---	NR
5/9/1999		10/15/2000	5261260818		214	---	---	NR
5/11/1999		9/4/2000	5302572533		215	---	---	NR
5/11/1999		9/18/2000	526E213520		261	---	---	NR
5/11/1999	8/18/2000	9/23/2000	526346093A		216	---	---	NR
5/11/1999		9/27/2000	5264247E6D		247	---	---	NR
5/11/1999		9/28/2000	53017A303F		228	---	---	NR
5/11/1999		9/29/2000	5266493C6E	*	271	---	---	NR
5/12/1999	7/27/2000	9/5/2000	527731432E	*	222	---	---	NR
5/12/1999		9/21/2000	5302194514		219	---	---	NR
5/12/1999		9/28/2000	5302334B5B		230	---	---	NR
5/12/1999		9/30/2000	530251130B		243	---	---	NR
5/13/1999		9/7/2000	5300262150	*	230	---	---	NR
5/13/1999		9/7/2000	52780F1612	*	263	---	---	NR
5/13/1999	8/4/2000	9/25/2000	53025D7F76	*	248	---	---	NR
5/13/1999		10/13/2000	52772A1F3D		223	---	---	NR
5/14/1999		9/12/2000	5263443B14	*	247	---	---	NR
5/14/1999		9/17/2000	530317177F		235	---	---	NR
5/14/1999		9/22/2000	5303343D6A	*	251	---	---	NR
5/15/1999		9/2/2000	53047C7015		254	---	---	NR
5/15/1999		9/20/2000	53047E2075		215	---	---	NR
5/15/1999		9/21/2000	52771B3E72		264	---	---	NR
5/15/1999		9/26/2000	5305116321		239	---	---	NR
5/15/1999		9/28/2000	52770F191C		224	---	---	NR
5/15/1999		9/29/2000	53027D367D		231	---	---	NR
5/15/1999		10/1/2000	5304295D7C		267	---	---	NR
5/15/1999		10/6/2000	5304206504		210	---	---	NR
5/15/1999		10/8/2000	53030E3D21		276	---	---	NR
5/15/1999		10/14/2000	5303035645		287	---	---	NR
5/17/1999		9/13/2000	51005C0E3B	*	296	---	---	NR
5/17/1999		9/13/2000	5305155164	*	253	---	---	NR
5/17/1999		9/30/2000	51004C1356	*	234	---	---	NR
5/18/1999		9/10/2000	530513721B		228	---	---	NR
5/18/1999		9/16/2000	52765B5900		223	---	---	NR
5/18/1999		9/24/2000	5302642D7D		230	---	---	NR
5/18/1999		10/7/2000	53027F4876		215	---	---	NR
5/19/1999		9/24/2000	5304141743		253	---	---	NR
5/19/1999	9/15/2000	9/28/2000	5301202771		232	---	---	NR
5/19/1999		9/29/2000	53003B5D2B		218	---	---	NR
5/20/1999		9/18/2000	53014A520A		216	---	---	NR
5/20/1999		9/23/2000	53004B5808		231	---	---	NR
5/20/1999		9/23/2000	5303522D09		254	---	---	NR
5/20/1999		10/15/2000	5303472844		272	---	---	NR
5/21/1999		9/6/2000	5303712131		265	---	---	NR
5/21/1999		9/9/2000	5303121B3B	*	208	---	---	NR

Appendix Table 13.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/21/1999		9/30/2000	5305080063		265	---	---	NR
5/22/1999	7/27/2000	9/7/2000	5101120A18		255	---	---	NR
5/22/1999		9/20/2000	5303095562		223	---	---	NR
5/22/1999		9/26/2000	530518177C	*	249	---	---	NR
5/22/1999		9/29/2000	507F1B1139		232	---	---	NR
5/25/1999		8/10/2000	5100543463	*	252	---	---	NR
5/25/1999	8/14/2000	8/31/2000	5101167F29	*	194	---	---	NR
5/25/1999		9/7/2000	5104091F2F		265	---	---	NR
5/25/1999		9/11/2000	530414116D	*	232	---	---	NR
5/25/1999		9/29/2000	51005E4457		275	---	---	NR
5/27/1999		8/26/2000	521E177652		247	---	---	NR
5/27/1999	7/18/2000	9/6/2000	223007147E		222	---	---	NR
6/5/1999		6/14/2000	516A5E1229	*	146	---	---	NR

Total adult returns:

1-ocean	167
2-ocean	NA
3-ocean	NA

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.

<sup>b</sup> Upstream recoveries of 1-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>c</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 13.2. Total wild adult returns to Lower Granite Dam from steelhead smolts tagged as inriver fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
3/31/1999		10/5/2000	511C364D63		303	---	---	NR
4/17/1999		9/25/2000	52732B3E55		201	---	---	NR
4/17/1999		10/14/2000	5269694147		254	---	---	NR
4/24/1999		10/10/2000	5261370026		193	---	---	NR
4/25/1999		9/12/2000	5261332510		225	---	---	NR
4/25/1999		9/24/2000	5260203949		201	---	---	NR
4/28/1999		9/24/2000	53052E2C40		203	---	---	NR
5/8/1999	9/9/2000	9/26/2000	5275614B12		211	---	---	NR
5/11/1999		9/18/2000	52647B7020		200	---	---	NR
5/14/1999		9/16/2000	5263451814		235	---	---	NR
5/15/1999		8/28/2000	53025E7359		139	---	---	NR
5/19/1999		9/12/2000	53003D4B10		213	---	---	NR
5/21/1999		9/11/2000	53041A2D70		189	---	---	NR
5/25/1999		9/8/2000	51040B036A		222	---	---	NR
5/25/1999	7/27/2000	9/16/2000	5102674E6A		199	---	---	NR

Total adult returns:

1-ocean	15
2-ocean	NA
3-ocean	NA

<sup>a</sup> Not detected at a Snake River dam below Lower Granite Dam.

<sup>b</sup> Upstream recoveries of 1-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>c</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 14. Total adult returns to Lower Granite Dam from steelhead smolts tagged as transport fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
3/31/1999		10/1/2000	511D05465E		232	---	---	NR
4/6/1999		10/13/2000	511D175E6D		231	---	---	NR
4/20/1999		10/5/2000	526E546F57		276	---	---	NR
4/22/1999		9/24/2000	52703F5A46		203	---	---	NR
4/22/1999	7/30/2000	9/26/2000	52753C5772		293	---	---	NR
4/23/1999		9/15/2000	511E264841		275	---	---	NR
4/23/1999	8/5/2000	9/23/2000	5270376C42		254	---	---	NR
4/23/1999		9/25/2000	526A0F0E7B		256	---	---	NR
4/23/1999		9/28/2000	526D1D121D		211	---	---	NR
4/23/1999		9/29/2000	5275033262		275	---	---	NR
4/24/1999		9/14/2000	526966104B		223	---	---	NR
4/24/1999		10/3/2000	526B504D54		232	---	---	NR
4/25/1999		8/18/2000	526A1D7C40		268	---	---	NR
4/25/1999		9/13/2000	5276133607		233	---	---	NR
4/25/1999		9/16/2000	525F745F0C		192	---	---	NR
4/25/1999	9/3/2000	9/18/2000	526433425F		246	---	---	NR
4/25/1999	7/26/2000	10/5/2000	525F416D26		213	---	---	NR
4/25/1999		10/6/2000	5271160237		208	---	---	NR
4/25/1999		10/8/2000	526B5C5414		221	---	---	NR
4/25/1999	8/16/2000	10/14/2000	526B254029		261	---	---	NR
4/27/1999		7/19/2000	526C3B1A43		222	---	---	NR
4/27/1999		8/8/2000	52701A7038		193	---	---	NR
4/27/1999		9/21/2000	5276273A2C		213	---	---	NR
4/27/1999		9/25/2000	526B7C355A		193	---	---	NR
4/27/1999	8/9/2000	9/26/2000	527047015D		240	---	---	NR
4/27/1999		9/29/2000	526B586B2E		---	---	---	NR
4/27/1999		9/30/2000	526C440653		258	---	---	NR
4/27/1999		10/9/2000	52714E6A51		229	---	---	NR
4/28/1999		9/1/2000	526D1D5569		264	---	---	NR
4/28/1999		9/24/2000	52695F5410		244	---	---	NR
4/29/1999		8/27/2000	527375631C		213	---	---	NR
4/29/1999	9/14/2000	10/9/2000	524B687F42		206	---	---	NR
4/30/1999		9/17/2000	5304503337		220	---	---	NR
4/30/1999		9/25/2000	53012A7572		198	---	---	NR
4/30/1999	8/10/2000	9/26/2000	5302082869		259	---	---	NR
4/30/1999		10/12/2000	52641E3114		200	---	---	NR
5/1/1999		8/12/2000	5277301D55		187	---	---	NR
5/1/1999	7/30/2000	9/7/2000	526F580443		216	---	---	NR
5/1/1999		9/19/2000	5269623270		223	---	---	NR
5/1/1999		9/22/2000	524F7E7A20		221	---	---	NR
5/1/1999		9/24/2000	5275554034		222	---	---	NR
5/1/1999		9/26/2000	52753F512F		227	---	---	NR
5/1/1999		9/28/2000	5250030B31		260	---	---	NR
5/2/1999		9/15/2000	5301702548		228	---	---	NR
5/2/1999	7/18/2000	9/24/2000	527463445A		260	---	---	NR
5/2/1999		9/26/2000	526B262866		259	---	---	NR
5/3/1999		8/14/2000	52751A4249		233	---	---	NR
5/3/1999		9/23/2000	5273374E66		224	---	---	NR



Appendix Table 14. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/3/1999		9/24/2000	527147464D		230	---	---	NR
5/3/1999		9/26/2000	5273545B24		233	---	---	NR
5/3/1999		9/28/2000	5274744A21		238	---	---	NR
5/3/1999		10/1/2000	527569340A		202	---	---	NR
5/3/1999		10/13/2000	5275024272		240	---	---	NR
5/4/1999		8/18/2000	5300283F7A		221	---	---	NR
5/4/1999		9/13/2000	53005D5744		215	---	---	NR
5/4/1999		9/18/2000	5300625717		242	---	---	NR
5/4/1999		10/14/2000	5274700943		225	---	---	NR
5/5/1999		9/10/2000	525F437F0B		252	---	---	NR
5/5/1999		9/11/2000	5262016D20		211	---	---	NR
5/5/1999		9/12/2000	52722D4953		226	---	---	NR
5/5/1999		9/23/2000	526152092D		208	---	---	NR
5/5/1999		9/27/2000	525F761F12		226	---	---	NR
5/5/1999	9/13/2000	9/28/2000	5272354B5C		213	---	---	NR
5/5/1999	9/24/2000	10/9/2000	526237273B		248	---	---	NR
5/5/1999		10/15/2000	52761A0C4B		245	---	---	NR
5/6/1999	7/28/2000	8/16/2000	5300656402		213	---	---	NR
5/6/1999		10/4/2000	526D496E44		200	---	---	NR
5/6/1999		10/7/2000	5264295744		254	---	---	NR
5/6/1999		10/11/2000	525F464F6E		234	---	---	NR
5/6/1999		10/14/2000	52607B0541		253	---	---	NR
5/7/1999	7/29/2000	9/10/2000	526B55350E		241	---	---	NR
5/7/1999		9/13/2000	526E2A5164		224	---	---	NR
5/7/1999		9/18/2000	526D41753C		240	---	---	NR
5/7/1999	9/2/2000	9/20/2000	526E26030C		243	---	---	NR
5/7/1999	8/15/2000	9/23/2000	526E1B6B04		249	---	---	NR
5/7/1999		10/14/2000	53052C170B		236	---	---	NR
5/8/1999	7/26/2000	8/15/2000	5276152B6D		254	---	---	NR
5/8/1999		9/9/2000	53052D6638		275	---	---	NR
5/8/1999		9/23/2000	5264324651		242	---	---	NR
5/8/1999		9/28/2000	526236260C		195	---	---	NR
5/9/1999	8/3/2000	9/1/2000	52733C7174		278	---	---	NR
5/9/1999		9/9/2000	5266360918		222	---	---	NR
5/9/1999		9/11/2000	52733A5425		253	---	---	NR
5/9/1999		9/30/2000	526E1E0320		205	---	---	NR
5/9/1999		10/14/2000	527351090F		266	---	---	NR
5/9/1999		10/15/2000	52655C3C09		230	---	---	NR
5/11/1999		9/10/2000	526534731A		231	---	---	NR
5/11/1999		9/20/2000	53050B414A		264	---	---	NR
5/11/1999		9/23/2000	52615A447C		252	---	---	NR
5/11/1999		9/25/2000	526135332B		266	---	---	NR
5/11/1999		9/25/2000	5265297C72		267	---	---	NR
5/11/1999		9/25/2000	5261643332		230	---	---	NR
5/12/1999		7/26/2000	5303245F48		222	---	---	NR
5/12/1999		9/6/2000	5303371146		250	---	---	NR
5/12/1999	8/11/2000	9/9/2000	53032F7941		256	---	---	NR
5/12/1999		9/29/2000	5263132F02		254	---	---	NR
5/12/1999		10/7/2000	52772A354C		156	---	---	NR
5/12/1999		10/11/2000	5302683E4F		253	---	---	NR
5/13/1999		9/7/2000	5278466523		237	---	---	NR
5/13/1999		9/21/2000	52781B305F		195	---	---	NR
5/13/1999		9/25/2000	5277120C78		204	---	---	NR
5/14/1999		8/27/2000	53050D670C		224	---	---	NR
5/14/1999		9/1/2000	53021C450C		239	---	---	NR

Appendix Table 14. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/14/1999		9/1/2000	52782F4436		242	---	---	NR
5/14/1999		9/4/2000	5302576E1B		266	---	---	NR
5/14/1999		9/11/2000	5302527C49		235	---	---	NR
5/14/1999		9/13/2000	5302545653		245	---	---	NR
5/14/1999		9/18/2000	526D3E7D48		237	---	---	NR
5/14/1999		9/19/2000	52713E0277		220	---	---	NR
5/14/1999		9/25/2000	5278556960		278	---	---	NR
5/14/1999		9/27/2000	5302484872		214	---	---	NR
5/14/1999		9/28/2000	5278275231		202	---	---	NR
5/14/1999		10/8/2000	52782F6F64		202	---	---	NR
5/14/1999		10/9/2000	5304635448		201	---	---	NR
5/14/1999		10/15/2000	5277055B61		246	---	---	NR
5/15/1999		9/10/2000	53011F5512		253	---	---	NR
5/15/1999	8/27/2000	9/13/2000	5302632D02		214	---	---	NR
5/15/1999	9/1/2000	9/25/2000	53011C143B		240	---	---	NR
5/15/1999	9/10/2000	9/25/2000	5304134870		235	---	---	NR
5/15/1999		9/26/2000	53027E2E36		239	---	---	NR
5/15/1999		9/27/2000	53053D7F4F		214	---	---	NR
5/15/1999	8/8/2000	9/30/2000	52767A1A6D		210	---	---	NR
5/15/1999		10/1/2000	53041B7406		253	---	---	NR
5/15/1999		10/5/2000	5303322E68		242	---	---	NR
5/15/1999		10/6/2000	5278526A08		271	---	---	NR
5/18/1999		8/19/2000	52771D3914		266	---	---	NR
5/18/1999		9/7/2000	53042D6468		239	---	---	NR
5/18/1999		9/14/2000	5303374D1D		222	---	---	NR
5/18/1999	9/2/2000	9/15/2000	5278261E00		249	---	---	NR
5/18/1999		9/16/2000	5303056770		211	---	---	NR
5/18/1999		9/16/2000	5277094136		195	---	---	NR
5/18/1999		9/19/2000	5303531A6D		232	---	---	NR
5/18/1999		10/5/2000	5305400B04		209	---	---	NR
5/18/1999		10/9/2000	52783D2B0C		252	---	---	NR
5/18/1999		10/9/2000	5303321B2C		235	---	---	NR
5/19/1999		8/3/2000	5304051618		204	---	---	NR
5/19/1999		9/5/2000	5302040C2B		230	---	---	NR
5/19/1999		10/11/2000	53026F617C		214	---	---	NR
5/20/1999		9/1/2000	5304312612		180	---	---	NR
5/20/1999		9/15/2000	5304033E36		259	---	---	NR
5/20/1999	8/15/2000	9/22/2000	53053B725B		155	---	---	NR
5/20/1999		9/24/2000	5304376D51		232	---	---	NR
5/20/1999		9/29/2000	525F354741		200	---	---	NR
5/20/1999		10/6/2000	5303030476		223	---	---	NR
5/20/1999		10/15/2000	53020C434E		238	---	---	NR
5/20/1999		10/15/2000	5278493C69		166	---	---	NR
5/21/1999		8/21/2000	5250012C58		236	---	---	NR
5/21/1999		8/23/2000	53027C0503		200	---	---	NR
5/21/1999		9/18/2000	53021B3D31		189	---	---	NR
5/21/1999		9/22/2000	5250062158		264	---	---	NR
5/21/1999	9/14/2000	10/3/2000	530029505F		239	---	---	NR
5/21/1999		10/8/2000	53006D2953		235	---	---	NR
5/21/1999	9/29/2000	10/14/2000	530169226A		226	---	---	NR
5/22/1999		9/9/2000	53036E333F		234	---	---	NR
5/22/1999		9/14/2000	5104013030		198	---	---	NR
5/22/1999	8/6/2000	9/18/2000	5103772070		244	---	---	NR

Appendix Table 14. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/22/1999		9/21/2000	53036B1033		231	---	---	NR
5/22/1999		9/23/2000	530222023F		263	---	---	NR
5/22/1999		10/3/2000	5264230D01		223	---	---	NR
5/22/1999		10/5/2000	51010E2818		238	---	---	NR
5/26/1999		9/7/2000	510379142B		190	---	---	NR
5/26/1999	8/21/2000	9/10/2000	507F186259		242	---	---	NR
5/26/1999		9/23/2000	5100616B4C		212	---	---	NR
5/26/1999	8/3/2000	9/29/2000	5301323627		224	---	---	NR
5/26/1999		10/6/2000	507F4D1F37		234	---	---	NR
5/26/1999		10/8/2000	5101137F31		277	---	---	NR
5/26/1999		10/14/2000	524B743273		245	---	---	NR
5/26/1999		10/14/2000	51037D066D		235	---	---	NR
5/27/1999		9/6/2000	22302D732E		218	---	---	NR
5/27/1999		9/16/2000	51005E773D		179	---	---	NR
5/27/1999		9/18/2000	5101097E4E		255	---	---	NR
5/27/1999		10/1/2000	5303740E61		235	---	---	NR
5/27/1999		10/3/2000	510242396C		238	---	---	NR
5/27/1999	9/28/2000	10/15/2000	2230316B21		224	---	---	NR
6/5/1999		9/10/2000	516B4C0238		289	---	---	NR
6/5/1999		9/13/2000	53013F1E2D		225	---	---	NR
6/5/1999		10/2/2000	53013C2E23		224	---	---	NR
6/19/1999		10/11/2000	5103765826		253	---	---	NR
6/21/1999		10/15/2000	22306F166B		292	---	---	NR

Total adult returns:

1-ocean	179
2-ocean	NA
3-ocean	NA

<sup>a</sup> Upstream recoveries of 1-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 14.1. Total hatchery adult returns to Lower Granite Dam from steelhead smolts tagged as transport fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
4/6/1999		10/13/2000	511D175E6D		231	---	---	NR
4/20/1999		10/5/2000	526E546F57		276	---	---	NR
4/22/1999		9/24/2000	52703F5A46		203	---	---	NR
4/23/1999		9/15/2000	511E264841		275	---	---	NR
4/23/1999	8/5/2000	9/23/2000	5270376C42		254	---	---	NR
4/23/1999		9/28/2000	526D1D121D		211	---	---	NR
4/24/1999		9/14/2000	526966104B		223	---	---	NR
4/24/1999		10/3/2000	526B504D54		232	---	---	NR
4/25/1999		8/18/2000	526A1D7C40		268	---	---	NR
4/25/1999		9/13/2000	5276133607		233	---	---	NR
4/25/1999		9/16/2000	525F745F0C		192	---	---	NR
4/25/1999		10/6/2000	5271160237		208	---	---	NR
4/25/1999		10/8/2000	526B5C5414		221	---	---	NR
4/25/1999	8/16/2000	10/14/2000	526B254029		261	---	---	NR
4/27/1999	8/9/2000	9/26/2000	527047015D		240	---	---	NR
4/27/1999		9/29/2000	526B586B2E		---	---	---	NR
4/27/1999		9/30/2000	526C440653		258	---	---	NR
4/27/1999		10/9/2000	52714E6A51		229	---	---	NR
4/28/1999		9/1/2000	526D1D5569		264	---	---	NR
4/28/1999		9/24/2000	52695F5410		244	---	---	NR
4/29/1999	9/14/2000	10/9/2000	524B687F42		206	---	---	NR
4/30/1999		9/17/2000	5304503337		220	---	---	NR
4/30/1999		9/25/2000	53012A7572		198	---	---	NR
4/30/1999	8/10/2000	9/26/2000	5302082869		259	---	---	NR
4/30/1999		10/12/2000	52641E3114		200	---	---	NR
5/1/1999	7/30/2000	9/7/2000	526F580443		216	---	---	NR
5/1/1999		9/19/2000	5269623270		223	---	---	NR
5/1/1999		9/22/2000	524F7E7A20		221	---	---	NR
5/1/1999		9/24/2000	5275554034		222	---	---	NR
5/1/1999		9/26/2000	52753F512F		227	---	---	NR
5/1/1999		9/28/2000	5250030B31		260	---	---	NR
5/2/1999		9/15/2000	5301702548		228	---	---	NR
5/2/1999	7/18/2000	9/24/2000	527463445A		260	---	---	NR
5/2/1999		9/26/2000	526B262866		259	---	---	NR
5/3/1999		8/14/2000	52751A4249		233	---	---	NR
5/3/1999		9/23/2000	5273374E66		224	---	---	NR
5/3/1999		9/24/2000	527147464D		230	---	---	NR
5/3/1999		9/26/2000	5273545B24		233	---	---	NR
5/3/1999		9/28/2000	5274744A21		238	---	---	NR
5/3/1999		10/1/2000	527569340A		202	---	---	NR
5/3/1999		10/13/2000	5275024272		240	---	---	NR
5/4/1999		8/18/2000	5300283F7A		221	---	---	NR
5/4/1999		9/13/2000	53005D5744		215	---	---	NR
5/4/1999		9/18/2000	5300625717		242	---	---	NR
5/4/1999		10/14/2000	5274700943		225	---	---	NR
5/5/1999		9/10/2000	525F437F0B		252	---	---	NR
5/5/1999		9/11/2000	5262016D20		211	---	---	NR
5/5/1999		9/12/2000	52722D4953		226	---	---	NR
5/5/1999		9/23/2000	526152092D		208	---	---	NR
5/5/1999		9/27/2000	525F761F12		226	---	---	NR
5/5/1999	9/13/2000	9/28/2000	5272354B5C		213	---	---	NR

Appendix Table 14.1. Continued.



Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/5/1999	9/24/2000	10/9/2000	526237273B		248	---	---	NR
5/5/1999		10/15/2000	52761A0C4B		245	---	---	NR
5/6/1999	7/28/2000	8/16/2000	5300656402		213	---	---	NR
5/6/1999		10/4/2000	526D496E44		200	---	---	NR
5/6/1999		10/7/2000	5264295744		254	---	---	NR
5/6/1999		10/11/2000	525F464F6E		234	---	---	NR
5/6/1999		10/14/2000	52607B0541		253	---	---	NR
5/7/1999	7/29/2000	9/10/2000	526B55350E		241	---	---	NR
5/7/1999		9/13/2000	526E2A5164		224	---	---	NR
5/7/1999		9/18/2000	526D41753C		240	---	---	NR
5/7/1999	9/2/2000	9/20/2000	526E26030C		243	---	---	NR
5/7/1999	8/15/2000	9/23/2000	526E1B6B04		249	---	---	NR
5/7/1999		10/14/2000	53052C170B		236	---	---	NR
5/8/1999	7/26/2000	8/15/2000	5276152B6D		254	---	---	NR
5/8/1999		9/9/2000	53052D6638		275	---	---	NR
5/8/1999		9/23/2000	5264324651		242	---	---	NR
5/9/1999	8/3/2000	9/1/2000	52733C7174		278	---	---	NR
5/9/1999		9/9/2000	5266360918		222	---	---	NR
5/9/1999		9/11/2000	52733A5425		253	---	---	NR
5/9/1999		9/30/2000	526E1E0320		205	---	---	NR
5/9/1999		10/14/2000	527351090F		266	---	---	NR
5/9/1999		10/15/2000	52655C3C09		230	---	---	NR
5/11/1999		9/10/2000	526534731A		231	---	---	NR
5/11/1999		9/20/2000	53050B414A		264	---	---	NR
5/11/1999		9/23/2000	52615A447C		252	---	---	NR
5/11/1999		9/25/2000	526135332B		266	---	---	NR
5/11/1999		9/25/2000	5261643332		230	---	---	NR
5/11/1999		9/25/2000	5265297C72		267	---	---	NR
5/12/1999		9/6/2000	5303371146		250	---	---	NR
5/12/1999	8/11/2000	9/9/2000	53032F7941		256	---	---	NR
5/12/1999		9/29/2000	5263132F02		254	---	---	NR
5/12/1999		10/11/2000	5302683E4F		253	---	---	NR
5/13/1999		9/7/2000	5278466523		237	---	---	NR
5/13/1999		9/21/2000	52781B305F		195	---	---	NR
5/14/1999		8/27/2000	53050D670C		224	---	---	NR
5/14/1999		9/1/2000	53021C450C		239	---	---	NR
5/14/1999		9/1/2000	52782F4436		242	---	---	NR
5/14/1999		9/4/2000	5302576E1B		266	---	---	NR
5/14/1999		9/11/2000	5302527C49		235	---	---	NR
5/14/1999		9/13/2000	5302545653		245	---	---	NR
5/14/1999		9/18/2000	526D3E7D48		237	---	---	NR
5/14/1999		9/19/2000	52713E0277		220	---	---	NR
5/14/1999		9/25/2000	5278556960		278	---	---	NR
5/14/1999		9/27/2000	5302484872		214	---	---	NR
5/14/1999		10/8/2000	52782F6F64		202	---	---	NR
5/14/1999		10/9/2000	5304635448		201	---	---	NR
5/14/1999		10/15/2000	5277055B61		246	---	---	NR
5/15/1999		9/10/2000	53011F5512		253	---	---	NR
5/15/1999	8/27/2000	9/13/2000	5302632D02		214	---	---	NR
5/15/1999	9/1/2000	9/25/2000	53011C143B		240	---	---	NR
5/15/1999	9/10/2000	9/25/2000	5304134870		235	---	---	NR
5/15/1999		9/26/2000	53027E2E36		239	---	---	NR
5/15/1999		9/27/2000	53053D7F4F		214	---	---	NR

Appendix Table 14.1. Continued.

Smolt release date	Adult return date		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
5/15/1999	8/8/2000	9/30/2000	52767A1A6D		210	---	---	NR
5/15/1999		10/1/2000	53041B7406		253	---	---	NR
5/15/1999		10/5/2000	5303322E68		242	---	---	NR
5/15/1999		10/6/2000	5278526A08		271	---	---	NR
5/18/1999		8/19/2000	52771D3914		266	---	---	NR
5/18/1999		9/7/2000	53042D6468		239	---	---	NR
5/18/1999		9/14/2000	5303374D1D		222	---	---	NR
5/18/1999	9/2/2000	9/15/2000	5278261E00		249	---	---	NR
5/18/1999		9/16/2000	5303056770		211	---	---	NR
5/18/1999		10/9/2000	5303321B2C		235	---	---	NR
5/18/1999		10/9/2000	52783D2B0C		252	---	---	NR
5/19/1999		9/5/2000	5302040C2B		230	---	---	NR
5/19/1999		10/11/2000	53026F617C		214	---	---	NR
5/20/1999		9/15/2000	5304033E36		259	---	---	NR
5/20/1999		9/24/2000	5304376D51		232	---	---	NR
5/20/1999		9/29/2000	525F354741		200	---	---	NR
5/20/1999		10/6/2000	5303030476		223	---	---	NR
5/20/1999		10/15/2000	53020C434E		238	---	---	NR
5/21/1999		8/21/2000	5250012C58		236	---	---	NR
5/21/1999		9/18/2000	53021B3D31		189	---	---	NR
5/21/1999		9/22/2000	5250062158		264	---	---	NR
5/21/1999	9/14/2000	10/3/2000	530029505F		239	---	---	NR
5/21/1999		10/8/2000	53006D2953		235	---	---	NR
5/22/1999		9/9/2000	53036E333F		234	---	---	NR
5/22/1999		9/14/2000	5104013030		198	---	---	NR
5/22/1999	8/6/2000	9/18/2000	5103772070		244	---	---	NR
5/22/1999		9/21/2000	53036B1033		231	---	---	NR
5/22/1999		9/23/2000	530222023F		263	---	---	NR
5/22/1999		10/3/2000	5264230D01		223	---	---	NR
5/22/1999		10/5/2000	51010E2818		238	---	---	NR
5/26/1999	8/21/2000	9/10/2000	507F186259		242	---	---	NR
5/26/1999		9/23/2000	5100616B4C		212	---	---	NR
5/26/1999	8/3/2000	9/29/2000	5301323627		224	---	---	NR
5/26/1999		10/6/2000	507F4D1F37		234	---	---	NR
5/26/1999		10/8/2000	5101137F31		277	---	---	NR
5/26/1999		10/14/2000	51037D066D		235	---	---	NR
5/26/1999		10/14/2000	524B743273		245	---	---	NR
5/27/1999		9/6/2000	22302D732E		218	---	---	NR
5/27/1999		9/18/2000	5101097E4E		255	---	---	NR
5/27/1999		10/1/2000	5303740E61		235	---	---	NR
5/27/1999		10/3/2000	510242396C		238	---	---	NR
5/27/1999	9/28/2000	10/15/2000	2230316B21		224	---	---	NR
6/5/1999		9/10/2000	516B4C0238		289	---	---	NR
6/5/1999		9/13/2000	53013F1E2D		225	---	---	NR
6/5/1999		10/2/2000	53013C2E23		224	---	---	NR
6/19/1999		10/11/2000	5103765826		253	---	---	NR
6/21/1999		10/15/2000	22306F166B		292	---	---	NR
Total adult returns: 1-ocean, 151; 2-ocean, NA; 3-ocean, NA								

<sup>a</sup> Upstream recoveries of 1-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.

Appendix Table 14.2. Total wild adult returns to Lower Granite Dam from steelhead smolts tagged as transport fish at Lower Granite Dam in spring 1999. 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		PIT-tag code	Inriver controls	Length		Upstream adult recovery	
	Bonn	LGR			At smolt tagging (mm)	At adult return (mm)	Date	Location
3/31/1999		10/1/2000	511D05465E		232	---	---	NR
4/22/1999	7/30/2000	9/26/2000	52753C5772		293	---	---	NR
4/23/1999		9/25/2000	526A0F0E7B		256	---	---	NR
4/23/1999		9/29/2000	5275033262		275	---	---	NR
4/25/1999	9/3/2000	9/18/2000	526433425F		246	---	---	NR
4/25/1999	7/26/2000	10/5/2000	525F416D26		213	---	---	NR
4/27/1999		7/19/2000	526C3B1A43		222	---	---	NR
4/27/1999		8/8/2000	52701A7038		193	---	---	NR
4/27/1999		9/21/2000	5276273A2C		213	---	---	NR
4/27/1999		9/25/2000	526B7C355A		193	---	---	NR
4/29/1999		8/27/2000	527375631C		213	---	---	NR
5/1/1999		8/12/2000	5277301D55		187	---	---	NR
5/8/1999		9/28/2000	526236260C		195	---	---	NR
5/12/1999		7/26/2000	5303245F48		222	---	---	NR
5/12/1999		10/7/2000	52772A354C		156	---	---	NR
5/13/1999		9/25/2000	5277120C78		204	---	---	NR
5/14/1999		9/28/2000	5278275231		202	---	---	NR
5/18/1999		9/16/2000	5277094136		195	---	---	NR
5/18/1999		9/19/2000	5303531A6D		232	---	---	NR
5/18/1999		10/5/2000	5305400B04		209	---	---	NR
5/19/1999		8/3/2000	5304051618		204	---	---	NR
5/20/1999		9/1/2000	5304312612		180	---	---	NR
5/20/1999	8/15/2000	9/22/2000	53053B725B		155	---	---	NR
5/20/1999		10/15/2000	5278493C69		166	---	---	NR
5/21/1999		8/23/2000	53027C0503		200	---	---	NR
5/21/1999	9/29/2000	10/14/2000	530169226A		226	---	---	NR
5/26/1999		9/7/2000	510379142B		190	---	---	NR
5/27/1999		9/16/2000	51005E773D		179	---	---	NR

Total adult returns:

1-ocean	28
2-ocean	NA
3-ocean	NA

<sup>a</sup> Upstream recoveries of 1-ocean adults returning in 2000 were incomplete at the time this document was published.

<sup>b</sup> Recovery location abbreviations: NR = Not recovered.