Evaluation of Transportation of Juvenile Salmonids and Related Research on the Columbia and Snake Rivers, 1987

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COASTAL ZONE AND ESTUARINE STUDIES

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INTRODUCTION

In 1987, the National Marine Fisheries Service (NMFS) under contract to the U.S. Army Corps of Engineers (COE) continued to evaluate the effects of collection and transportation on juvenile salmonids at dams on the Columbia and Snake rivers. The research had the following main objectives: 1) continue the recovery of adult salmonids tagged as juveniles at McNary and Lower Granite dams for transport research and index purposes, 2) mark transport and control groups of spring/summer chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Salmo gairdneri*) at Lower Granite Dam and spring/summer and fall chinook salmon at McNary Dam to provide up-to-date information on the benefits of smolt transportation, and 3) measure the daily incidence and severity of bacterial kidney disease (BKD) infections caused by *Renibacterium salmoninarum* in spring/summer chinook salmon smolts collected at Lower Granite Dam. Even though Objective 3 was not performed under formal contract with the COE, it seemed appropriate to include the data in this report because there is evidence that BKD is the major cause for the overall minimal response of hatchery spring/summer chinook salmon including the minimal response to transportation (Park et al. 1986).

This report is divided into three major sections corresponding to the main objectives of the research: 1) recovery of adult salmon and steelhead, study years 1978-85; 2) transportation studies, Lower Granite and McNary dams; and 3) incidence of BKD in spring/summer chinook salmon at Lower Granite Dam, 1987. In addition, all data summarized or referred to in the text are included in Appendix Tables 1 through 31.

RECOVERY OF ADULT SALMON AND STEELHEAD, STUDY YEARS 1978-85

Introduction

Recovery of adult salmonids previously tagged as juveniles for transport evaluation and index purposes continued in 1987. The recoveries included fall chinook salmon originating from studies at McNary Dam in 1983 (part of the study years 1978-83) and spring/summer chinook salmon and steelhead originating from barge transport index marking at Lower Granite Dam in 1983-85 and 1984-85, respectively.

Methods

Fall chinook salmon originating from the studies at McNary Dam were recovered from ocean and river fisheries, at hatcheries, and on the spawning grounds. Adults from the barge index studies in 1983-85 were recovered from the adult trap at Lower Granite Dam, at upstream hatcheries, and on the spawning grounds. Recoveries from Columbia River traps were based on brand reading (no fish were sacrificed); all other recoveries were based on reading extracted CWTs from dead fish. [See Park (1981) for details on adult trapping facilities at dams.] All data reported herein are observed and not expanded or estimated numbers.

Results and Discussion

Fall Chinook Salmon-McNary Dam, 1978-83

Adult returns for fall chinook salmon transportation tests conducted at McNary Dam from 1978 through 1983 are complete. A final total of 3,798 fish were observed (recovered) from these studies (Table 1 and Appendix Tables 7-17: Data for 1978 has been archived, please see Matthews et al. 1985 for recovery

Table 1. Number of fall chinook salmon recovered (observed) by study year and area of recovery from 1978–83.

Area[a/]	1978	1979	1980	1981	1982	1983	Total	% of Grand total
River system traps	173	137	171	234	143	224	1082	28.5
Ocean fisheries								
Alaska	113	273	195	158	59	116	914	24.1
British Col.	73	112	113	127	54	99	578	15.2
Washington	5	11	15	3	2	6	42	1.1
Oregon	2	1	1	2	0	4	10	0.3
California	0	0	0	0	1	0	1	nil
Other	0	0	1	0	0	2	3	0.1
Col. River sport + comm.	36	35	27	62	42	35	237	6.2
Tribal net (Col. R.)	36	48	93	95	77	103	452	11.9
Hatcheries, spawning grounds	66	154	117	92	20	30	479	12.6
						Grand total	3,798	100.0

a/ Recoveries at river system traps were based upon brand reading. All other recoveries were based upon coded wire tags.

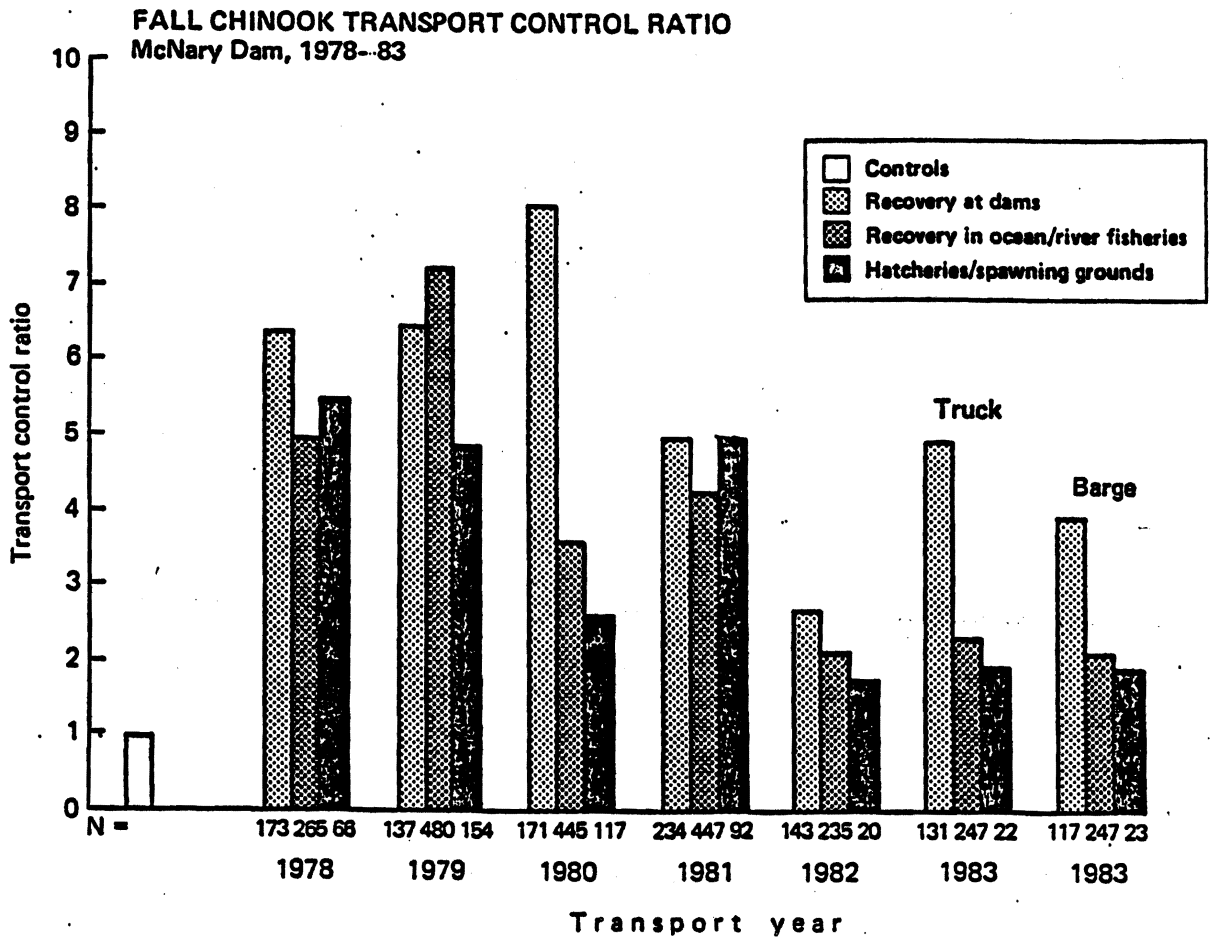

Figure 1.--Transport/control ratios for McNary Dam truck transportation tests with fall chinook salmon, 1978-83 (includes barge test group for 1983).

data for 1978 releases). The combined fisheries (ocean, Columbia River sport and commercial, and treaty gill-net) provided 58.9% of all returns. River system traps at dams and hatcheries/spawning grounds provided 28.5 and 12.6%, respectively. Returns to the traps were identified by brand whereas all others were identified by reading the extracted CWT.

The transport benefit ratios (TBRs) for all study years and recovery areas are presented in Figure 1. A TBR of more than 2.0:1 was realized for each year the data were analyzed regardless of transport mode or area of recovery. Contingency table analysis (G-statistic) indicated significantly more transported than non-transported fish were recovered in all years ($P < 0.01$ df=1).

The TBRs for 1982 and 1983 were lower than for the previous years of the study. One factor that would contribute to a lower TBR is increased in-river survival. The overall return rates of controls for 1978-83 were 0.201, 0.081, 0.182, 0.343, 0.323, and 0.273%. While these values are not sufficient to demonstrate absolute trends, they suggest that inriver passage conditions may have improved since 1980 resulting in the correspondingly lower TBRs in the later study years.

The consistently positive and statistically significant TBRs demonstrated throughout this study lead us to conclude that transportation of fall chinook salmon from McNary Dam increases the number of returning adults to the offshore fisheries and to the Columbia River. The latter has been beneficial to treaty and non-treaty fishermen alike, and participants in fisheries in Alaska and British Columbia have benefitted from increased availability of fish in the ocean.

During the 1982-83 study years, fall chinook salmon were marked with distinctive CWTs to identify early, middle, and late migrants. The number of

smolts marked during each segment and the number of adult returns realized for the 2-year comparison are shown in Table 2. In 1982, the returns of controls were uniform among each segment whereas the returns of trucked fish were variable. The return of trucked fish was three to four times higher during the late segment than during the early and middle segments. The TBRs ranged from 0.92: to 4.62:1. In 1983, the TBRs were more consistent, ranging from 2.04: to 5.01:1 and 1.64 to 4.23:1 for trucked and barged fish, respectively.

During 1982, daily river flow averaged 409, 282, and 194 Kcfs at McNary Dam in the early, middle, and late phases, respectively (Matthews et al. 1987). With the relatively excellent flow during the early phase, the return of the in-river control group was 0.323% compared to only a 0.251% return rate for the control group released in the late phase when flows averaged less than half what they averaged during the early phase. As we mentioned in last year's report however, other factors in addition to flow (e.g., water temperature, migrational characteristics of different stocks, and predation) likely exert influence on the survival of juvenile fall chinook salmon migrating in-river below McNary Dam.

Spring/Summer Chinook Salmon and Steelhead--Lower Granite Dam

Table 3 summarizes and Appendix Tables 18 through 22 list total-to-date returns of spring/summer chinook salmon and steelhead marked in 1983-85 and 1984-85, respectively, to index the relative success of the barge transportation program at Lower Granite Dam. The TBRs cannot be calculated since no in-river controls of either species were marked and released.

Returns of spring/summer chinook salmon marked in 1983 and 1984 are complete. A total of 125 adults (0.28%) from the 1983 release and 75 adults (0.16%) from the 1984 release were observed at Lower Granite Dam between 1984

Table 2.--Number of fall chinook salmon smolts released as controls or transported in 1982-83 during early, middle, and late segment of their seaward migration at McNary Dam. Adults were recovered from all sampling sources in 1982-1987.

Year and segment	Control			Test (truck or barge)			Test/control ratio	"G" statistic and (probability)
	Number of smolts released	Adults recovered No.	Adults recovered %	Number of smolts released	Adults recovered No.	Adults recovered %		
1982					**TRUCK**			
Early - 24 June-2 Jul	8,667	28	0.323	5,381	16	0.297	0.92:1	G=0.07 (P=0.79)
Middle - 6-22 Jul	18,864	62	0.329	18,787	84	0.447	1.36:1	G=3.43 (P=0.06)
Late - 26 Jul-6 Aug	11,152	28	0.251	15,525	180	1.159	4.62:1	G=79.91 (P<0.001)
Totals	38,683	118	0.305	39,693	280	0.705	2.31:1	G=64.10 (P<0.001)
1983					**TRUCK**			
Early - 8-16 Jul	15,010	62	0.413	15,096	127	0.841	2.04:1	G=22.59 (P<0.001)
Middle - 18-27 Jul	14,690	26	0.177	13,973	124	0.887	5.01:1	G=74.97 (P<0.001)
Late - 28 Jul-8 Aug	10,601	22	0.208	6,210	39	0.628	3.02:1	G=18.27 (P<0.001)
Totals	40,301	110	0.273	35,279	290	0.882	3.23:1	G=110.28 (P<0.001)
1983					**BARGE**			
Early - 8-16 Jul				15,040	102	0.678	1.64:1	G=9.82 (P=0.002)
Middle - 18-27 Jul				15,230	114	0.749	4.23:1	G=56.81 (P<0.001)
Late - 28 Jul-8 Aug				8,590	61	0.710	2.41:1	G=28.31 (P<0.001)
Totals				38,860	277	0.713	2.61:1	G=81.08 (P<0.001)

Table 3.—Numbers and percentages of adult spring/summer chinook salmon and steelhead returning to Lower Granite Dam from barge transport index groups 1983-85.

Release year	No. released	Observed return				
		1-ocean	2-ocean	3-ocean	Total	%
			Spring/summer chinook salmon			
1983	44,648	10	99	16	125	0.28
1984	46,173	11	40	24	75	0.16
1985	45,420	11	52	-	63	-
			Steelhead			
1984	33,529	263	388	9	660	2.0
1985	30,041	216	120	-	336	-

and 1987. While still low, the observed returns for the 1983 and 1984 transport groups are 7 and 4 times higher, respectively, than the average observed returns for all transported groups of this species from 1976 through 1980 (Park 1985).

The observed return of 52 2-ocean age spring/summer chinook salmon marked in 1985 suggests that the total return for this group will fall between the numbers returning from the 1983 and 1984 groups. Final returns for the 1985 group are expected in the spring of 1988.

It is unfortunate that marked fish are not returning to the hatcheries upstream from Lower Granite Dam in sufficient numbers to provide reliable expansion calculations for estimating total returns to the dam. Of the 263 fish observed at the dam from 1984 through 1987 (all of which were marked with jaw tags), only 53 were recovered in all of the hatcheries combined. This implies that the adult population returning from these releases is composed primarily of wild fish. This is in spite of the fact that hatchery fish predominated in the smolt populations during marking. Even if the remaining adults are not all wild fish and mortality and straying are relatively high, the rate of return of wild fish must still be much higher than for their hatchery counterparts after they are transported as smolts. For example, if we double the number that returned to the hatchery, then 157 or 60.0% of the observed returns would still have been destined for wild spawning areas. Since we estimate conservatively that 80.0-90.0% of the smolt population consisted of hatchery fish at the time of marking, it appears that transported wild fish may be returning at a rate 6-14 times higher than their hatchery counterparts. These estimated returns would be consistent with those reported by Ebel et al. (1973) when wild stocks predominated in the smolt outmigrations during transport studies.

Observed returns to Lower Granite Dam of steelhead tagged in 1984-85 continue to be very strong. To date, we have recovered 2.0% of the fish

released in 1984 with final returns yet to be recovered in spring 1988. Observed returns of 1-ocean age steelhead tagged in 1985 and recovered in 1986 indicated this trend should continue. However, returns in the fall of 1987 of 2-and 3-ocean age steelhead from these release groups were much lower than anticipated. We believe delay and mortality associated with extremely low river flows last summer and fall are the major negative factors contributing to the lower than expected recoveries of these fish. We anticipate higher than usual recoveries of these age classes at Lower Granite Dam in the spring of 1988.

TRANSPORTATION STUDIES, LOWER GRANITE AND MCNARY DAMS

Introduction

From 1968 to 1980, numerous smolt transportation studies were conducted at Snake River and Columbia River dams operated by the COE (Park 1985). Results of these studies were very encouraging for fall chinook salmon and steelhead in all study years, but marginal at best for spring/summer chinook salmon since 1975. Based on results from 1968 to 1975, mass transportation of smolts around dams has been used in varying degrees, depending upon prevailing environmental conditions, as a management option to enhance survival of downstream migrating juvenile salmonids.

In 1983, we began marking smolts at Lower Granite Dam to index the relative success of the barge transportation program conducted annually by the COE (no paired control groups were marked). Recent returns (included in this report) of adult spring/summer chinook salmon and steelhead indicate that survival of transported smolts improved considerably compared to returns from the 1976-80 study years. We believe a combination of factors including, but not limited to, major improvements in the transport collection facilities, improved fish quality

at upstream hatcheries, and greatly improved handling/marking techniques are likely responsible for the observed increase in survival of marked/transported smolts.

In 1986, a new 3-year smolt marking study (including control releases) was initiated on spring/summer chinook salmon and steelhead at Lower Granite Dam and spring/summer and fall chinook salmon at McNary Dam. We planned to execute the second year of study at both dams in 1987. However, drought conditions (low river flow) projected for the Snake River Basin dictated that we mark only barge transport index groups at Lower Granite Dam (no controls). Since drought conditions were projected to be less severe for the Columbia River, we marked test and control groups of both races of salmon at McNary Dam.

The objective of the study is to re-evaluate transportation of smolts around dams utilizing state-of-the-art collection/transport and handling/marking techniques.

Methods

Smolts will be marked with freeze brands and coded wire tags (CWT) during each of three outmigrations and either transported by barge to below Bonneville Dam or released as controls below Little Goose or McNary dams as appropriate. Evaluation will be based on comparative rates of return of adults from these marking efforts.

Marking and Delayed Mortality of Juvenile Salmonids

Lower Granite Dam.-- Smolt marking operations began on 10 April and continued through 27 May encompassing the majority of the spring/summer chinook salmon and steelhead outmigrations. Test fish were naturally migrating smolts collected from the sample fish tank. All received adipose fin clips (spring/summer chinook salmon) or right ventral fin clips (steelhead), freeze

brands, and CWTs. All test fish were marked from the sample tank. Each day virtually all spring chinook salmon in the sample tank that were not previously marked or badly injured or descaled were marked. The COE operates the sampler system under guidelines from the Fisheries Transport Oversight Team (FTOT).

Transport index fish were marked at least every other day using pre-anesthesia handling techniques which effectively reduce stress and injury associated with marking (Matthews et al. 1985). Spring/summer chinook salmon and steelhead were marked in replicate groups of approximately 5,000 and 4,250 fish each, respectively. With this approach, information can be obtained on differences in rate of return that might exist between years as well as the impact of marking different segments of the population and releasing them at different times into potentially different environmental conditions each year. Totals of 50,157 spring/summer chinook salmon and 27,544 steelhead were marked and transported by barge to below Bonneville Dam in 1987 (Appendix Tables 1 and 2 detail numbers marked for each brand rotation and CWT code by species).

To measure the short-term effects of present handling/marking procedures, samples of both species were held throughout the season for 48 hours to determine post-marking delayed mortalities and CWT retention.

McNary Dam.-- Prior to the spring outmigration of 1987, NMFS, under contract to the COE, designed, constructed, and installed a new combination sample/pre-anesthesia tank system at McNary Dam. This provided the first pre-anesthesia method of handling/marking at this facility. The system also provided increased holding capacity with minimal stress.

Naturally migrating yearling spring/summer and subyearling fall chinook salmon were marked to re-evaluate collection and transportation of these salmonids from this dam. Marking of spring/summer chinook salmon began on 21 April and continued through 4 June. Marking of subyearling fall chinook

salmon began on 18 June and continued through 14 August. All marked fish received adipose fin clips, freeze brands, and CWTs. We marked 38,532 test and 58,039 control spring/summer chinook salmon smolts in replicate groups of approximately 5,000 and 7,500 fish each, respectively. Likewise, we marked 68,376 test and 68,291 control fall chinook salmon in replicate groups of approximately 10,000 fish each (Appendix Tables 3 and 4). Test fish were transported by barge and released below Bonneville Dam whereas control fish were released after dark in the bypass out-fall at the north end of the McNary Dam powerhouse. Throughout the respective marking periods, samples of both populations were held 48 hours to measure post-marking delayed mortality and CWT retention.

Recovery of Adults and Data Analysis

Adults will be recovered in each of the three years following marking as juveniles. Traps in fish ladders (Lower Granite Dam for releases there and Priest Rapids Dam for McNary Dam releases) will be the primary recovery sites for spring/summer chinook salmon and steelhead. Ocean and river commercial fisheries will continue to serve as primary recovery sites for fall chinook salmon marked at McNary Dam. Trapping efficiency will be determined from recoveries of marked fish returning to hatcheries. This is determined by the number of marked fish previously identified at a river trap compared to total marks returning to the hatcheries. Tributary sport fisheries and natal spawning areas will also be surveyed to provide estimates from these areas.

To analyze results, statistical treatments will be applied when returns for a given study year are complete or when sufficient data are available for analysis. Details of the data treatments were provided in Matthews et al. (1987).

Results and Discussion

48 Hour Delayed Mortality and CWT Retention

Appendix Table 5 provides details of the post-marking delayed mortality results by date for both species at Lower Granite Dam. For the entire season, delayed mortality averaged 1.1 (N = 618) and 1.2% (N = 334) for spring/summer chinook salmon and steelhead, respectively. Nearly all of the mortalities for both species occurred during separate 1-day holding periods. Had these mortalities not occurred, delayed mortality would have been virtually nonexistent for the entire season. In contrast, delayed mortalities for spring/summer chinook salmon ranged from 1.9 to 30.0% with an overall average of 11.4% during similar studies conducted at this facility from 1975-80 (Park 1985). Furthermore, it is noteworthy that this is the second consecutive year that the post-marking delayed mortality was lower for spring/summer chinook salmon than for steelhead at this facility. These data continue to indicate that recent facility improvements together with the pre-anesthesia handling/marking technique greatly enhance the post-collection/marking survival of salmonid smolts, particularly spring/summer chinook salmon.

The CWT loss ranged on a daily basis from 0.0 to 26.0%, with an overall seasonal average of 5.3% for spring/summer chinook salmon and 0.0 to 20.0%, with an overall seasonal average of 4.8% for steelhead (Appendix Table 5). In recent years, we have not adjusted release numbers to reflect short-term tag loss because it has averaged 1.0% or less for both species. However, all release group numbers were adjusted to reflect short-term tag loss this year at this facility. We believe the higher than normal percentage of lost tags experienced this year was due to the unfamiliarity of our tagging technicians with the new

tagging machines installed by the COE. We expect tag loss to return to insignificant levels as we gain experience with the new equipment.

Appendix Table 6 provides details on 48-hour delayed mortality and tag retention for spring/summer and fall chinook salmon marked at McNary Dam. Delayed mortality averaged 0.5 (N = 798) and 0.3% (N = 608) for spring/summer and fall chinook salmon, respectively. Matthews et al. (1987) reported a 3.5% post-marking delayed mortality for spring/summer chinook salmon at this facility in 1986. The only difference in the handling/marking operations between the two years was the new combination sample/pre-anesthesia tank used in this year's effort. New tagging equipment was not used at this facility this year, and CWT loss ranged from 0.0 to 2.0% for both spring/summer and fall chinook salmon with overall averages of 0.3 and 0.5%, respectively. Therefore, release numbers were not adjusted for tag loss at this facility.

Adult Returns

Recapturing adults marked as smolts in 1986 for transport research studies at Lower Granite and McNary dams is in the initial stage. To date, we have recovered 17 spring/summer and 10 fall chinook salmon and 141 steelhead from all sources (Appendix Tables 23-30). More specifically, for the Lower Granite Dam studies, we have observed 7 transport and 2 control spring/summer chinook salmon jacks and 73 transport and 57 control 1-ocean age steelhead in the adult trap at this facility. Recoveries of spring/summer and fall chinook salmon jacks from studies conducted at McNary Dam were too few and scattered for any specific comments at this time.

INCIDENCE OF BKD IN SPRING/SUMMER CHINOOK SALMON AT LOWER GRANITE DAM, 1987

Introduction

Our ability to evaluate transportation of spring/summer chinook salmon from Snake River collector dams has been reduced in recent years by low return rates of marked transport and in-river control groups thereby yielding inconclusive data (Park 1985). During this time, hatchery fish predominated in the marked release groups.

Recent studies conducted by NMFS at Lower Granite Dam implicated BKD as the probable cause for the poor post-release performance of Snake River spring/summer chinook salmon or, more specifically, of hatchery stocks of this species. In these studies, spring/summer chinook salmon smolts were held in artificial seawater for extended periods. Park et al. (1986) reported mortalities ranging from 60.3 to 75.9% after 141 days, and BKD was found in 98.8% of the mortalities. In addition, BKD was present in the majority of the survivors when the test was terminated. Similarly, Matthews et al. (1987) demonstrated BKD in most of the mortalities and survivors in a subsequent study which was terminated after 43 days due to equipment failure. These results are not conclusive, however, they strongly suggest that more definitive investigations of BKD are needed.

During spring 1987, the NMFS, in cooperation with disease researchers at the National Fisheries Research Center-Seattle (NFRC-S) of the U.S. Fish and Wildlife Service (USFWS), undertook a study to profile the daily incidence and severity of BKD in spring/summer chinook salmon collected at Lower Granite Dam during the smolt outmigration. Personnel from NMFS collected and prepared samples in the field for shipment to personnel at the NFRC-S who measured BKD

with a fluorescent antibody technique (FAT) and an enzyme-linked immunosorbent assay (ELISA) specific for R. salmoninarum. Data collected will enhance our knowledge relative to the magnitude of the problem and provide important baseline information for future reference. Optimistically, it may also reveal information or clues, epidemiological in nature, that could expedite a resolution or mitigation of this problem. Preliminary results of this initial effort are reported here. Final results will be published in an appropriate journal as time permits.

Methods

Naturally migrating spring/summer chinook salmon smolts were subsampled from the facility's collection sample from 9 April through 29 May. Approximately 20-30 smolts/day were sampled from 9 to 22 April and again from 3 to 29 May. From 23 April to 2 May, the peak of the outmigration, 50 smolts/day were sampled. In addition, on 13, 27, and 30 April, the same species was sampled from a gatewell and associated fyke nets during fish guidance efficiency (FGE) tests. On each date, approximately 30 fish were sampled from a gatewell (either 4A or 4B) and each fyke net.

At the collection facility, groups of five smolts were subsampled from the anesthetic sorting trough at regular intervals as the facility sample was sorted each morning. Subsampling procedure was to immerse and retrieve a small dip net through a dense mass of fish in the sorting trough. Each fish was placed in an individual plastic bag to prevent cross-contamination; fish were refrigerated to keep them fresh until they were examined and necropsied each afternoon.

Each fish was weighed, measured to fork length, examined for previous marks, necropsied aseptically, and examined critically for the presence of

internal BKD lesions. The kidney and spleen were removed from each fish, and the sampled organs from a given fish were placed together in a sterile polypropylene container, identified by fish number, and then frozen. To prevent cross-contamination, all dissecting tools were soaked in ethanol and flamed rigorously after each use. Disposable materials such as rubber gloves, paper blotting towels, and wooden applicators were discarded, and work stations were treated liberally with ethanol after each necropsy.

The frozen kidney and spleen samples were subsequently transferred in batches on dry ice to the NFRC-S. Disease researchers at this facility used FAT and ELISA methods (Pascho et al. 1988) to detect and quantify BKD organisms and antigens. A negative control was established for the ELISA using a BKD-free population of eastern brook trout (Salvelinus fontinalis) obtained from White Sulfur Springs National Fish Hatchery in West Virginia.

Results and Discussion

In every daily sample of spring/summer chinook salmon smolts throughout the sample period, BKD was detected by FAT and ELISA (Appendix Table 31). The daily incidence of BKD, as determined by the ELISA, ranged from 16.0% on 17 April to 92.0% on 24 May. Overall, the test demonstrated soluble antigens of R. salmoninarum in 45.6% of the spring/summer chinook salmon smolts sampled during the season (Table 4).

The incidence of BKD in the samples was characterized by a steady increase over time during the outmigration (Table 4). The infection rate, as determined by the ELISA, increased from 29.7% during the first 10-day period to 68.7% during the final 11-day period. Likewise, the rate of infection determined by FAT increased from 12.0 to 34.5%, and the incidence of visible lesions increased from 2.4 to 21.8%.

Table 4.--A summary, by 10-day time periods of the BKD incidence in spring/summer chinook salmon smolts at Lower Granite Dam in 1987.

Sample dates	Number of fish	Percent positive for BKD		
		Lesions	FAT	ELISA
9-18 April	250	2.4	12.0	29.7 a/
19-28 April	400	3.3	11.7	36.1 b/
29 April-8 May	349	7.2	18.1	41.5
9-18 May	251	10.3	20.7	56.6
19-29 May	275	21.8	34.5	68.7
Season totals	1,525	8.5	18.8	46.5 c/

a/ 249 fish
b/ 399 fish
c/ 1,523 fish

Table 5 presents the infection rate for marked smolts recovered at Lower Granite Dam which originated from specific hatcheries upstream from the dam. Lookingglass Creek Hatchery and Dworshak National Fish Hatchery (Dworshak sample consisted of only 10 fish) had the lowest incidences determined by ELISA at 27.0 and 30.0%, respectively. The incidence for Rapid River Hatchery was 50.0%. Sawtooth and McCall Hatcheries had the highest incidences at 73.1 and 77.3%, respectively. These values corresponded with the increase in incidence levels observed over time in the overall samples. That is, the majority of Lookingglass Creek Hatchery fish were collected during the early portion of the outmigration when overall incidence was lowest, and McCall Hatchery fish were most abundant in the samples taken during the later portion of the outmigration when overall incidence was highest. It is noteworthy that the fish from Lookingglass Creek and Dworshak hatcheries, whose fish had the lowest BKD incidence, had the shortest distance to migrate before reaching the dam. Conversely, fish from Sawtooth and McCall hatcheries, whose fish had the highest BKD incidence, had the farthest distance to migrate before reaching the dam. This relationship could be simply coincidental. On the other hand, it may be the result of some unknown phenomenon involving the disease and the process of smoltification/migration.

Preliminary results of the three samples obtained during the FGE tests are shown in Table 6. The incidence of BKD in the samples was higher in guided than unguided smolts for all three sample dates. This limited information suggests that BKD could exert some influence on a fish's susceptibility to guidance by traveling screens. A more detailed examination of this relationship is necessary before conclusions can be drawn.

To date, we have not had an opportunity to extensively examine the data provided by this initial sampling effort. However, a superficial review

Table 5.--The BKD incidence by hatchery in spring/summer chinook salmon sampled at Lower Granite Dam over the outmigration season in 1987.

Hatchery	Number of fish	Percent positive for BKD		
		Lesions	FAT	ELISA
Lookingglass	126	1.6	5.5	27.0
McCall	44	22.7	45.5	77.3
Sawtooth	26	23.1	42.3	73.1
Rapid River	16	18.7	18.7	50.0
Dworshak	10	10.0	20.0	30.0

Table 6.--The incidence of BKD by ELISA in guided (gatewell) and unguided (closure and fyke nets) spring/summer chinook salmon smolts during fish guidance efficiency tests at Lower Granite Dam in 1987.

Sample date	Percent positive for BKD (N)	
	Guided	Unguided
13 April	56.7 (30)	35.0 (120)
27 April	30.0 (30)	21.6 (115)
30 April	80.0 (30)	42.0 (106)

demonstrated the widespread prevalence of BKD in spring/summer chinook salmon smolts emigrating from hatcheries in the Snake River Basin. Even though we were aware of the presence of advanced clinical symptoms of BKD in a few smolts for many years, the chronic nature of the disease combined with inadequacies inherent in previous detection techniques effectively concealed the magnitude of the problem until now.

SUMMARY AND CONCLUSIONS

1. Returns of adult fall chinook salmon previously marked at McNary Dam to evaluate transportation from 1978-83 are complete. Significantly more transported fish returned than controls in all study years. A TBR of more than 1.8:1 was realized in all study years regardless of transport mode or area of recovery.
2. Returns of adult spring/summer chinook salmon tagged as juveniles for transport index purposes from 1983-85, while still low, are much improved over returns for similar groups tagged during 1976-80. It appears that the returns are composed primarily of wild fish even though hatchery fish were predominate in the smolt outmigrations during marking.
3. During 1987, 50,157 spring/summer chinook salmon and 27,544 steelhead were marked at Lower Granite Dam to index the relative success of the barge transport program. No in-river controls were marked due to projected low river flows.
4. Totals of 38,532 test and 58,039 control spring/summer chinook salmon and 68,376 test and 68,291 control fall chinook salmon were marked at McNary Dam in 1987, the second year of a 3-year marking study, to re-evaluate transportation from that facility.

5. Post-marking delayed mortality averaged 0.5 and 0.3% for spring/summer and fall chinook salmon, respectively, at McNary Dam. Delayed mortality for spring/summer chinook salmon averaged 3.5% the previous year. We attribute the improvement to the use of the new sample/pre-anesthesia tank system designed, constructed, and installed by NMFS prior to the marking season. Delayed mortality averaged 1.1 and 1.2% for spring chinook salmon and steelhead, respectively, at Lower Granite Dam.
6. ELISA results indicated that the daily incidence of BKD in spring/summer chinook salmon smolts ranged from 16.0 to 92.0% at Lower Granite Dam. Overall, 45.6% of the smolts sampled during the outmigration tested positive.

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APPENDIX

Data Tables

Appendix Table 1.--Summary of the spring/summer chinook salmon barge transport index marking program by replicate at Lower Granite Dam in 1987 including dates marked, brand positions, symbols, and orientations, wire tag codes, and numbers of fish marked.

Replicate No.	Dates Marked	Brand position [a] Symbol and orientation [b]	Wire tag Code	No. marked [c]
1	10-16 Apr	RA-2,1	23-19-43	4226
2	16-18 Apr	RA-2,2	23-19-44	5136
3	18-20 Apr	RA-2,3	23-19-45	4636
4	20-22 Apr	RA-2,4	23-19-46	4929
5	24-26 Apr	RA-9,1	23-19-47	5070
6	26-28 Apr	RA-9,2	23-19-48	4366
7	30 Apr-1 May	RA-9,2	23-20-18	4446
8	1-4 May	RA-9,4	23-20-19	4843
9	4-12 May	RA-U,1	23-20-22	4815 [d]
10	12-13 May	RA-U,3	23-20-29	5059
11	15-27 May	RA-U,2	23-20-23	2681
			Total	50,157

[a] Position - RA indicates right anterior side of fish.

[b] Orientation - refers to rotation of brand around its centerpoint (i.e., 1 corresponds to the normal orientation, A; 2 to ⋗; 3 to ∀; 4 to ∢).

[c] Adjusted for initial tag loss

[d] Of this total, 77 fish were marked and hauled by truck on 7 May.

Appendix Table 2.--Summary of the steelhead barge transport index marking program by replicate at Lower Granite Dam in 1987, including dates marked, brand positions, symbols, and orientations, wire tag codes, and numbers of fish marked.

Replicate No.	Dates Marked	Brand position [a] Symbol and orientation [b]	Wire tag Code	No. marked [c]
1	16-30 Apr	RA-2,1	23-19-43	3869
2	30 Apr-2 May	RA-2,2	23-19-44	3829
3	2-7 May	RA-2,3	23-19-45	4168 [d]
4	7 May	RA-2,4	23-19-46	2487 [e]
5	8-12 May	RA-U,1	23-19-47	4298
6	13-14 May	RA-U,2	23-19-48	4275
7	15-27 May	RA-U,3	23-20-30	4618
			Total	27,544

[a] Position - RA indicates right anterior side of fish.

[b] Orientation - refers to rotation of brand around its centerpoint, (i.e., 1 corresponds to the normal oriention, A; 2 to ⊳ ; 3 to ∀ ; 4 to ∢).

[c] Adjusted for initial tag loss

[d] Of this total 47 fish were marked and hauled by truck.

[e] All fish were marked and hauled by truck.

Appendix Table 3.--Summary of the spring/summer chinook salmon marking program by replicate at McNary Dam in 1987 including dates marked, brand positions, symbols, an orientations, wire tag codes, and numbers of fish marked for both control and test groups.

Replicate No.	Marking period	Brand position [a] symbol, and orientation [b]	Wire tag Code	No. released
		Control (McNary Dam tailrace)		
1	21 Apr-04 May	LA ♡,1	23-19-49	7,502
2	04-07 May	LA ♡,2	23-19-50	7,501
3	07-10 May	LA ♡,3	23-19-51	7,500
4	10-13 May	LA ♡,4	23-19-52	7,500
5	13-17 May	LA I,1	23-19-53	7,501
6	18-23 May	LA I,2	23-19-54	7,505
7	23-27 May	LA I,3	23-19-55	7,501
8	27 May-4 June	LA I,4	23-19-56	5,529
			Total	58,039
		Test (barge transport below Bonneville Dam)		
1	21 Apr-04 May	RA π,1	23-20-8	5,002
2	04-07 May	RA π,2	23-20-9	5,000
3	07-10 May	RA π,3	23-20-10	5,000
4	10-13 May	RA π,4	23-20-11	5,003
5	13-17 May	RA-3,1	23-20-12	5,000
6	17-22 May	RA-3,2	23-20-13	5,002
7	23-27 May	RA-3,3	23-20-14	5,000
8	27 May-3 June	RA-3,4	23-20-15	3,525
			Total	38,532

[a] Position-LA and RA indicate left and right anterior sides of fish, respectively.

[b] Orientation - refers to rotation of brand around its centerpoint (i.e., 1 corresponds to the normal orientation, A; 2 to ⊳ ; 3 to ∀ ; 4 to ⊲).

Appendix Table 4.--Summary of the fall chinook salmon marking program by replicate at McNary Dam during 1987 including dates marked, brand positions, symbols, orientations, wire tag codes, and numbers of fish marked for both control and test groups.

Replicate No.	Marking period	Brand position a/ symbol, and orientation b/	Wire tag code	No. released
		Control (McNary Dam tailrace)		
1	18-23 June	LA-1X,1	23-20-2	10,000
2	23-25 June	LA-1X,3	23-20-3	9,146
3	25 June-1 July	LA-2C,1	23-20-4	9,753
4	01-08 July	LA-2C,3	23-20-5	10,000
5	08-14 July	LA-2J,1	23-20-6	10,000
6	15-30 July	LA-2J,3	23-20-7	9,392
7	30 July-13 Aug	LA-1J,1	23-19-57	10,000
			Total	68,291
		Test (barge transport below Bonneville Dam)		
1	18-23 June	RA-14,1	23-19-59	10,003
2	23-25 June	RA-14,3	3-19-60	9,146
3	25 June-1 July	RA-1R,1	23-19-61	9,834
4	01-08 July	RA-1R,3	23-19-62	10,001
5	08-14 July	RA-1S,1	23-19-63	10,000
6	15-30 July	RA-1S,3	23-20-1	9,392
7	30 July-14 Aug	RA-1K,1	23-20-16	10,000
			Total	68,376

a/ Position-LA and RA indicate left and right anterior sides of fish, respectively.

b/ Orientation - refers to rotation of brand around its centerpoint (i.e., 1 corresponds to the normal orientation, A; 2 to ⊳; 3 to ∀; 4 to ⊲).

Appendix Table 5.--Number held, 48h delayed mortality, and tag loss by date of juvenile spring/summer chinook salmon and steelhead after marking at Lower Granite Dam, 1987.

Date	Number held	48h mortality	Lost tags
	Spring/summer chinook salmon		
16 Apr	50	0	8
18 Apr	50	1	0
20 Apr	50	0	0
22 Apr	50	0	2
24 Apr	50	0	1
26 Apr	50	0	0
28 Apr	50	1	13
01 May	45	4	5
04 May	50	0	2
09 May	25	0	0
11 May	50	1	0
13 May	50	0	2
18 May	48	0	0
Totals	618	7	33
	Steelhead		
30 Apr	50	0	5
04 May	57	0	1
09 May	62	0	5
11 May	50	0	0
15 May	40	0	0
18 May	50	0	0
23 May	25	4	5
Totals	334	4	16

Appendix Table 6.--Number held, 48h delayed mortality, and tag loss by date of juvenile spring/summer chinook salmon and steelhead after marking at McNary Dam, 1987.

Date	Number held	48h mortality	Lost tags
	Spring/summer chinook salmon		
23 Apr	50	0	0
30 Apr	50	0	1
03 May	50	2	0
07 May	50	0	1
09 May	50	0	0
11 May	50	0	0
13 May	50	0	0
16 May	48	0	0
18 May	50	0	0
21 May	50	1	0
23 May	50	0	0
26 May	50	1	0
28 May	50	0	0
30 May	50	0	0
01 June	50	0	0
02 June	50	0	0
Totals	798	4	2
	Fall chinook salmon		
18 June	51	0	0
20 June	54	0	1
22 June	48	0	0
24 June	52	0	0
29 June	50	0	0
01 July	50	1	1
06 July	50	0	0
08 July	51	0	0
13 July	51	0	1
20 July	51	1	0
28 July	50	0	0
05 Aug	50	0	0
Totals	608	2	3

Appendix Table 7.0.--Summary of all recoveries of adult fall chinook salmon released as controls below McNary Dam in 1979.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 7922A 7922B 7922C 7922E 7922F

1979 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LA5 1 LA5 2 LA5 3 LAIM1 LAIM3 LAIM2 LAIM4
Wire Codes Used: PR RDLGYW RDLGYW RDYWPK RDYWPK LBYWLB RDLBPK

NUMBER RELEASED: 112718

RECOVERY AREA	YEAR OF RETURN 1979	1980	1981	1982	1983	1984	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	4	0	5	1	0	10	0.009
MCNARY TRAP	0	2	0	1	0	0	3	0.003
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	3	0	0	3	0.003
OCEAN FISHERIES								
ALASKA	0	0	3	16	10	0	29	0.026
BRITISH COLUMBIA	0	1	2	5	0	0	8	0.007
WASHINGTON	0	0	0	1	0	0	1	0.001
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	3	4	0	0	7	0.006
INDIAN FISHERY								
FALL INDIAN NET	0	0	2	1	2	0	5	0.004
HATCHERIES								
DWORSHAK H.	0	0	1	0	0	0	1	0.001
WELLS H.	0	0	1	3	0	0	4	0.004
PRIEST RAPIDS H.	0	0	8	7	2	0	17	0.015
RINGOLD H.	0	0	0	1	0	0	1	0.001
STREAM SURVEY								
OTHER STREAMS	0	0	0	2	0	0	2	0.002
TOTALS	0	7	20	49	15	0	91	0.081
PERCENT OF RECOVERY %	0.0	7.7	22.0	53.8	16.5	0.0		

Appendix Table 8.0.-- Summary of all recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam in 1979.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 7908A 7908B 7908C 7908D 7908E 7908F

1979 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RA3 1 RA3 2 RA3 3 RA+I1 LAIM3 RA+I4 RA+I2 RA+I3
Wire Codes Used: SM RDLGPK RDLGPK RDPKOR RDPKOR LBYWLG RDLBYW RDPKLB

NUMBER RELEASED: 132919

RECOVERY AREA	YEAR OF RETURN 1979	1980	1981	1982	1983	1984	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	27	9	25	6	0	67	0.050
MCNARY TRAP	0	34	5	4	0	0	43	0.032
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	11	0	0	11	0.008
OCEAN FISHERIES								
ALASKA	0	0	11	157	76	0	244	0.184
BRITISH COLUMBIA	0	16	31	46	11	0	104	0.078
WASHINGTON	0	0	5	4	1	0	10	0.008
OREGON	0	0	0	1	0	0	1	0.001
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	1	0	0	0	0	1	0.001
COLUMBIA R. ABOVE SNAKE R.	0	2	0	0	0	0	2	0.002
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	1	4	15	3	0	23	0.017
YOUNGS BAY	0	1	1	0	0	0	2	0.002
INDIAN FISHERY								
FALL INDIAN NET	0	1	9	21	12	0	43	0.032
HATCHERIES								
DWORSHAK H.	0	0	1	0	0	0	1	0.001
BONNEVILLE H.	0	0	0	2	0	0	2	0.002
WELLS H.	0	0	5	17	0	0	22	0.017
PRIEST RAPIDS H.	0	0	21	35	2	0	58	0.044
STREAM SURVEY								
OTHER STREAMS	0	0	1	38	7	0	46	0.035
TOTALS	0	83	103	376	118	0	680	0.512
PERCENT OF RECOVERY %	0.0	12.2	15.1	55.3	17.4	0.0		

Appendix Table 9.0.--Summary of all recoveries of adult fall chinook salmon released as controls below McNary Dam in 1980.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8020A 8020B

1980 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LAIF1 LAIF3
Wire Codes Used: CE CEDY

NUMBER RELEASED: 84587

RECOVERY AREA	YEAR OF RETURN 1980	1981	1982	1983	1984	1985	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	4	1	7	4	0	16	0.019
MCNARY TRAP	0	0	1	0	0	0	1	0.001
ICE HARBOR TRAP	0	1	0	0	0	0	1	0.001
LOWER GRANITE TRAP	0	1	0	0	0	0	1	0.001
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	6	27	4	0	37	0.044
BRITISH COLUMBIA	0	0	13	10	6	0	29	0.034
WASHINGTON	0	0	0	3	0	0	3	0.004
OREGON	0	0	1	0	0	0	1	0.001
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	1	0	1	0.001
RIVER SPORT	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	0	2	1	0	3	0.004
INDIAN FISHERY								
FALL INDIAN NET	0	1	2	17	5	0	25	0.030
HATCHERIES								
PRIEST RAPIDS H.	0	4	6	12	0	0	22	0.026
STREAM SURVEY								
OTHER STREAMS	0	0	5	8	1	0	14	0.017
TOTALS	0	11	35	86	22	0	154	0.182
PERCENT OF RECOVERY %	0.0	7.1	22.7	55.8	14.3	0.0		

Appendix Table 10.0.--Summary of all recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam in 1980.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8011A 8011B

1980 MCNARY TRANS TRUCK DALTON POINT

FALL CHINOOK

Brands Used: RAIC1 RAIC3
Wire Codes Used: LA HO

NUMBER RELEASED: 80204

RECOVERY AREA	1980	YEAR OF RETURN 1981	1982	1983	1984	1985	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	20	8	27	25	0	80	0.100
MCNARY TRAP	0	12	19	24	13	1	69	0.086
LOWER GRANITE TRAP	0	0	1	2	0	0	3	0.004
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	10	120	28	0	158	0.197
BRITISH COLUMBIA	0	2	34	35	13	0	84	0.105
WASHINGTON	0	1	5	6	0	0	12	0.015
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	1	2	8	9	0	20	0.025
COL. R. TEST FSHRY (ORE)	0	0	0	1	0	0	1	0.001
YOUNGS BAY	0	0	0	3	0	0	3	0.004
INDIAN FISHERY								
FALL INDIAN NET	0	4	8	35	20	0	67	0.084
INDIAN CEREMONIAL	0	0	0	1	0	0	1	0.001
HATCHERIES								
WELLS H.	0	2	0	3	0	0	5	0.006
PRIEST RAPIDS H.	0	4	16	17	0	0	37	0.046
RINGOLD H.	0	0	0	2	0	0	2	0.002
STREAM SURVEY								
OTHER STREAMS	0	0	10	17	10	0	37	0.046
TOTALS	0	46	113	301	118	1	579	0.722
PERCENT OF RECOVERY %	0.0	7.9	19.5	52.0	20.4	0.2		

Appendix Table 11.0.--Summary of all recoveries of adult fall chinook salmon released as controls below McNary Dam in 1981.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8101A

1981 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LAIM1 LAIM3 LAIM2 LAIM4
Wire Codes Used: 031732 031732 031732 031732

NUMBER RELEASED: 42580

RECOVERY AREA	YEAR OF RETURN 1981	1982	1983	1984	1985	1986	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	1	0	23	9	0	33	0.078
MCNARY TRAP	0	4	0	1	0	0	5	0.012
LOWER GRANITE TRAP	0	1	0	0	0	0	1	0.002
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	3	20	5	1	29	0.068
BRITISH COLUMBIA	0	1	5	6	8	0	20	0.047
WASHINGTON	0	0	0	1	0	0	1	0.002
OREGON	0	0	0	1	0	0	1	0.002
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	0	9	1	0	10	0.023
INDIAN FISHERY								
FALL INDIAN NET	0	0	5	13	11	2	31	0.073
HATCHERIES								
BONNEVILLE H.	0	0	0	1	0	0	1	0.002
PRIEST RAPIDS H.	0	1	0	6	1	0	8	0.019
STREAM SURVEY								
OTHER STREAMS	0	1	2	2	1	0	6	0.014
TOTALS	0	9	15	83	36	3	146	0.343
PERCENT OF RECOVERY %	0.0	6.2	10.3	56.8	24.7	2.1		

Appendix Table 12.0.--Summary of all recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam in 1981.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8102A

1981 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RA+I3 RA+I1 RA+I4 RA+I2
Wire Codes Used: 031733 031733 031733 031733

NUMBER RELEASED: 42924

RECOVERY AREA	YEAR OF RETURN 1981	1982	1983	1984	1985	1986	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	2	12	84	17	0	115	0.268
MCNARY TRAP	0	38	15	19	6	0	78	0.182
LOWER GRANITE TRAP	0	1	1	0	0	0	2	0.005
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	2	8	75	43	1	129	0.301
BRITISH COLUMBIA	0	7	22	54	23	1	107	0.249
WASHINGTON	0	0	0	2	0	0	2	0.005
OREGON	1	0	0	0	0	0	1	0.002
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	1	0	0	1	0.002
COLUMBIA R. ABOVE SNAKE R.	0	0	2	0	0	0	2	0.005
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
OTHER RIVERS	0	0	0	1	0	0	1	0.002
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	2	27	18	1	48	0.112
INDIAN FISHERY								
INDIAN FISHERY	0	0	0	1	0	0	1	0.002
FALL INDIAN NET	0	0	7	26	29	1	63	0.147
HATCHERIES								
LYONS FERRY H.	0	0	0	3	0	0	3	0.007
WELLS H.	0	0	1	2	1	0	4	0.009
PRIEST RAPIDS H.	0	2	13	22	10	0	47	0.109
STREAM SURVEY								
OTHER STREAMS	0	1	5	13	4	0	23	0.054
TOTALS	1	53	88	330	151	4	627	1.461
PERCENT OF RECOVERY %	0.2	8.5	14.0	52.6	24.1	0.6		

Appendix Table 13.0.--Summary of all recoveries of adult fall chinook salmon released as controls below McNary Dam in 1982.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8205A 8205B 8205C

1982 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used:	LAH 1	LAH 2	LAIF1	LAIF3	LAIC1	LAIC3	LAIM1	LAIM3	LAIF2	LAIF4	LAIC2	LAIC4	LAIM2	LAIM4
Wire Codes Used:	231609	231609	231609	231609	231611	231611	231611	231611	231611	231611	231613	231613	231613	231613

NUMBER RELEASED: 38683

RECOVERY AREA	YEAR OF RETURN 1982	1983	1984	1985	1986	1987	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	5	17	6	7	0	35	0.090
MCNARY TRAP	0	1	1	0	0	0	2	0.005
LOWER GRANITE TRAP	0	1	0	0	0	0	1	0.003
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	1	0	15	4	0	20	0.052
BRITISH COLUMBIA	0	1	4	8	4	0	17	0.044
WASHINGTON	0	0	0	1	0	0	1	0.003
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	1	0	0	1	0.003
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	1	2	0	3	0.008
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
OTHER RIVERS	0	0	0	1	0	0	1	0.003
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	2	8	0	0	10	0.026
INDIAN FISHERY								
FALL INDIAN NET	0	0	1	13	6	0	20	0.052
HATCHERIES								
PRIEST RAPIDS H.	0	0	2	3	0	0	5	0.013
STREAM SURVEY								
OTHER STREAMS	0	0	1	1	0	0	2	0.005
TOTALS	0	9	28	58	23	0	118	0.305
PERCENT OF RECOVERY %	0.0	7.6	23.7	49.2	19.5	0.0		

Appendix Table 13.1.--Recoveries of adult fall chinook salmon released as controls below McNary Dam from 2 June - 6 July, 1982.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8205A

1982 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LAH 1 LAH 2 LAIF1 LAIF3
Wire Codes Used: 231609 231609 231609 231609

NUMBER RELEASED: 8667

RECOVERY AREA	YEAR OF RETURN 1982	1983	1984	1985	1986	1987	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	0	0	2	2	0	4	0.046
MCNARY TRAP	0	1	0	0	0	0	1	0.012
LOWER GRANITE TRAP	0	1	0	0	0	0	1	0.012
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	0	4	1	0	5	0.058
BRITISH COLUMBIA	0	1	2	2	1	0	6	0.069
WASHINGTON	0	0	0	0	0	0	0	0.000
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	1	0	0	1	0.012
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	1	1	0	0	2	0.023
INDIAN FISHERY								
FALL INDIAN NET	0	0	0	2	3	0	5	0.058
HATCHERIES								
PRIEST RAPIDS H.	0	0	1	1	0	0	2	0.023
STREAM SURVEY								
OTHER STREAMS	0	0	0	1	0	0	1	0.012
TOTALS	0	3	4	14	7	0	28	0.323
PERCENT OF RECOVERY %	0.0	10.7	14.3	50.0	25.0	0.0		

Appendix Table 13.2.--Recoveries of adult fall chinook salmon released as controls below McNary Dam from 6-22 July 1982.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8205B

1982 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LAIC1 LAIC3 LAIM1 LAIM3 LAIF2 LAIF4
Wire Codes Used: 231611 231611 231611 231611 231611 231611

NUMBER RELEASED: 18864

RECOVERY AREA	YEAR OF RETURN 1982	1983	1984	1985	1986	1987	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	4	13	3	5	0	25	0.133
MCNARY TRAP	0	0	1	0	0	0	1	0.005
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	1	0	6	1	0	8	0.042
BRITISH COLUMBIA	0	0	2	3	2	0	7	0.037
WASHINGTON	0	0	0	0	0	0	0	0.000
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	1	0	0	1	0.005
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	2	0	2	0.011
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	0	4	0	0	4	0.021
INDIAN FISHERY								
FALL INDIAN NET	0	0	0	8	3	0	11	0.058
HATCHERIES								
PRIEST RAPIDS H.	0	0	1	2	0	0	3	0.016
STREAM SURVEY	0	0	0	0	0	0	0	0.000
TOTALS	0	5	17	27	13	0	62	0.329
PERCENT OF RECOVERY %	0.0	8.1	27.4	43.5	21.0	0.0		

Appendix Table 13.3.--Recoveries of adult fall chinook salmon released as controls below McNary Dam from 27 July to 5 August 1982.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8205C

1982 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LAIC2 LAIC4 LAIM2 LAIM4
Wire Codes Used: 231613 231613 231613 231613

NUMBER RELEASED: 11152

RECOVERY AREA	YEAR OF RETURN 1982	1983	1984	1985	1986	1987	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	1	4	1	0	0	6	0.054
MCNARY TRAP	0	0	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	0	5	2	0	7	0.063
BRITISH COLUMBIA	0	0	0	3	1	0	4	0.036
WASHINGTON	0	0	0	1	0	0	1	0.009
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
OTHER RIVERS	0	0	0	1	0	0	1	0.009
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	1	3	0	0	4	0.036
INDIAN FISHERY								
FALL INDIAN NET	0	0	1	3	0	0	4	0.036
HATCHERIES	0	0	0	0	0	0	0	0.000
STREAM SURVEY								
OTHER STREAMS	0	0	1	0	0	0	1	0.009
TOTALS	0	1	7	17	3	0	28	0.251
PERCENT OF RECOVERY %	0.0	3.6	25.0	60.7	10.7	0.0		

Appendix Table 14.0.--Summary of all recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam in 1982.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8204A 8204B 8204C

1982 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RAV 1 RAV 2 RAV 3
Wire Codes Used: 231610 231612 231614

NUMBER RELEASED: 39693

RECOVERY AREA	YEAR OF RETURN 1982	1983	1984	1985	1986	1987	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	15	19	16	10	0	60	0.151
MCNARY TRAP	0	11	17	12	0	0	40	0.101
LOWER GRANITE TRAP	0	1	1	0	0	0	2	0.005
PRIEST RAPIDS TRAP	0	0	0	0	3	0	3	0.008
OCEAN FISHERIES								
ALASKA	0	0	6	24	9	0	39	0.098
BRITISH COLUMBIA	0	2	8	19	8	0	37	0.093
WASHINGTON	0	0	0	1	0	0	1	0.003
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	1	0	0	0	0	1	0.003
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	12	14	1	0	27	0.068
INDIAN FISHERY								
FALL INDIAN NET	0	2	5	27	23	0	57	0.144
HATCHERIES								
LYONS FERRY H.	0	0	1	0	0	0	1	0.003
PRIEST RAPIDS H.	0	1	1	2	0	0	4	0.010
STREAM SURVEY								
OTHER STREAMS	0	0	2	4	2	0	8	0.020
TOTALS	0	33	72	119	56	0	280	0.705
PERCENT OF RECOVERY %	0.0	11.8	25.7	42.5	20.0	0.0		

Appendix Table 14.1.--Recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam from 25 June to 2 July 1982.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8204A

1982 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RAV 1
Wire Codes Used: 231610

NUMBER RELEASED: 5381

RECOVERY AREA	YEAR OF RETURN 1982	1983	1984	1985	1986	1987	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	1	3	0	1	0	5	0.093
MCNARY TRAP	0	0	0	1	0	0	1	0.019
LOWER GRANITE TRAP	0	0	1	0	0	0	1	0.019
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	0	1	0	0	1	0.019
BRITISH COLUMBIA	0	1	0	2	0	0	3	0.056
WASHINGTON	0	0	0	0	0	0	0	0.000
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	1	0	0	0	1	0.019
INDIAN FISHERY								
FALL INDIAN NET	0	0	0	0	2	0	2	0.037
HATCHERIES								
PRIEST RAPIDS H.	0	0	0	1	0	0	1	0.019
STREAM SURVEY								
OTHER STREAMS	0	0	0	1	0	0	1	0.019
TOTALS	0	2	5	6	3	0	16	0.297
PERCENT OF RECOVERY %	0.0	12.5	31.3	37.5	18.8	0.0		

Appendix Table 14.2.--Recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam from 12-21 July 1982.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8204B

1982 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RAV 2
Wire Codes Used: 231612

NUMBER RELEASED: 18787

RECOVERY AREA		YEAR OF RETURN 1982	1983	1984	1985	1986	1987	TOTAL	% RETURN
RIVER SYSTEM TRAPS									
BONNEVILLE TRAP		0	4	2	4	3	0	13	0.069
MCNARY TRAP		0	2	4	4	0	0	10	0.053
LOWER GRANITE TRAP		0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP		0	0	0	0	0	0	0	0.000
OCEAN FISHERIES									
ALASKA		0	0	0	7	4	0	11	0.059
BRITISH COLUMBIA		0	0	4	8	5	0	17	0.090
WASHINGTON		0	0	0	0	0	0	0	0.000
OREGON		0	0	0	0	0	0	0	0.000
CALIFORNIA		0	0	0	0	0	0	0	0.000
OTHER		0	0	0	0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL									
COMMERCIAL NET		0	0	3	5	1	0	9	0.048
INDIAN FISHERY									
FALL INDIAN NET		0	2	3	7	10	0	22	0.117
HATCHERIES									
PRIEST RAPIDS H.		0	0	0	1	0	0	1	0.005
STREAM SURVEY									
OTHER STREAMS		0	0	0	1	0	0	1	0.005
TOTALS		0	8	16	37	23	0	84	0.447
PERCENT OF RECOVERY	%	0.0	9.5	19.0	44.0	27.4	0.0		

Appendix Table 14.3.--Recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam from 26 July to 6 August 1982.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8204C

1982 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RAV 3
Wire Codes Used: 231614

NUMBER RELEASED: 15525

RECOVERY AREA	YEAR OF RETURN 1982	1983	1984	1985	1986	1987	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	10	14	12	6	0	42	0.271
MCNARY TRAP	0	9	13	7	0	0	29	0.187
LOWER GRANITE TRAP	0	1	0	0	0	0	1	0.006
PRIEST RAPIDS TRAP	0	0	0	0	3	0	3	0.019
OCEAN FISHERIES								
ALASKA	0	0	6	16	5	0	27	0.174
BRITISH COLUMBIA	0	1	4	9	3	0	17	0.110
WASHINGTON	0	0	0	1	0	0	1	0.006
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	1	0	0	0	0	1	0.006
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	8	9	0	0	17	0.110
INDIAN FISHERY								
FALL INDIAN NET	0	0	2	20	11	0	33	0.213
HATCHERIES								
LYONS FERRY H.	0	0	1	0	0	0	1	0.006
PRIEST RAPIDS H.	0	1	1	0	0	0	2	0.013
STREAM SURVEY								
OTHER STREAMS	0	0	2	2	2	0	6	0.039
TOTALS	0	23	51	76	30	0	180	1.159
PERCENT OF RECOVERY %	0.0	12.8	28.3	42.2	16.7	0.0		

Appendix Table 15.0.--Summary of all recoveries of adult fall chinook salmon released as controls below McNary Dam in 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8304A 8304B 8304C

1983 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LA2L1 LA2L3 LD2L1 LA2T1 LA2T3 LD2T1 LA2X1 LA2X3
Wire Codes Used: 231627 231627 231627 231630 231630 231630 231633 231633

NUMBER RELEASED: 40301

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	7	3	7	0	0	17	0.042
MCNARY TRAP	0	5	0	0	0	0	5	0.012
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	2	0	0	0	0	2	0.005
OCEAN FISHERIES								
ALASKA	0	0	0	24	0	0	24	0.060
BRITISH COLUMBIA	0	2	5	12	0	0	19	0.047
WASHINGTON	0	0	1	1	0	0	2	0.005
OREGON	0	0	1	1	0	0	2	0.005
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	1	0	0	0	0	1	0.002
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	1	0	0	1	0.002
COLUMBIA R. ABOVE SNAKE R.	0	0	2	0	0	0	2	0.005
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	4	0	0	0	4	0.010
INDIAN FISHERY								
FALL INDIAN NET	0	0	5	18	0	0	23	0.057
HATCHERIES								
PRIEST RAPIDS H.	0	1	6	0	0	0	7	0.017
STREAM SURVEY								
OTHER STREAMS	0	0	1	0	0	0	1	0.002
TOTALS	0	18	28	64	0	0	110	0.273
PERCENT OF RECOVERY %	0.0	16.4	25.5	58.2	0.0	0.0		

Appendix Table 15.1.--Recoveries of adult fall chinook salmon released as controls below McNary Dam from 8-15 July 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8304A

1983 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LA2L1 LA2L3 LD2L1
Wire Codes Used: 231627 231627 231627

NUMBER RELEASED: 15010

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	3	1	5	0	0	9	0.060
MCNARY TRAP	0	1	0	0	0	0	1	0.007
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	2	0	0	0	0	2	0.013
OCEAN FISHERIES								
ALASKA	0	0	0	15	0	0	15	0.100
BRITISH COLUMBIA	0	1	4	5	0	0	10	0.067
WASHINGTON	0	0	0	1	0	0	1	0.007
OREGON	0	0	1	1	0	0	2	0.013
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	1	0	0	0	0	1	0.007
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	1	0	0	1	0.007
COLUMBIA R. ABOVE SNAKE R.	0	0	1	0	0	0	1	0.007
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	3	0	0	0	3	0.020
INDIAN FISHERY								
FALL INDIAN NET	0	0	5	6	0	0	11	0.073
HATCHERIES								
PRIEST RAPIDS H.	0	1	3	0	0	0	4	0.027
STREAM SURVEY								
OTHER STREAMS	0	0	1	0	0	0	1	0.007
TOTALS	0	9	19	34	0	0	62	0.413
PERCENT OF RECOVERY %	0.0	14.5	30.6	54.8	0.0	0.0		

Appendix Table 15.2.--Recoveries of adult fall chinook salmon released as controls below McNary Dam from 20-27 July 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8304B

1983 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LA2T1 LA2T3 LD2T1
Wire Codes Used: 231630 231630 231630

NUMBER RELEASED: 14690

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	1	1	0	0	0	2	0.014
MCNARY TRAP	0	1	0	0	0	0	1	0.007
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	0	7	0	0	7	0.048
BRITISH COLUMBIA	0	1	0	6	0	0	7	0.048
WASHINGTON	0	0	0	0	0	0	0	0.000
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	1	0	0	0	1	0.007
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0	0	0	0.000
INDIAN FISHERY								
FALL INDIAN NET	0	0	0	6	0	0	6	0.041
HATCHERIES								
PRIEST RAPIDS H.	0	0	2	0	0	0	2	0.014
STREAM SURVEY	0	0	0	0	0	0	0	0.000
TOTALS	0	3	4	19	0	0	26	0.177
PERCENT OF RECOVERY %	0.0	11.5	15.4	73.1	0.0	0.0		

Appendix Table 15.3.--Recoveries of adult fall chinook salmon released as controls below McNary Dam from 29 July to 5 August 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8304C

1983 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LA2X1 LA2X3
Wire Codes Used: 231633 231633

NUMBER RELEASED: 10601

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	3	1	2	0	0	6	0.057
MCNARY TRAP	0	3	0	0	0	0	3	0.028
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	0	2	0	0	2	0.019
BRITISH COLUMBIA	0	0	1	1	0	0	2	0.019
WASHINGTON	0	0	1	0	0	0	1	0.009
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	1	0	0	0	1	0.009
INDIAN FISHERY								
FALL INDIAN NET	0	0	0	6	0	0	6	0.057
HATCHERIES								
PRIEST RAPIDS H.	0	0	1	0	0	0	1	0.009
STREAM SURVEY	0	0	0	0	0	0	0	0.000
TOTALS	0	6	5	11	0	0	22	0.208
PERCENT OF RECOVERY %	0.0	27.3	22.7	50.0	0.0	0.0		

Appendix Table 16.0.--Summary of all recoveries of adult fall chinook salmon transported by barge from McNary to below Bonneville Dam in 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8303A 8303B 8303C

1983 MCNARY TRANS BARGE BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RA3 1 RA3 3 RA3 2
Wire Codes Used: 231626 231629 231632

NUMBER RELEASED: 38860

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	35	9	16	0	0	60	0.154
MCNARY TRAP	0	27	3	0	0	0	30	0.077
LOWER GRANITE TRAP	0	1	0	0	0	0	1	0.003
PRIEST RAPIDS TRAP	0	2	0	0	0	0	2	0.005
OCEAN FISHERIES								
ALASKA	0	1	0	46	0	0	47	0.121
BRITISH COLUMBIA	0	1	0	24	0	0	33	0.085
WASHINGTON	0	0	1	1	0	0	2	0.005
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	1	0	0	0	0	1	0.003
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	1	1	1	0	0	3	0.008
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	14	0	0	0	14	0.036
INDIAN FISHERY								
FALL INDIAN NET	0	2	16	51	0	0	69	0.178
HATCHERIES								
DESCHUTES R. HATCHERIES	0	0	1	0	0	0	1	0.003
PRIEST RAPIDS H.	0	2	11	0	0	0	13	0.033
STREAM SURVEY								
OTHER STREAMS	0	0	0	1	0	0	1	0.003
TOTALS	0	73	64	140	0	0	277	0.713
PERCENT OF RECOVERY %	0.0	26.4	23.1	50.5	0.0	0.0		

Appendix Table 16.1.--Recoveries of adult fall chinook salmon transported by barge from McNary Dam to below Bonneville Dam from 10-16 July 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8303A

1983 MCNARY TRANS BARGE BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RA3 1
Wire Codes Used: 231626

NUMBER RELEASED: 15040

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	12	4	5	0	0	21	0.140
MCNARY TRAP	0	7	1	0	0	0	8	0.053
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	1	0	0	0	0	1	0.007
OCEAN FISHERIES								
ALASKA	0	1	0	17	0	0	18	0.120
BRITISH COLUMBIA	0	0	4	6	0	0	10	0.066
WASHINGTON	0	0	0	1	0	0	1	0.007
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	1	0	0	0	0	1	0.007
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	1	0	0	1	0.007
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	5	0	0	0	5	0.033
INDIAN FISHERY								
FALL INDIAN NET	0	0	5	23	0	0	28	0.186
HATCHERIES								
PRIEST RAPIDS H.	0	1	7	0	0	0	8	0.053
STREAM SURVEY	0	0	0	0	0	0	0	0.000
TOTALS	0	23	26	53	0	0	102	0.678
PERCENT OF RECOVERY %	0.0	22.5	25.5	52.0	0.0	0.0		

Appendix Table 16.2.--Recoveries of adult fall chinook salmon transported by barge from McNary Dam to below Bonneville Dam from 19-25 July 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 83038

1983 MCNARY TRANS BARGE BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RA3 3
Wire Codes Used: 231629

NUMBER RELEASED: 15230

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	14	4	8	0	0	26	0.171
MCNARY TRAP	0	14	1	0	0	0	15	0.098
LOWER GRANITE TRAP	0	1	0	0	0	0	1	0.007
PRIEST RAPIDS TRAP	0	1	0	0	0	0	1	0.007
OCEAN FISHERIES								
ALASKA	0	0	0	18	0	0	18	0.118
BRITISH COLUMBIA	0	0	2	15	0	0	17	0.112
WASHINGTON	0	0	0	0	0	0	0	0.000
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	1	1	0	0	0	2	0.013
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	6	0	0	0	6	0.039
INDIAN FISHERY								
FALL INDIAN NET	0	2	6	16	0	0	24	0.158
HATCHERIES								
PRIEST RAPIDS H.	0	1	2	0	0	0	3	0.020
STREAM SURVEY								
OTHER STREAMS	0	0	0	1	0	0	1	0.007
TOTALS	0	34	22	58	0	0	114	0.749
PERCENT OF RECOVERY %	0.0	29.8	19.3	50.9	0.0	0.0		

Appendix Table 16.3.--Recoveries of adult fall chinook salmon transported by barge from McNary Dam to below Bonneville from 30 July to 2 August 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8303C

1983 MCNARY TRANS BARGE BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RA3 2
Wire Codes Used: 231632

NUMBER RELEASED: 8590

RECOVERY AREA		YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS									
BONNEVILLE TRAP		0	9	1	3	0	0	13	0.151
MCNARY TRAP		0	6	1	0	0	0	7	0.081
LOWER GRANITE TRAP		0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP		0	0	0	0	0	0	0	0.000
OCEAN FISHERIES									
ALASKA		0	0	0	11	0	0	11	0.128
BRITISH COLUMBIA		0	1	2	3	0	0	6	0.070
WASHINGTON		0	0	1	0	0	0	1	0.012
OREGON		0	0	0	0	0	0	0	0.000
CALIFORNIA		0	0	0	0	0	0	0	0.000
OTHER		0	0	0	0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL									
COMMERCIAL NET		0	0	3	0	0	0	3	0.035
INDIAN FISHERY									
FALL INDIAN NET		0	0	5	12	0	0	17	0.198
HATCHERIES									
DESCHUTES R. HATCHERIES		0	0	1	0	0	0	1	0.012
PRIEST RAPIDS H.		0	0	2	0	0	0	2	0.023
STREAM SURVEY		0	0	0	0	0	0	0	0.000
TOTALS		0	16	16	29	0	0	61	0.710
PERCENT OF RECOVERY	%	0.0	26.2	26.2	47.5	0.0	0.0		

Appendix Table 17.0.--Summary of all recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam in 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8302A 8302B 8302C

1983 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RAIJ1 RAIJ3 RAIJ2
Wire Codes Used: 231625 231628 231631

NUMBER RELEASED: 35279

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	31	9	18	0	0	58	0.164
MCNARY TRAP	0	37	8	1	0	0	46	0.130
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	2	0	0	1	0	3	0.009
OCEAN FISHERIES								
ALASKA	0	1	0	44	0	0	45	0.128
BRITISH COLUMBIA	0	3	10	34	0	0	47	0.133
WASHINGTON	0	0	1	1	0	0	2	0.006
OREGON	0	0	1	0	0	0	1	0.003
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	1	0	1	0	0	2	0.006
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	20	0	0	0	20	0.057
INDIAN FISHERY								
FALL INDIAN NET	0	3	13	36	0	0	52	0.147
HATCHERIES								
WELLS H.	0	0	1	0	0	0	1	0.003
PRIEST RAPIDS H.	0	2	9	0	0	0	11	0.031
STREAM SURVEY								
OTHER STREAMS	0	1	1	0	0	0	2	0.006
TOTALS	0	81	73	135	1	0	290	0.822
PERCENT OF RECOVERY %	0.0	27.9	25.2	46.6	0.3	0.0		

Appendix Table 17.1.--Recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam from 7-14 July 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8302A

1983 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RAIJ1
Wire Codes Used: 231625

NUMBER RELEASED: 15096

RECOVERY AREA	1983	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	11	2	7	0	0	20	0.132
MCNARY TRAP	0	23	5	1	0	0	29	0.192
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES								
ALASKA	0	0	0	17	0	0	17	0.113
BRITISH COLUMBIA	0	1	6	13	0	0	20	0.132
WASHINGTON	0	0	0	0	0	0	0	0.000
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	6	0	0	0	6	0.040
INDIAN FISHERY								
FALL INDIAN NET	0	1	7	19	0	0	27	0.179
HATCHERIES								
PRIEST RAPIDS H.	0	1	5	0	0	0	6	0.040
STREAM SURVEY								
OTHER STREAMS	0	1	1	0	0	0	2	0.013
TOTALS	0	38	32	57	0	0	127	0.841
PERCENT OF RECOVERY %	0.0	29.9	25.2	44.9	0.0	0.0		

Appendix Table 17.2.--Recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam from 19-25 July 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 83028

1983 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RAIJ3
Wire Codes Used: 231628

NUMBER RELEASED: 13973

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	18	7	9	0	0	34	0.243
MCNARY TRAP	0	10	2	0	0	0	12	0.086
LOWER GRANITE TRAP	0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	2	0	0	1	0	3	0.021
OCEAN FISHERIES								
ALASKA	0	1	0	18	0	0	19	0.136
BRITISH COLUMBIA	0	2	3	16	0	0	21	0.150
WASHINGTON	0	0	1	0	0	0	1	0.007
OREGON	0	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	1	0	1	0	0	2	0.014
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL								
COMMERCIAL NET	0	0	11	0	0	0	11	0.079
INDIAN FISHERY								
FALL INDIAN NET	0	1	5	11	0	0	17	0.122
HATCHERIES								
PRIEST RAPIDS H.	0	1	3	0	0	0	4	0.029
STREAM SURVEY	0	0	0	0	0	0	0	0.000
TOTALS	0	36	32	55	1	0	124	0.887
PERCENT OF RECOVERY %	0.0	29.0	25.8	44.4	0.8	0.0		

Appendix Table 17.3.--Recoveries of adult fall chinook salmon transported by truck from McNary Dam to below Bonneville Dam from 30 July to 2 August 1983.

Master File Date : 30 December 1987
RELEASE GROUPS INCLUDED: 8302C

1983 MCNARY TRANS TRUCK BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RAIJ2
Wire Codes Used: 231631

NUMBER RELEASED: 6210

RECOVERY AREA		YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS									
BONNEVILLE TRAP		0	2	0	2	0	0	4	0.064
MCNARY TRAP		0	4	1	0	0	0	5	0.081
LOWER GRANITE TRAP		0	0	0	0	0	0	0	0.000
PRIEST RAPIDS TRAP		0	0	0	0	0	0	0	0.000
OCEAN FISHERIES									
ALASKA		0	0	0	9	0	0	9	0.145
BRITISH COLUMBIA		0	0	1	5	0	0	6	0.097
WASHINGTON		0	0	0	1	0	0	1	0.016
OREGON		0	0	1	0	0	0	1	0.016
CALIFORNIA		0	0	0	0	0	0	0	0.000
OTHER		0	0	0	0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0	0	0	0.000
RIVER COMMERCIAL									
COMMERCIAL NET		0	0	3	0	0	0	3	0.048
INDIAN FISHERY									
FALL INDIAN NET		0	1	1	6	0	0	8	0.129
HATCHERIES									
WELLS H.		0	0	1	0	0	0	1	0.016
PRIEST RAPIDS H.		0	0	1	0	0	0	1	0.016
STREAM SURVEY		0	0	0	0	0	0	0	0.000
TOTALS		0	7	9	23	0	0	39	0.628
PERCENT OF RECOVERY	%	0.0	17.9	23.1	59.0	0.0	0.0		

Appendix Table 18.0.--Summary of all recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam in 1983.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8301A 8301B

1983 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAF 1 RAF 2 RAF 3 RAF 4
Wire Codes Used: 231621 231621 231622 231622

NUMBER RELEASED: 44648

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	1	3	5	0	0	9	0.020
MCNARY TRAP	0	0	0	3	0	0	3	0.007
LOWER GRANITE TRAP	0	10	99	16	0	0	125	0.280
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	1	0	0	0	1	0.002
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	1	8	0	0	0	9	0.020
RIVER COMMERCIAL								
COL. R. TEST FSHRY (ORE)	0	0	1	0	0	0	1	0.002
INDIAN FISHERY								
INDIAN TERMINAL	0	0	4	0	0	0	4	0.009
INDIAN CEREMONIAL	0	0	1	0	0	0	1	0.002
HATCHERIES								
DWORSHAK H.	0	0	1	2	0	0	3	0.007
PAHSIMEROI H.	0	0	2	0	0	0	2	0.004
RAPID RIVER H.	0	5	15	2	0	0	22	0.049
HELLS CANYON (OXBOW) H.	0	0	1	0	0	0	1	0.002
LITTLE WHITE H.	0	0	0	1	0	0	1	0.002
DESCHUTES R. HATCHERIES	0	0	4	0	0	0	4	0.009
HATCHERIES (GENERAL)	0	0	3	0	0	0	3	0.007
STREAM SURVEY								
OTHER STREAMS	0	0	1	0	0	0	1	0.002
TOTALS	0	17	144	29	0	0	190	0.426
PERCENT OF RECOVERY %	0.0	8.9	75.8	15.3	0.0	0.0		

Appendix Table 18.1.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 21-27 April 1983.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8301A

1983 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAF 1 RAF 2
Wire Codes Used: 231621 231621

NUMBER RELEASED: 24792

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	0	1	2	0	0	3	0.012
MCNARY TRAP	0	0	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	4	52	6	0	0	62	0.250
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	1	0	0	0	1	0.004
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	1	6	0	0	0	7	0.028
RIVER COMMERCIAL								
COL. R. TEST FSHRY (ORE)	0	0	1	0	0	0	1	0.004
INDIAN FISHERY								
INDIAN TERMINAL	0	0	4	0	0	0	4	0.016
HATCHERIES								
DWORSHAK H.	0	0	0	2	0	0	2	0.008
PAHSIMEROI H.	0	0	1	0	0	0	1	0.004
RAPID RIVER H.	0	4	11	2	0	0	17	0.069
HELLS CANYON (OXBOW) H.	0	0	1	0	0	0	1	0.004
LITTLE WHITE H.	0	0	0	1	0	0	1	0.004
DESCHUTES R. HATCHERIES	0	0	2	0	0	0	2	0.008
HATCHERIES (GENERAL)	0	0	2	0	0	0	2	0.008
STREAM SURVEY	0	0	0	0	0	0	0	0.000
TOTALS	0	9	82	13	0	0	104	0.419
PERCENT OF RECOVERY %	0.0	8.7	78.8	12.5	0.0	0.0		

Appendix Table 18.2.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 29 April to 25 May 1983.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8301B

1983 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAF 3 RAF 4
Wire Codes Used: 231622 231622

NUMBER RELEASED: 19856

RECOVERY AREA	YEAR OF RETURN 1983	1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP	0	1	2	3	0	0	6	0.030
MCNARY TRAP	0	0	0	3	0	0	3	0.015
LOWER GRANITE TRAP	0	6	47	10	0	0	63	0.317
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0	0.000
RIVER SPORT								
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0	0.000
SNAKE R.	0	0	2	0	0	0	2	0.010
RIVER COMMERCIAL	0	0	0	0	0	0	0	0.000
INDIAN FISHERY								
INDIAN CEREMONIAL	0	0	1	0	0	0	1	0.005
HATCHERIES								
DWORSHAK H.	0	0	1	0	0	0	1	0.005
PAHSIMEROI H.	0	0	1	0	0	0	1	0.005
RAPID RIVER H.	0	1	4	0	0	0	5	0.025
DESCHUTES R. HATCHERIES	0	0	2	0	0	0	2	0.010
HATCHERIES (GENERAL)	0	0	1	0	0	0	1	0.005
STREAM SURVEY								
OTHER STREAMS	0	0	1	0	0	0	1	0.005
TOTALS	0	8	62	16	0	0	86	0.433
PERCENT OF RECOVERY %	0.0	9.3	72.1	18.6	0.0	0.0		

Appendix Table 19.0.--Summary of all recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam in 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8410A 8410B 8410C 8410D

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAL 1 RAL 1 RAL 1 RAL 2 RAL 2 RAL 3 RAL 4
Wire Codes Used: 231641 231642 231643 231649 231650 231648 231647

NUMBER RELEASED: 46173

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	1	7	1	0	9	0.019
MCNARY TRAP	0	0	6	0	0	6	0.013
LOWER GRANITE TRAP	0	11	40	24	0	75	0.162
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0.000
RIVER SPORT							
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0.000
SNAKE R.	0	0	7	0	0	7	0.015
RIVER COMMERCIAL							
COL. R. TEST FSHRY (ORE)	0	0	1	1	0	2	0.004
INDIAN FISHERY							
INDIAN CEREMONIAL	0	0	2	0	0	2	0.004
HATCHERIES							
PAHSIMEROI H.	0	0	1	6	0	7	0.015
RAPID RIVER H.	0	1	4	2	0	7	0.015
MCCALL H.	0	0	1	0	0	1	0.002
HELLS CANYON (OXBOW) H.	0	0	0	1	0	1	0.002
DESCHUTES R. HATCHERIES	0	0	2	0	0	2	0.004
LEAVENWORTH H.	0	0	1	0	0	1	0.002
STREAM SURVEY							
OTHER STREAMS	0	0	1	0	0	1	0.002
TOTALS	0	13	74	36	0	123	0.266
PERCENT OF RECOVERY %	0.0	10.6	60.2	29.3	0.0		

Appendix Table 19.1.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 16-21 April 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8410A

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAL 1 RAL 1 RAL 1
Wire Codes Used: 231641 231642 231643

NUMBER RELEASED: 10155

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	0	1	0	0	1	0.010
MCNARY TRAP	0	0	1	0	0	1	0.010
LOWER GRANITE TRAP	0	0	1	0	0	1	0.010
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0	0.000
RIVER COMMERCIAL							
COL. R. TEST FSHRY (ORE)	0	0	0	1	0	1	0.010
INDIAN FISHERY	0	0	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0	0	0.000
TOTALS	0	0	3	1	0	4	0.039
PERCENT OF RECOVERY %	0.0	0.0	75.0	25.0	0.0		

Appendix Table 19.2.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 23-28 Arpil 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8410B

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAL 2 RAL 2
Wire Codes Used: 231649 231650

NUMBER RELEASED: 27713

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	0	3	1	0	4	0.014
MCNARY TRAP	0	0	4	0	0	4	0.014
LOWER GRANITE TRAP	0	7	23	14	0	44	0.159
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0.000
RIVER SPORT							
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0.000
SNAKE R.	0	0	3	0	0	3	0.011
RIVER COMMERCIAL							
COL. R. TEST FSHRY (ORE)	0	0	1	0	0	1	0.004
INDIAN FISHERY							
INDIAN CEREMONIAL	0	0	1	0	0	1	0.004
HATCHERIES							
PAHSIMERDI H.	0	0	1	3	0	4	0.014
RAPID RIVER H.	0	0	3	2	0	5	0.018
HELLS CANYON (OXBOW) H.	0	0	0	1	0	1	0.004
LEAVENWORTH H.	0	0	1	0	0	1	0.004
STREAM SURVEY							
OTHER STREAMS	0	0	1	0	0	1	0.004
TOTALS	0	7	41	21	0	69	0.249
PERCENT OF RECOVERY %	0.0	10.1	59.4	30.4	0.0		

Appendix Table 19.3.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 29 April to 3 May 1983.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8410C

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAL 3
Wire Codes Used: 231648

NUMBER RELEASED: 5193

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	0	1	0	0	1	0.019
MCNARY TRAP	0	0	1	0	0	1	0.019
LOWER GRANITE TRAP	0	1	8	9	0	18	0.347
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0.000
RIVER SPORT							
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0.000
SNAKE R.	0	0	4	0	0	4	0.077
RIVER COMMERCIAL	0	0	0	0	0	0	0.000
INDIAN FISHERY							
INDIAN CEREMONIAL	0	0	1	0	0	1	0.019
HATCHERIES							
PAHSIMEROI H.	0	0	0	3	0	3	0.058
RAPID RIVER H.	0	0	1	0	0	1	0.019
DESCHUTES R. HATCHERIES	0	0	1	0	0	1	0.019
STREAM SURVEY	0	0	0	1	0	1	0.019
TOTALS	0	1	17	13	0	31	0.597
PERCENT OF RECOVERY %	0.0	3.2	54.8	41.9	0.0		

Appendix Table 19.4.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 5-15 May 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8410D

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAL 4
Wire Codes Used: 231647

NUMBER RELEASED: 3112

RECOVERY AREA		YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS								
BONNEVILLE TRAP		0	1	2	0	0	3	0.096
MCNARY TRAP		0	0	0	0	0	0	0.000
LOWER GRANITE TRAP		0	3	8	1	0	12	0.386
PRIEST RAPIDS TRAP		0	0	0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0	0	0.000
HATCHERIES								
RAPID RIVER H.		0	1	0	0	0	1	0.032
MCCALL H.		0	0	1	0	0	1	0.032
DESCHUTES R. HATCHERIES		0	0	1	0	0	1	0.032
STREAM SURVEY		0	0	1	0	0	1	0.032
TOTALS		0	5	13	1	0	19	0.611
PERCENT OF RECOVERY	%	0.0	26.3	68.4	5.3	0.0		

Appendix Table 20.0.--Summary of all recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam in 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8510A 8510B 8510C 8510D 8510E

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAPI1 RAPI2 RAPI2 RAPI3 RAPI4 LAPI1
Wire Codes Used: 231807 231808 231809 231814 231815 231816

NUMBER RELEASED: 45420

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	2	17	0	19	0.042
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	11	52	0	63	0.139
PRIEST RAPIDS TRAP	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0.000
SNAKE R.	0	0	1	0	1	0.002
RIVER COMMERCIAL						
COL. R. TEST FSHRY (ORE)	0	0	1	0	1	0.002
INDIAN FISHERY						
INDIAN FISHERY	0	0	1	0	1	0.002
HATCHERIES						
DWORSHAK H.	0	0	5	0	5	0.011
PAHSIMEROI H.	0	0	1	0	1	0.002
RAPID RIVER H.	0	1	5	0	6	0.013
MCCALL H.	0	1	3	0	4	0.009
HELLS CANYON (OXBOW) H.	0	0	1	0	1	0.002
	0	1	6	0	7	0.015
HATCHERIES (GENERAL)	0	0	1	0	1	0.002
STREAM SURVEY	0	1	2	0	3	0.007
TOTALS	0	17	96	0	113	0.249
PERCENT OF RECOVERY %	0.0	15.0	85.0	0.0		

Appendix Table 20.1.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 12-18 April 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8510A

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAPI1
Wire Codes Used: 231807

NUMBER RELEASED: 9893

RECOVERY AREA		YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP		0	0	1	0	1	0.010
MCNARY TRAP		0	0	0	0	0	0.000
LOWER GRANITE TRAP		0	0	6	0	6	0.061
PRIEST RAPIDS TRAP		0	0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0	0.000
HATCHERIES							
MCCALL H.		0	1	1	0	2	0.020
STREAM SURVEY		0	0	0	0	0	0.000
TOTALS		0	1	8	0	9	0.091
PERCENT OF RECOVERY	%	0.0	11.1	88.9	0.0		

Appendix Table 20.2.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 19-26 April 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8510B

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAPI2 RAPI2
Wire Codes Used: 231808 231809

NUMBER RELEASED: 17414

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	0	9	0	9	0.052
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	3	19	0	22	0.126
PRIEST RAPIDS TRAP	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0.000
SNAKE R.	0	0	1	0	1	0.006
RIVER COMMERCIAL						
COL. R. TEST FSHRY (ORE)	0	0	1	0	1	0.006
INDIAN FISHERY						
INDIAN FISHERY	0	0	1	0	1	0.006
HATCHERIES						
DWORSHAK H.	0	0	3	0	3	0.017
RAPID RIVER H.	0	0	4	0	4	0.023
	0	1	3	0	4	0.023
STREAM SURVEY	0	1	0	0	1	0.006
TOTALS	0	5	41	0	46	0.264
PERCENT OF RECOVERY %	0.0	10.9	89.1	0.0		

Appendix Table 20.3.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 29 April to 3 May 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8510C

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAPI3
Wire Codes Used: 231814

NUMBER RELEASED: 9539

RECOVERY AREA		YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP		0	0	5	0	5	0.052
MCNARY TRAP		0	0	0	0	0	0.000
LOWER GRANITE TRAP		0	2	9	0	11	0.115
PRIEST RAPIDS TRAP		0	0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0	0.000
HATCHERIES							
DWORSHAK H.		0	0	2	0	2	0.021
RAPID RIVER H.		0	0	1	0	1	0.010
		0	0	3	0	3	0.031
STREAM SURVEY		0	0	1	0	1	0.010
TOTALS		0	2	21	0	23	0.241
PERCENT OF RECOVERY	%	0.0	8.7	91.3	0.0		

Appendix Table 20.4.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 6-14 May 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8510D

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RAPI4
Wire Codes Used: 231815

NUMBER RELEASED: 3724

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	0	1	0	1	0.027
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	1	8	0	9	0.242
PRIEST RAPIDS TRAP	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0	0.000
HATCHERIES						
HELLS CANYON (OXBOW) H.	0	0	1	0	1	0.027
STREAM SURVEY	0	0	1	0	1	0.027
TOTALS	0	1	11	0	12	0.322
PERCENT OF RECOVERY %	0.0	8.3	91.7	0.0		

Appendix Table 20.5.--Recoveries of adult spring chinook salmon transported by barge from Lower Grantie Dam to below Bonneville Dam from 15-22 May 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8510E

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: LAPI1
Wire Codes Used: 231816

NUMBER RELEASED: 4850

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	2	1	0	3	0.062
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	5	10	0	15	0.309
PRIEST RAPIDS TRAP	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0	0.000
HATCHERIES						
PAHSIMEROI H.	0	0	1	0	1	0.021
RAPID RIVER H.	0	1	0	0	1	0.021
MCCALL H.	0	0	2	0	2	0.041
HATCHERIES (GENERAL)	0	0	1	0	1	0.021
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	8	15	0	23	0.474
PERCENT OF RECOVERY %	0.0	34.8	65.2	0.0		

Appendix Table 21.0.--Summary of all recoveries of adult steelhead trnasported by barge from Lower Granite Dam to below Bonneville Dam in 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8405A 8405B 8405C 8405D

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 1 RAL 1 RAL 2 RAL 3 RAL 4 RA7F1
Wire Codes Used: 231644 231645 231646 231651 231652 231652

NUMBER RELEASED: 33529

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	30	90	2	0	122	0.364
MCNARY TRAP	0	2	3	0	0	5	0.015
LOWER GRANITE TRAP	0	263	388	9	0	660	1.968
PRIEST RAPIDS TRAP	0	0	1	0	0	1	0.003
OCEAN FISHERIES							
ALASKA	0	0	0	0	0	0	0.000
BRITISH COLUMBIA	0	0	1	0	0	1	0.003
WASHINGTON	0	0	0	0	0	0	0.000
OREGON	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0.000
RIVER SPORT							
COLUMBIA R. BELOW SNAKE R.	0	1	0	0	0	1	0.003
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0.000
SNAKE R.	0	41	53	1	0	95	0.283
CLEARWATER R.	0	11	72	0	0	83	0.248
OTHER RIVERS	0	5	0	0	0	5	0.015
RIVER COMMERCIAL	0	0	0	0	0	0	0.000
INDIAN FISHERY							
INDIAN FISHERY	0	1	0	0	0	1	0.003
FALL INDIAN NET	0	13	33	2	0	48	0.143
SUMMER INDIAN NET	0	1	1	0	0	2	0.006
INDIAN CEREMONIAL	0	0	1	0	0	1	0.003
CLEARWATER INDIAN	1	0	0	0	0	1	0.003
HATCHERIES							
DWORSHAK H.	0	11	51	0	0	62	0.185
PAHSIMEROI H.	0	16	5	0	0	21	0.063
HELLS CANYON (OXBOW) H.	0	2	3	0	0	5	0.015
KOOSKIA H.	0	1	1	0	0	2	0.006
HATCHERIES (GENERAL)	0	0	1	0	0	1	0.003
STREAM SURVEY	0	0	3	0	0	3	0.009
TOTALS	1	398	707	14	0	1120	3.340
PERCENT OF RECOVERY %	0.1	35.5	63.1	1.2	0.0		

Appendix Table 21.1.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 23-29 April 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8405A

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 1 RAL 1
Wire Codes Used: 231644 231645

NUMBER RELEASED: 8607

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	8	23	0	0	31	0.360
MCNARY TRAP	0	0	2	0	0	2	0.023
LOWER GRANITE TRAP	0	62	80	0	0	142	1.650
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0.000
RIVER SPORT							
COLUMBIA R. BELOW SNAKE R.	0	1	0	0	0	1	0.012
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0.000
SNAKE R.	0	10	11	1	0	22	0.256
CLEARWATER R.	0	3	13	0	0	16	0.186
OTHER RIVERS	0	1	0	0	0	1	0.012
RIVER COMMERCIAL	0	0	0	0	0	0	0.000
INDIAN FISHERY							
FALL INDIAN NET	0	2	7	0	0	9	0.105
HATCHERIES							
DWORSHAK H.	0	1	19	0	0	20	0.232
PAHSIMEROI H.	0	4	0	0	0	4	0.046
HELLS CANYON (OXBOW) H.	0	0	1	0	0	1	0.012
STREAM SURVEY	0	0	1	0	0	1	0.012
TOTALS	0	92	157	1	0	250	2.905
PERCENT OF RECOVERY %	0.0	36.8	62.8	0.4	0.0		

Appendix Table 21.2.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 30 April to 5 May 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8405B

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 2
Wire Codes Used: 231646

NUMBER RELEASED: 5185

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	5	14	1	0	20	0.386
MCNARY TRAP	0	1	0	0	0	1	0.019
LOWER GRANITE TRAP	0	42	72	3	0	117	2.257
PRIEST RAPIDS TRAP	0	0	1	0	0	1	0.019
OCEAN FISHERIES	0	0	0	0	0	0	0.000
RIVER SPORT							
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0.000
SNAKE R.	0	3	11	0	0	14	0.270
CLEARWATER R.	0	2	10	0	0	12	0.231
OTHER RIVERS	0	2	0	0	0	2	0.039
RIVER COMMERCIAL	0	0	0	0	0	0	0.000
INDIAN FISHERY							
INDIAN FISHERY	0	1	0	0	0	1	0.019
FALL INDIAN NET	0	2	4	1	0	7	0.135
SUMMER INDIAN NET	0	1	0	0	0	1	0.019
CLEARWATER INDIAN	1	0	0	0	0	1	0.019
HATCHERIES							
DWORSHAK H.	0	3	6	0	0	9	0.174
PAHSIMEROI H.	0	2	0	0	0	2	0.039
HELLS CANYON (OXBOW) H.	0	0	1	0	0	1	0.019
HATCHERIES (GENERAL)	0	0	1	0	0	1	0.019
STREAM SURVEY	0	0	0	0	0	0	0.000
TOTALS	1	64	120	5	0	190	3.664
PERCENT OF RECOVERY %	0.5	33.7	63.2	2.6	0.0		

Appendix Table 21.3.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 6-12 May 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8405C

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 3
Wire Codes Used: 231651

NUMBER RELEASED: 7795

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	10	19	0	0	29	0.372
MCNARY TRAP	0	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	47	95	2	0	144	1.847
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0	0.000
RIVER SPORT							
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0.000
SNAKE R.	0	5	9	0	0	14	0.180
CLEARWATER R.	0	2	26	0	0	28	0.359
OTHER RIVERS	0	1	0	0	0	1	0.013
RIVER COMMERCIAL	0	0	0	0	0	0	0.000
INDIAN FISHERY							
FALL INDIAN NET	0	3	6	1	0	10	0.128
HATCHERIES							
DWORSHAK H.	0	4	6	0	0	10	0.128
PAHSIMEROI H.	0	1	0	0	0	1	0.013
HELLS CANYON (OXBOW) H.	0	2	1	0	0	3	0.038
KOOSKIA H.	0	1	0	0	0	1	0.013
STREAM SURVEY	0	0	2	0	0	2	0.026
TOTALS	0	76	164	3	0	243	3.117
PERCENT OF RECOVERY %	0.0	31.3	67.5	1.2	0.0		

Appendix Table 21.4.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 14-27 May 1984.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8405D

1984 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 4 RA7F1
Wire Codes Used: 231652 231652

NUMBER RELEASED: 11942

RECOVERY AREA	YEAR OF RETURN 1984	1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS							
BONNEVILLE TRAP	0	7	34	1	0	42	0.352
MCNARY TRAP	0	1	1	0	0	2	0.017
LOWER GRANITE TRAP	0	112	141	4	0	257	2.152
PRIEST RAPIDS TRAP	0	0	0	0	0	0	0.000
OCEAN FISHERIES							
ALASKA	0	0	0	0	0	0	0.000
BRITISH COLUMBIA	0	0	1	0	0	1	0.008
WASHINGTON	0	0	0	0	0	0	0.000
OREGON	0	0	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0	0	0.000
OTHER	0	0	0	0	0	0	0.000
RIVER SPORT							
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0	0.000
SNAKE R.	0	23	22	0	0	45	0.377
CLEARWATER R.	0	4	23	0	0	27	0.226
OTHER RIVERS	0	1	0	0	0	1	0.008
RIVER COMMERCIAL	0	0	0	0	0	0	0.000
INDIAN FISHERY							
FALL INDIAN NET	0	6	16	0	0	22	0.184
SUMMER INDIAN NET	0	0	1	0	0	1	0.008
INDIAN CEREMONIAL	0	0	1	0	0	1	0.008
HATCHERIES							
DWORSHAK H.	0	3	20	0	0	23	0.193
PAHSIMEROI H.	0	9	5	0	0	14	0.117
KOOSKIA H.	0	0	1	0	0	1	0.008
STREAM SURVEY	0	0	0	0	0	0	0.000
TOTALS	0	166	266	5	0	437	3.659
PERCENT OF RECOVERY %	0.0	38.0	60.9	1.1	0.0		

Appendix Table 22.0.--Summary of all recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam in 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8509A 8509B 8509C 8509D 8509E

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAPI1 RAPI2 RAPI3 RAPI4 LAPI1
Wire Codes Used: 231817 231810 231811 231812 231813

NUMBER RELEASED: 30041

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	48	14	0	62	0.206
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	216	120	0	336	1.118
PRIEST RAPIDS TRAP	0	0	1	0	1	0.003
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0.000
SNAKE R.	0	29	0	0	29	0.097
CLEARWATER R.	0	1	1	0	2	0.007
OTHER RIVERS	0	1	0	0	1	0.003
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY						
FALL INDIAN NET	0	8	11	0	19	0.063
HATCHERIES						
PAHSIMERDI H.	0	6	0	0	6	0.020
HELLS CANYON (OXBOW) H.	0	6	1	0	7	0.023
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	315	148	0	463	1.541
PERCENT OF RECOVERY %	0.0	68.0	32.0	0.0		

Appendix Table 22.0.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 20-26 April 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8509A

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAPI1
Wire Codes Used: 231817

NUMBER RELEASED: 1635

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	4	3	0	7	0.428
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	14	10	0	24	1.468
PRIEST RAPIDS TRAP	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0.000
SNAKE R.	0	1	0	0	1	0.061
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY						
FALL INDIAN NET	0	0	1	0	1	0.061
HATCHERIES						
PAHSIMEROI H.	0	1	0	0	1	0.061
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	20	14	0	34	2.080
PERCENT OF RECOVERY %	0.0	58.8	41.2	0.0		

Appendix Table 22.2.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 29 April to 3 May 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8509B

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAPI2
Wire Codes Used: 231810

NUMBER RELEASED: 3084

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	1	1	0	2	0.065
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	41	21	0	62	2.010
PRIEST RAPIDS TRAP	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0.000
SNAKE R.	0	4	0	0	4	0.130
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY						
FALL INDIAN NET	0	1	1	0	2	0.065
HATCHERIES						
PAHSIMERDI H.	0	2	0	0	2	0.065
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	49	23	0	72	2.335
PERCENT OF RECOVERY %	0.0	68.1	31.9	0.0		

Appendix Table 22.3.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 6-10 May 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8509C

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAPI3
Wire Codes Used: 231811

NUMBER RELEASED: 7640

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	21	2	0	23	0.301
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	52	36	0	88	1.152
PRIEST RAPIDS TRAP	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0.000
SNAKE R.	0	9	0	0	9	0.118
CLEARWATER R.	0	1	0	0	1	0.013
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY						
FALL INDIAN NET	0	2	3	0	5	0.065
HATCHERIES						
PAHSIMEROI H.	0	1	0	0	1	0.013
HELLS CANYON (OXBOW) H.	0	2	0	0	2	0.026
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	88	41	0	129	1.688
PERCENT OF RECOVERY %	0.0	68.2	31.8	0.0		

Appendix Table 22.4.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 13-17 May 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8509D

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAPI4
Wire Codes Used: 231812

NUMBER RELEASED: 8855

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	13	3	0	16	0.181
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	60	34	0	94	1.062
PRIEST RAPIDS TRAP	0	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0.000
SNAKE R.	0	6	0	0	6	0.068
CLEARWATER R.	0	0	1	0	1	0.011
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY						
FALL INDIAN NET	0	3	4	0	7	0.079
HATCHERIES						
PAHSIMEROI H.	0	1	0	0	1	0.011
HELLS CANYON (OXBOW) H.	0	1	1	0	2	0.023
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	84	43	0	127	1.434
PERCENT OF RECOVERY %	0.0	66.1	33.9	0.0		

Appendix Table 22.5.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 18-25 May 1985.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8509E

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: LAPI1
Wire Codes Used: 231813

NUMBER RELEASED: 8827

RECOVERY AREA	YEAR OF RETURN 1985	1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	9	5	0	14	0.159
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	49	19	0	68	0.770
PRIEST RAPIDS TRAP	0	0	1	0	1	0.011
OCEAN FISHERIES	0	0	0	0	0	0.000
RIVER SPORT						
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0	0.000
SNAKE R.	0	9	0	0	9	0.102
OTHER RIVERS	0	1	0	0	1	0.011
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY						
FALL INDIAN NET	0	2	2	0	4	0.045
HATCHERIES						
PAHSIMERDI H.	0	1	0	0	1	0.011
HELLS CANYON (OXBOW) H.	0	3	0	0	3	0.034
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	74	27	0	101	1.144
PERCENT OF RECOVERY %	0.0	73.3	26.7	0.0		

Appendix Table 23.0.--Summary of all recoveries of adult spring chinook salmon released as controls below Little Goose Dam in 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8614A 8614B 8614C 8614D 8614E 8614F 8614G 8614H 8614I

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

SPRING CHINOOK

Brands Used:	LAP 1	LAP 2	LAP 3	LAP 4	LAW 1	LAW 2	LAW 3	LAW 4	LAL 1
Hire Codes Used:	231902	231903	231904	231905	231906	231907	231908	231909	231863

NUMBER RELEASED: 45035

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	2	0	2	0.004
PRIEST RAPIDS TRAP	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES					
RAPID RIVER H.	0	2	0	2	0.004
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	4	0	4	0.009
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table 240.--Summary of all recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam in 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8612A 8612B 8612C 8612D 8612E 8612F 8612G 8612H 8612I

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used:	RAL 1	RAL 2	RAL 3	RAL 4	RAV 1	RAV 2	RAV 3	RAV 4	RAP 1
Wire Codes Used:	231910	231911	231912	231913	231914	231915	231916	231917	231918

NUMBER RELEASED: 45004

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	7	0	7	0.016
PRIEST RAPIDS TRAP	0	0	0	0	0.000
OCEAN FISHERIES					
ALASKA	0	0	0	0	0.000
BRITISH COLUMBIA	0	0	0	0	0.000
WASHINGTON	0	0	0	0	0.000
OREGON	0	1	0	1	0.002
CALIFORNIA	0	0	0	0	0.000
OTHER	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES					
RAPID RIVER H.	0	1	0	1	0.002
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	9	0	9	0.020
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table 25.0.--Summary of all recoveries of adult steelhead released as juveniles below Little Goose Dam in 1986

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8611A 8611B 8611C 8611D 8611E 8611F 8611G 8611H

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAP 1 LAP 2 LAP 3 LAP 4 LAW 1 LAW 2 LAW 3 LAW 4
Wire Codes Used: 231902 231903 231904 231915 231905 231906 231907 231908

NUMBER RELEASED: 31414

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	1	0	1	0.003
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	57	0	57	0.181
PRIEST RAPIDS TRAP	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	58	0	58	0.185
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table25.1.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 15-27 April, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8611A

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAP 1
Wire Codes Used: 231982

NUMBER RELEASED: 4319

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	0	0	0	0.000
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	25	0	25	0.579
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	25	0	25	0.579
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 25.2.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 29 April to 1 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8611B

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAP 2
Wire Codes Used: 231903

NUMBER RELEASED: 4176

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	0	0	0	0.000
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	9	0	9	0.216
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	9	0	9	0.216
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 25.3.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 1-8 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8611C

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAP 3
Wire Codes Used: 231904

NUMBER RELEASED: 4966

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	0	0	0	0.000
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	1	0	1	0.020
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	1	0	1	0.020
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 25.4.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 8-13 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8611D

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAP 4
Wire Codes Used: 231915

NUMBER RELEASED: 4150

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	1	0	1	0.024
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	6	0	6	0.145
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	7	0	7	0.169
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table25.5.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 13-17 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8611E

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAW 1
Wire Codes Used: 231905

NUMBER RELEASED: 4249

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	0	0	0	0.000
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	6	0	6	0.141
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	6	0	6	0.141
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table25.6.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 17-22 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8611F

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAW 2
Wire Codes Used: 231906

NUMBER RELEASED: 4250

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	0	0	0	0.000
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	7	0	7	0.165
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	7	0	7	0.165
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 25.7.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 22-27 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 86116

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAW 3
Wire Codes Used: 231907

NUMBER RELEASED: 4250

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	1	0	1	0.024
PRIEST RAPIDS TRAP	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	1	0	1	0.024
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table25.8.--Recoveries of adult steelhead released as juveniles below Little Goose Dam on 27 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8611H

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE

STEELHEAD

Brands Used: LAW 4
Wire Codes Used: 231908

NUMBER RELEASED: 1054

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	0	0	0	0.000
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	2	0	2	0.190
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	2	0	2	0.190
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 26.0.--Summary of all recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam in 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8613A 8613B 8613C 8613D 8613E 8613F 8613G

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 1 RAL 2 RAL 3 RAL 4 RAV 1 RAV 2 RAV 3
Wire Codes Used: 231910 231911 231912 231913 231914 231916 231917

NUMBER RELEASED: 30659

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	10	0	10	0.033
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	73	0	73	0.238
PRIEST RAPIDS TRAP	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	83	0	83	0.271
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table 26.1.--Recoveries of adult steelhead transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 16-28 April, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8613A

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 1
Wire Codes Used: 231910

NUMBER RELEASED: 4904

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	1	0	1	0.020
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	27	0	27	0.551
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	28	0	28	0.571
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 26.2.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 28-30 April, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8613B

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 2
Wire Codes Used: 231911

NUMBER RELEASED: 4250

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	0	0	0	0.000
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	5	0	5	0.118
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	5	0	5	0.118
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 26.3.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 2-9 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8613C

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 3
Wire Codes Used: 231912

NUMBER RELEASED: 4247

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	3	0	3	0.071
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	10	0	10	0.235
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	13	0	13	0.306
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 26.4.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 9-14 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8613D

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAL 4
Wire Codes Used: 231913

NUMBER RELEASED: 4250

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	2	0	2	0.047
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	6	0	6	0.141
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	8	0	8	0.188
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 26.5.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 14-19 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8613E

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAV 1
Wire Codes Used: 231914

NUMBER RELEASED: 4244

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	3	0	3	0.071
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	10	0	10	0.236
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	13	0	13	0.306
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 26.6.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 19-23 May, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8613F

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAV 2
Wire Codes Used: 231916

NUMBER RELEASED: 4514

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	0	0	0	0.000
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	11	0	11	0.244
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	11	0	11	0.244
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 26.7.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 23 May to 3 June, 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 86136

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE

STEELHEAD

Brands Used: RAV 3
Wire Codes Used: 231917

NUMBER RELEASED: 4250

RECOVERY AREA		YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP		0	1	0	1	0.024
MCNARY TRAP		0	0	0	0	0.000
LOWER GRANITE TRAP		0	4	0	4	0.094
PRIEST RAPIDS TRAP		0	0	0	0	0.000
OCEAN FISHERIES		0	0	0	0	0.000
RIVER SPORT		0	0	0	0	0.000
RIVER COMMERCIAL		0	0	0	0	0.000
INDIAN FISHERY		0	0	0	0	0.000
HATCHERIES		0	0	0	0	0.000
STREAM SURVEY		0	0	0	0	0.000
TOTALS		0	5	0	5	0.118
PERCENT OF RECOVERY	%	0.0	100.0	0.0		

Appendix Table 27.0.--Summary of all recoveries of adult spring chinook salmon released as juveniles below McNary Dam in 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8602A 8602B 8602C 8602D 8602E 8602F 8602G 8602H 8602I 8602J

1986 MCNARY TRANS CONTROL BELOW MCNARY

SPRING CHINOOK

Brands Used:	LA153	LAIV3	LAID3	LAIM3	LAIF3	LA151	LAIV1	LAID1	LAIM1	LAIF1
Wire Codes Used:	231729	231845	231847	231849	231851	231853	231855	231857	231859	231919

NUMBER RELEASED: 50273

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	1	0	1	0.002
OCEAN FISHERIES	0	0	0	0	0.000
RIVER SPORT					
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	0	0	0	0.000
WENATCHEE R.	0	1	0	1	0.002
SNAKE R.	0	0	0	0	0.000
COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	2	0	2	0.004
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table 28.0.--Summary of all recoveries of adult spring chinook salmon transported from McNary Dam to below Bonneville Dam in 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8601A 8601B 8601C 8601D 8601E 8601F 8601G 8601H 8601I 8601J

1986 MCNARY TRANS BARGE BELOW BONNEVILLE

SPRING CHINOOK

Brands Used:	RAIU1	RAIC3	RAIF1	RAID1	RAIM1	RAIU3	LAIU3	RAIF3	RAID3	RAIM3
Wire Codes Used:	231846	231848	231850	231852	231854	231856	231858	231860	231861	231920

NUMBER RELEASED: 49274

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	1	0	1	0.002
OCEAN FISHERIES	0	0	0	0	0.000
RIVER SPORT	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES					
LEAVENWORTH H.	0	1	0	1	0.002
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	2	0	2	0.004
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table 29.0.--Summary of all recoveries of adult fall chinook salmon released as juveniles below McNary Dam in 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8615A 8615B 8615C 8615D 8615E 8615F 8615G 8615H 8615I 8615J 8615K 8615L

1986 MCNARY TRANS CONTROL BELOW MCNARY

FALL CHINOOK

Brands Used: LA173 LA3X3 LA3J3 LA3C3 LA3L3 LA7H3 LA103 LA7H1 LA101 LA171 LA3X1 LA3L1
Wire Codes Used: 231921 231923 231925 231927 231929 231931 231933 231935 231937 231939 231941 231844

NUMBER RELEASED: 115991

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0	0.000
RIVER SPORT					
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	1	0	1	0.001
WENATCHEE R.	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0.000
STREAM SURVEY					
OTHER STREAMS	0	1	0	1	0.001
TOTALS	0	2	0	2	0.002
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table 30.0.--Summary of all recoveries of adult fall chinook salmon transported as juveniles from McNary Dam to below Bonneville Dam in 1986.

Master File Date : 3 February 1988
RELEASE GROUPS INCLUDED: 8616A 8616B 8616C 8616D 8616E 8616F 8616G 8616H 8616I 8616J 8616K 8616L

1986 MCNARY TRANS BARGE BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RA171 RA3X1 RA3J1 RA3C1 RA3L1 RA7H1 RA101 RA7H3 RA103 RA173 RA3J3 RA3C3
Hire Codes Used: 231922 231924 231926 231928 231930 231932 231934 231936 231938 231940 231942 231832

NUMBER RELEASED: 114653

RECOVERY AREA	YEAR OF RETURN 1986	1987	1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	0	0	0.000
PRIEST RAPIDS TRAP	0	0	0	0	0.000
OCEAN FISHERIES					
ALASKA	0	0	0	0	0.000
BRITISH COLUMBIA	0	2	0	2	0.002
WASHINGTON	0	0	0	0	0.000
OREGON	0	0	0	0	0.000
CALIFORNIA	0	0	0	0	0.000
OTHER	0	0	0	0	0.000
RIVER SPORT					
COLUMBIA R. BELOW SNAKE R.	0	0	0	0	0.000
COLUMBIA R. ABOVE SNAKE R.	0	3	0	3	0.003
WENATCHEE R.	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0.000
RIVER COMMERCIAL					
COMMERCIAL NET	0	3	0	3	0.003
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	8	0	8	0.007
PERCENT OF RECOVERY %	0.0	100.0	0.0		

Appendix Table 31.--The length, weight, BKD lesion incidence, BKD/FAT and BKD/ELISA values by date for individual spring chinook salmon smolts sampled from the Lower Granite Dam daily facility sample in 1987. Table also includes hatchery, stock, release site, and release date information for marked fish included in the samples.

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolts

H	SAMPLE DATE (1987)	SAMPLE SITE	CWT DATA-HATCHERY	STOCK	RELEASE SITE	RELEASE DATE	LENGTH (MM)	WEIGHT (G)	SUSPECTED BKD LESIONS	FAT COUNTS/ 100 FIELDS	FAT TNTC	ELISA O.D.	CORRECTED ELISA O.D.	BKD POSITIVE BY ELISA
1	4/9	Fingerling facility					146	28.6		1		0.072	0.072	
2	4/9	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	195	78.7		0		0.066	0.066	
3	4/9	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	178	61.1		0		0.073	0.073	
4	4/9	Fingerling facility					116	13.6		0		0.079	0.079	BKD ELISA +
5	4/9	Fingerling facility					127	19.0		0		0.070	0.070	
6	4/9	Fingerling facility					126	19.7	sp	204		0.300	0.300	BKD ELISA +
7	4/9	Fingerling facility					151	30.2		0		0.075	0.075	
8	4/9	Fingerling facility					162	42.8		0		0.075	0.075	
9	4/9	Fingerling facility					106	14.0		0		0.069	0.069	
10	4/9	Fingerling facility					111	15.3		0		0.069	0.069	
11	4/9	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	178	65.1		0		0.070	0.070	
12	4/9	Fingerling facility					120	16.1		5		0.097	0.097	BKD ELISA +
13	4/9	Fingerling facility					131	20.9		0		0.065	0.065	
14	4/9	Fingerling facility					134	21.9		0		0.082	0.082	BKD ELISA +
15	4/9	Fingerling facility					140	24.1		0		0.078	0.078	BKD ELISA +
16	4/9	Fingerling facility					122	17.4	k	0		0.083	0.083	BKD ELISA +
17	4/9	Fingerling facility					129	18.9		0		0.065	0.065	
18	4/9	Fingerling facility					133	21.2		0		0.073	0.073	
19	4/9	Fingerling facility					116	16.0		43,000	TNTC	0.953	0.953	BKD ELISA +
20	4/9	Fingerling facility					122	16.4		205		0.637	0.637	BKD ELISA +
21	4/9	Fingerling facility					141	28.3		22,900	TNTC	0.971	0.971	BKD ELISA +
22	4/9	Fingerling facility					159	35.1		1		0.071	0.071	
23	4/9	Fingerling facility					110	13.1		0		0.065	0.065	
24	4/9	Fingerling facility					120	16.8		1		0.075	0.075	
25	4/9	Fingerling facility					139	24.0		0		0.065	0.065	
26	4/10	Fingerling facility					113	9.7		0		0.070	0.070	
27	4/10	Fingerling facility					135	23.0		0		0.079	0.079	BKD ELISA +
28	4/10	Fingerling facility					157	35.8		0		0.070	0.070	
29	4/10	Fingerling facility					132	20.0		0		0.074	0.074	
30	4/10	Fingerling facility					117	16.0		3		0.073	0.073	
31	4/10	Fingerling facility					144	27.0		0		0.073	0.073	
32	4/10	Fingerling facility					142	23.4		0		0.081	0.081	BKD ELISA +
33	4/10	Fingerling facility					127	18.2		0		0.068	0.068	
34	4/10	Fingerling facility					143	30.6		0		0.102	0.102	BKD ELISA +

Appendix Table 31.--(continued)

35	4/10	Fingerling facility					151	32.4		0		0.070	0.070	
36	4/10	Fingerling facility					145	28.3		0		0.070	0.070	
37	4/10	Fingerling facility					138	24.8		0		0.068	0.068	
38	4/10	Fingerling facility					116	14.0		0		0.075	0.075	
39	4/10	Fingerling facility					107	10.5		0		0.075	0.075	
40	4/10	Fingerling facility					119	15.5		0		0.080	0.080	BKD ELISA +
41	4/10	Fingerling facility					141	32.2		0		0.147	0.147	BKD ELISA +
42	4/10	Fingerling facility					143	26.5		0		0.079	0.079	BKD ELISA +
43	4/10	Fingerling facility					129	20.4		0		0.063	0.063	
44	4/10	Fingerling facility					151	29.0		0		0.065	0.065	
45	4/10	Fingerling facility					142	29.0		0		0.062	0.062	
46	4/10	Fingerling facility					140	30.6		10		0.067	0.067	
47	4/10	Fingerling facility					139	23.0		0		0.077	0.077	BKD ELISA +
48	4/10	Fingerling facility					129	18.4		0		0.093	0.093	BKD ELISA +
49	4/10	Fingerling facility					123	17.6		0		0.074	0.074	
30	4/10	Fingerling facility					123	17.7		1		0.070	0.070	
31	4/11	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	195	79.0		0		0.070	0.070	
32	4/11	Fingerling facility					170	46.1		0		0.091	0.091	BKD ELISA +
33	4/11	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	160	64.3		0		0.098	0.098	BKD ELISA +
34	4/11	Fingerling facility					132	23.0		0		0.066	0.066	
35	4/11	Fingerling facility					135	24.1	yes	0		1.082	1.082	BKD ELISA +
36	4/11	Fingerling facility					97	8.3		0		0.075	0.075	
37	4/11	Fingerling facility					145	30.3		0		0.138	0.138	BKD ELISA +
38	4/11	Fingerling facility					119	16.2		0		0.081	0.081	BKD ELISA +
39	4/11	Fingerling facility					121	16.3		0		0.101	0.101	BKD ELISA +
50	4/11	Fingerling facility					123	20.1		2		0.069	0.069	
51	4/11	Fingerling facility					141	24.1		0		0.070	0.070	
52	4/11	Fingerling facility					142	26.8		0		0.065	0.065	
53	4/11	Fingerling facility					151	32.6		0		0.088	0.088	BKD ELISA +
54	4/11	Fingerling facility					153	33.4		0		0.073	0.073	
55	4/11	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	169	50.7	yes	90,000	TNTC	0.830	0.830	BKD ELISA +
56	4/11	Fingerling facility					130	18.4		5		0.070	0.070	
57	4/11	Fingerling facility					137	22.7		4		0.079	0.079	BKD ELISA +
58	4/11	Fingerling facility					149	30.0		1		0.069	0.069	
59	4/11	Fingerling facility					139	27.3		2		0.087	0.087	BKD ELISA +
70	4/11	Fingerling facility					136	25.0		0		0.063	0.063	

Appendix Table 31.--(continued)

71	4/11	Fingerling facility					169	43.7		0		0.078	0.078	BKD ELISA +
72	4/11	Fingerling facility					159	41.2		0		0.065	0.065	
73	4/11	Fingerling facility					143	27.3		22		0.088	0.088	BKD ELISA +
74	4/11	Fingerling facility					156	37.7		0		0.065	0.065	
75	4/11	Fingerling facility					123	17.5		0		0.086	0.086	BKD ELISA +
76	4/12	Fingerling facility					132	19.6		0		0.088	0.088	BKD ELISA +
77	4/12	Fingerling facility					152	34.3		0		0.095	0.095	BKD ELISA +
78	4/12	Fingerling facility					133	22.7	k	561	TNTC	0.814	0.814	BKD ELISA +
79	4/12	Fingerling facility					136	26.6		0		0.066	0.066	
80	4/12	Fingerling facility					163	40.3		0		0.090	0.090	BKD ELISA +
81	4/12	Fingerling facility					140	25.4		0		0.058	0.058	
82	4/12	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	172	58.3		0		0.080	0.080	BKD ELISA +
83	4/12	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	187	71.6		0		0.065	0.065	
84	4/12	Fingerling facility					131	23.0		0		0.072	0.072	
85	4/12	Fingerling facility					132	22.6		0		0.125	0.125	BKD ELISA +
86	4/12	Fingerling facility					124	18.3		0		0.107	0.107	BKD ELISA +
87	4/12	Fingerling facility					125	18.1		0		0.070	0.070	
88	4/12	Fingerling facility					125	19.9		2		0.103	0.103	BKD ELISA +
89	4/12	Fingerling facility					117	15.3		0		0.066	0.066	
90	4/12	Fingerling facility					165	40.0		0		0.065	0.065	
91	4/12	Fingerling facility					126	19.1		0		0.069	0.069	
92	4/12	Fingerling facility					153	32.3		0		0.073	0.073	
93	4/12	Fingerling facility					117	14.5		0		0.143	0.143	BKD ELISA +
94	4/12	Fingerling facility	Sawtooth	Rapid River	Red River	3/16-3/19/87	154	33.8		1		0.068	0.068	
95	4/12	Fingerling facility					142	27.5		0		0.059	0.059	
96	4/12	Fingerling facility					145	28.1		0		0.068	0.068	
97	4/12	Fingerling facility					140	30.4		0		0.060	0.060	
98	4/12	Fingerling facility					127	21.3		0		0.067	0.067	
99	4/12	Fingerling facility					108	11.8		0		0.076	0.076	BKD ELISA +
100	4/12	Fingerling facility					128	20.3		0		0.065	0.065	
101	4/13	Gatewell 4A					110	13.8		0		0.087	0.087	BKD ELISA +
102	4/13	Gatewell 4A	Sawtooth	Rapid River	Powell Creek	3/16-3/19/87	120	17.5	k	400,000	TNTC	1.032	1.032	BKD ELISA +
103	4/13	Gatewell 4A					170	45.8		2,687		0.683	0.683	BKD ELISA +
104	4/13	Gatewell 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	155	40.9		0		0.086	0.086	BKD ELISA +
105	4/13	Gatewell 4A					120	19.6		0		0.068	0.068	
106	4/13	Gatewell 4A					115	13.9		0		0.081	0.081	BKD ELISA +

Appendix Table 31.--(continued)

107	4/13	Gatewell 4A					127	21.9		0		0.087	0.087	BKD ELISA +
108	4/13	Gatewell 4A					117	18.3		0		0.070	0.070	
109	4/13	Gatewell 4A					130	23.3		0		0.059	0.059	
110	4/13	Gatewell 4A					125	24.0		0		0.072	0.072	
111	4/13	Gatewell 4A					135	26.0		0		0.077	0.077	BKD ELISA +
112	4/13	Gatewell 4A					140	29.5		0		0.076	0.076	BKD ELISA +
113	4/13	Gatewell 4A					100	10.6		0		0.133	0.133	BKD ELISA +
114	4/13	Gatewell 4A					130	26.1		0		0.072	0.072	
115	4/13	Gatewell 4A					114	14.8		0		0.064	0.064	
116	4/13	Gatewell 4A					142	29.0		0		0.076	0.076	BKD ELISA +
117	4/13	Gatewell 4A					120	17.4		0		0.067	0.067	
118	4/13	Gatewell 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	155	39.4		0		0.073	0.073	
119	4/13	Gatewell 4A					122	20.3		0		0.064	0.064	
120	4/13	Gatewell 4A					180	69.6		0		0.072	0.072	
121	4/13	Gatewell 4A					120	17.0		2		0.082	0.082	BKD ELISA +
122	4/13	Gatewell 4A	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	120	17.0		0		0.064	0.064	
123	4/13	Gatewell 4A					125	21.0		0		0.072	0.072	
124	4/13	Gatewell 4A					110	14.5		0		0.079	0.079	BKD ELISA +
125	4/13	Gatewell 4A					114	15.4		5,027	TNTC	1.053	1.053	BKD ELISA +
126	4/13	Gatewell 4A					112	13.1		0		0.120	0.120	BKD ELISA +
127	4/13	Gatewell 4A					120	18.0		0		0.099	0.099	BKD ELISA +
128	4/13	Gatewell 4A					122	20.0		0		0.070	0.070	
129	4/13	Gatewell 4A	Lookingglass	Lookingglass	Lookingglass Hatch.	11/1/86	118	16.6		0		0.083	0.083	BKD ELISA +
130	4/13	Gatewell 4A					105	11.6		0		0.083	0.083	BKD ELISA +
131	4/13	Closure net 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	177	58.8		0		0.079	0.079	BKD ELISA +
132	4/13	Closure net 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	184	67.4		0		0.074	0.074	
133	4/13	Closure net 4A					122	20.9		0		0.067	0.067	
134	4/13	Closure net 4A					149	32.5		0		0.080	0.080	BKD ELISA +
135	4/13	Closure net 4A	Sawtooth	Rapid River	Powell Creek	3/16-3/19/87	130	21.4		1,714	TNTC	0.884	0.884	BKD ELISA +
136	4/13	Closure net 4A					140	30.9		0		0.081	0.081	BKD ELISA +
137	4/13	Closure net 4A					173	59.4		0		0.067	0.067	
138	4/13	Closure net 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	167	55.6		0		0.071	0.071	
139	4/13	Closure net 4A					116	16.5		0		0.097	0.097	BKD ELISA +
140	4/13	Closure net 4A					113	14.6		0		0.091	0.091	BKD ELISA +
141	4/13	Closure net 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	189	71.5		0		0.065	0.065	
142	4/13	Closure net 4A					157	37.7		0		0.075	0.075	

Appendix Table 31.--(continued)

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143	4/13	Closure net 4A					152	34.4		0		0.067	0.067	
144	4/13	Closure net 4A					160	39.1		0		0.087	0.087	BKD ELISA +
145	4/13	Closure net 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	189	68.6		0		0.069	0.069	
146	4/13	Closure net 4A					118	16.5		0		0.092	0.092	BKD ELISA +
147	4/13	Closure net 4A					121	19.8		0		0.081	0.081	BKD ELISA +
148	4/13	Closure net 4A					142	26.0		0		0.104	0.104	BKD ELISA +
149	4/13	Closure net 4A					128	23.0		0		0.081	0.081	BKD ELISA +
150	4/13	Closure net 4A					150	35.6		0		0.066	0.066	
151	4/13	Closure net 4A					160	39.6		0		0.077	0.077	BKD ELISA +
152	4/13	Closure net 4A					143	29.0		0		0.081	0.081	BKD ELISA +
153	4/13	Closure net 4A					98	9.7		0		0.072	0.072	
154	4/13	Closure net 4A					112	16.1		0		0.075	0.075	
155	4/13	Closure net 4A					140	32.4		0		0.079	0.079	BKD ELISA +
156	4/13	Closure net 4A					122	20.5		0		0.091	0.091	BKD ELISA +
157	4/13	Closure net 4A					118	17.6		0		0.067	0.067	
158	4/13	Closure net 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	130	24.4		0		0.071	0.071	
159	4/13	Closure net 4A					122	17.2		0		0.086	0.086	BKD ELISA +
160	4/13	Closure net 4A					115	15.2		0		0.089	0.089	BKD ELISA +
161	4/13	Fyke net #1 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	177	57.7		0		0.074	0.074	
162	4/13	Fyke net #1 4A					118	11.7		0		0.083	0.083	BKD ELISA +
163	4/13	Fyke net #1 4A					127	28.9		0		0.067	0.067	
164	4/13	Fyke net #1 4A					134	24.8		0		0.077	0.077	BKD ELISA +
165	4/13	Fyke net #1 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	180	64.2		0		0.075	0.075	
166	4/13	Fyke net #1 4A					125	21.8		0		0.090	0.090	BKD ELISA +
167	4/13	Fyke net #1 4A					140	29.8		0		0.068	0.068	
168	4/13	Fyke net #1 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	183	69.7		1,565		0.677	0.677	BKD ELISA +
169	4/13	Fyke net #1 4A					143	35.4		0		0.061	0.061	
170	4/13	Fyke net #1 4A					130	22.3		0		0.073	0.073	
171	4/13	Fyke net #1 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	183	62.0		0		0.082	0.082	BKD ELISA +
172	4/13	Fyke net #1 4A					134	26.4		0		0.067	0.067	
173	4/13	Fyke net #1 4A					105	11.1		0		0.085	0.085	BKD ELISA +
174	4/13	Fyke net #1 4A					140	30.5		0		0.067	0.067	
175	4/13	Fyke net #1 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	182	67.2		0		0.071	0.071	
176	4/13	Fyke net #1 4A					111	14.9		0		0.068	0.068	
177	4/13	Fyke net #1 4A					132	25.4		0		0.057	0.057	
178	4/13	Fyke net #1 4A					113	14.6		0		0.072	0.072	

Appendix Table 31.--(continued)

179	4/13	Fyke net #1 4A					129	21.9		0		0.078	0.078	BKD ELISA +
180	4/13	Fyke net #1 4A					117	19.7		0		0.061	0.061	
181	4/13	Fyke net #1 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	169	50.2		0		0.073	0.073	
182	4/13	Fyke net #1 4A					122	18.1		1		0.061	0.061	
183	4/13	Fyke net #1 4A					112	13.9		0		0.109	0.109	BKD ELISA +
184	4/13	Fyke net #1 4A					108	12.7		0		0.080	0.080	BKD ELISA +
185	4/13	Fyke net #1 4A					95	8.9		0		0.073	0.073	
186	4/13	Fyke net #1 4A					129	23.3		0		0.059	0.059	
187	4/13	Fyke net #1 4A					131	25.0		0		0.058	0.058	
188	4/13	Fyke net #1 4A					93	8.4		0		0.078	0.078	BKD ELISA +
189	4/13	Fyke net #1 4A					127	21.1		0		0.073	0.073	
190	4/13	Fyke net #1 4A					109	10.3		0		0.081	0.081	BKD ELISA +
191	4/13	Fyke net #2 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	185	74.2		0		0.062	0.062	
192	4/13	Fyke net #2 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	174	63.3		0		0.072	0.072	
193	4/13	Fyke net #2 4A					163	40.9		1		0.074	0.074	
194	4/13	Fyke net #2 4A					150	34.0		0		0.074	0.074	
195	4/13	Fyke net #2 4A	Lookingglass	Lookingglass	Lookingglass Creek	9/24/86	120	17.4		0		0.089	0.089	BKD ELISA +
196	4/13	Fyke net #2 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	149	34.9		0		0.069	0.069	
197	4/13	Fyke net #2 4A					131	24.6		0		0.062	0.062	
198	4/13	Fyke net #2 4A					142	31.0		0		0.065	0.065	
199	4/13	Fyke net #2 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	179	63.2		0		0.068	0.068	
200	4/13	Fyke net #2 4A					123	20.4		0		0.080	0.080	BKD ELISA +
201	4/13	Fyke net #2 4A					155	41.6		0		0.065	0.065	
202	4/13	Fyke net #2 4A					150	33.8		0		0.086	0.086	BKD ELISA +
203	4/13	Fyke net #2 4A					120	17.9		0		0.066	0.066	
204	4/13	Fyke net #2 4A					124	18.7		0		0.079	0.079	BKD ELISA +
205	4/13	Fyke net #2 4A					131	25.0		0		0.065	0.065	
206	4/13	Fyke net #2 4A					145	32.9		0		0.073	0.073	
207	4/13	Fyke net #2 4A					121	21.7		0		0.064	0.064	
208	4/13	Fyke net #2 4A					155	36.8		0		0.072	0.072	
209	4/13	Fyke net #2 4A					118	16.3		0		0.066	0.066	
210	4/13	Fyke net #2 4A					135	25.8		0		0.073	0.073	
211	4/13	Fyke net #2 4A					159	44.0		0		0.077	0.077	BKD ELISA +
212	4/13	Fyke net #2 4A					125	22.2		0		0.066	0.066	
213	4/13	Fyke net #2 4A					120	19.5		0		0.072	0.072	
214	4/13	Fyke net #2 4A					150	36.0		0		0.060	0.060	

Appendix Table 31.--(continued)

215	4/13	Fyke net #2 4A					120	17.0		0		0.065	0.065	
216	4/13	Fyke net #2 4A					159	44.5		0		0.078	0.078	BKD ELISA +
217	4/13	Fyke net #2 4A					129	22.0		0		0.082	0.082	BKD ELISA +
218	4/13	Fyke net #2 4A					110	14.7		0		0.062	0.062	
219	4/13	Fyke net #2 4A					102	11.3		0		0.080	0.080	BKD ELISA +
220	4/13	Fyke net #2 4A					128	22.4		0		0.090	0.090	BKD ELISA +
221	4/13	Fyke net #3 4A	Dworshak	Rapid River	Dworshak Hatch.	4/1-4/2/87	132	28.2		0		0.068	0.068	
222	4/13	Fyke net #3 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	189	68.6		0		0.070	0.070	
223	4/13	Fyke net #3 4A					130	23.6		0		0.078	0.078	BKD ELISA +
224	4/13	Fyke net #3 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	193	70.4		0		0.078	0.078	BKD ELISA +
225	4/13	Fyke net #3 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	190	69.2		0		0.063	0.063	
226	4/13	Fyke net #3 4A					134	23.8		0		0.080	0.080	BKD ELISA +
227	4/13	Fyke net #3 4A					140	27.5		73		0.362	0.362	BKD ELISA +
228	4/13	Fyke net #3 4A					128	24.0		0		0.069	0.069	
229	4/13	Fyke net #3 4A					125	21.6		0		0.055	0.057	
230	4/13	Fyke net #3 4A					115	17.6		0		0.057	0.059	
231	4/13	Fyke net #3 4A					142	26.5		0		0.080	0.082	BKD ELISA +
232	4/13	Fyke net #3 4A					122	18.5		0		0.061	0.063	
233	4/13	Fyke net #3 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	178	57.2		0		0.053	0.055	
234	4/13	Fyke net #3 4A					146	28.8		0		0.067	0.069	
235	4/13	Fyke net #3 4A					139	26.0		0		0.057	0.059	
236	4/13	Fyke net #3 4A					144	31.0		0		0.055	0.057	
237	4/13	Fyke net #3 4A					135	27.2		0		0.058	0.060	
238	4/13	Fyke net #3 4A					159	42.5		0		0.054	0.056	
239	4/13	Fyke net #3 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	178	66.0		0		0.057	0.059	
240	4/13	Fyke net #3 4A					122	18.6		0		0.069	0.071	
241	4/13	Fyke net #3 4A					128	20.2		0		0.065	0.067	
242	4/13	Fyke net #3 4A					123	20.3		0		0.054	0.056	
243	4/13	Fyke net #3 4A					135	24.8		0		0.067	0.069	
244	4/13	Fyke net #3 4A					138	28.6		0		0.065	0.067	
245	4/13	Fyke net #3 4A	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	175	58.5		0		0.061	0.063	
246	4/13	Fyke net #3 4A					145	29.0		0		0.063	0.065	
247	4/13	Fyke net #3 4A					125	22.3		0		0.059	0.061	
248	4/13	Fyke net #3 4A					130	23.4		0		0.069	0.071	
249	4/13	Fyke net #3 4A					122	19.0		0		0.054	0.056	
250	4/13	Fyke net #3 4A					120	19.0		0		0.061	0.063	

Appendix Table 31.--(continued)

251	4/13	Fingerling facility					132	26.0		0	0.058	0.060	
252	4/13	Fingerling facility					142	27.5		0	0.061	0.063	
253	4/13	Fingerling facility					102	10.3		0	0.069	0.071	
254	4/13	Fingerling facility					118	15.0		0	0.079	0.081	BKD ELISA +
255	4/13	Fingerling facility					121	19.5		0	0.060	0.062	
256	4/13	Fingerling facility					122	18.7		0	0.059	0.061	
257	4/13	Fingerling facility					169	48.3		0	0.067	0.069	
258	4/13	Fingerling facility					142	26.8		0	0.066	0.068	
259	4/13	Fingerling facility	Dworshak	Rapid River	Dworshak	4/1-4/2/87	136	27.8		0	0.062	0.064	
260	4/13	Fingerling facility					150	36.6		0	0.057	0.059	
261	4/13	Fingerling facility					115	15.1		0	0.055	0.057	
262	4/13	Fingerling facility					136	28.3		0	0.059	0.061	
263	4/13	Fingerling facility					119	18.3		0	0.071	0.073	
264	4/13	Fingerling facility					124	17.8		0	0.063	0.065	
265	4/13	Fingerling facility					141	29.7		0	0.069	0.071	
266	4/13	Fingerling facility					133	23.4		90	0.155	0.160	BKD ELISA +
267	4/13	Fingerling facility					132	18.7		0	0.077	0.079	BKD ELISA +
268	4/13	Fingerling facility					123	19.0		0	0.061	0.063	
269	4/13	Fingerling facility					111	12.3		0	0.075	0.077	BKD ELISA +
270	4/13	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	187	66.9		7	0.067	0.069	
271	4/13	Fingerling facility					132	22.6		0	0.059	0.061	
272	4/13	Fingerling facility					126	21.5		0	0.073	0.075	
273	4/13	Fingerling facility					145	19.1		0	0.079	0.081	BKD ELISA +
274	4/13	Fingerling facility					109	12.2		0	0.067	0.069	
275	4/13	Fingerling facility					161	38.3		0	0.071	0.073	
276	4/14	Fingerling facility					108	10.7		0	0.211	0.217	BKD ELISA +
277	4/14	Fingerling facility					128	19.7		0	0.059	0.059	
278	4/14	Fingerling facility					120	15.7		0	0.086	0.086	BKD ELISA +
279	4/14	Fingerling facility					129	21.1		14	0.077	0.077	BKD ELISA +
280	4/14	Fingerling facility					127	18.7		0	0.066	0.066	
281	4/14	Fingerling facility					121	16.4		0	0.102	0.102	BKD ELISA +
282	4/14	Fingerling facility					128	19.8		0	0.061	0.061	
283	4/14	Fingerling facility					113	14.2		0	0.071	0.071	
284	4/14	Fingerling facility					115	13.0		0	0.102	0.102	BKD ELISA +
285	4/14	Fingerling facility					123	16.3		2	0.065	0.065	
286	4/14	Fingerling facility					117	15.7		0	0.073	0.073	

Appendix Table 31.--(continued)

287	4/14	Fingerling facility					123	18.8		0		0.065	0.065	
288	4/14	Fingerling facility					134	25.2		0		0.069	0.069	
289	4/14	Fingerling facility					118	16.6		0		0.062	0.062	
290	4/14	Fingerling facility					143	31.0		0		0.066	0.066	
291	4/14	Fingerling facility					142	29.2		0		0.077	0.077	BKD ELISA +
292	4/14	Fingerling facility					122	17.7		0		0.074	0.074	
293	4/14	Fingerling facility					118	16.6		0		0.145	0.145	BKD ELISA +
294	4/14	Fingerling facility					128	22.6		0		0.077	0.077	BKD ELISA +
295	4/14	Fingerling facility					146	32.8		0		0.063	0.063	
296	4/14	Fingerling facility					132	23.5		0		0.071	0.071	
297	4/14	Fingerling facility					118	17.4		0		0.096	0.096	BKD ELISA +
298	4/14	Fingerling facility					127	20.7		0		0.065	0.065	
299	4/14	Fingerling facility					98	9.3		0		0.080	0.080	BKD ELISA +
300	4/14	Fingerling facility	Sawtooth	Rapid River	Powell Creek	3/16-3/19/87	106	11.2		0		0.104	0.104	BKD ELISA +
301	4/15	Fingerling facility					104	13.0		0		0.082	0.082	BKD ELISA +
302	4/15	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	203	90.1		0		0.067	0.067	
303	4/15	Fingerling facility					126	22.3		0		0.066	0.066	
304	4/15	Fingerling facility					122	19.7		0		0.068	0.068	
305	4/15	Fingerling facility					128	22.8		0		0.067	0.067	
306	4/15	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	183	65.5		0		0.063	0.063	
307	4/15	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	177	62.0		0		0.069	0.069	
308	4/15	Fingerling facility					133	26.5		0		0.088	0.088	BKD ELISA +
309	4/15	Fingerling facility					126	22.3		0		0.070	0.070	
310	4/15	Fingerling facility					120	21.8		0		0.067	0.067	
311	4/15	Fingerling facility					118	19.8		13		0.088	0.088	BKD ELISA +
312	4/15	Fingerling facility					113	16.4		0		0.077	0.077	BKD ELISA +
313	4/15	Fingerling facility					96	10.9		0		0.075	0.075	
314	4/15	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	189	74.2		0		0.066	0.066	
315	4/15	Fingerling facility					111	15.9		0		0.068	0.068	
316	4/15	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	180	62.5		0		0.065	0.065	
317	4/15	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	202	87.8		0		0.063	0.063	
318	4/15	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	176	55.0		0		0.075	0.075	
319	4/15	Fingerling facility					140	34.0		0		0.070	0.070	
320	4/15	Fingerling facility	P.I.T tag code				100	13.0		0		0.080	0.080	BKD ELISA +
321	4/16	Fingerling facility					123	18.9		23		0.072	0.072	
322	4/16	Fingerling facility					126	22.5		0		0.066	0.066	

Appendix Table 31.--(continued)

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Lower Granite Dam SCS Smolts

323	4/16	Fingerling facility					126	21.6		0		0.064	0.064	
324	4/16	Fingerling facility					119	17.6		0		0.069	0.069	
325	4/16	Fingerling facility					127	21.6		0		0.051	0.051	
326	4/16	Fingerling facility					118	17.6		0		0.061	0.061	
327	4/16	Fingerling facility					136	27.0		0		0.057	0.057	
328	4/16	Fingerling facility					120	19.2		0		0.055	0.055	
329	4/16	Fingerling facility					138	27.9		0		0.052	0.052	
330	4/16	Fingerling facility					115	14.5		0		0.059	0.059	
331	4/16	Fingerling facility					133	26.0		0		0.065	0.065	
332	4/16	Fingerling facility					125	21.5		0		0.060	0.060	
333	4/16	Fingerling facility					88	6.9		0		No Sample	No Sample	
334	4/16	Fingerling facility					102	10.3		0		0.067	0.067	
335	4/16	Fingerling facility					123	19.6		0		0.055	0.055	
336	4/16	Fingerling facility					99	10.1		0		0.087	0.087	BKD ELISA +
337	4/16	Fingerling facility					126	21.5		0		0.083	0.083	BKD ELISA +
338	4/16	Fingerling facility					113	16.0		0		0.061	0.061	
339	4/16	Fingerling facility					116	15.4		0		0.085	0.085	BKD ELISA +
340	4/16	Fingerling facility					130	25.9		0		0.062	0.062	
341	4/16	Fingerling facility					115	15.1		0		0.072	0.072	
342	4/16	Fingerling facility					127	20.6		0		0.066	0.066	
343	4/16	Fingerling facility					135	25.4		0		0.059	0.059	
344	4/16	Fingerling facility					134	27.5		0		0.067	0.067	
345	4/16	Fingerling facility	Dworshak	Rapid River	Dworshak	4/1-4/2/87	128	22.6		0		0.058	0.058	
346	4/16	Fingerling facility					134	23.2		0		0.070	0.070	
347	4/16	Fingerling facility					135	23.1		0		0.069	0.069	
348	4/16	Fingerling facility					122	15.0		0		0.076	0.076	BKD ELISA +
349	4/16	Fingerling facility					131	21.0		0		0.059	0.059	
350	4/16	Fingerling facility					120	16.6		0		0.060	0.060	
351	4/17	Fingerling facility					130	22.4		0		0.058	0.058	
352	4/17	Fingerling facility					120	26.0		0		0.070	0.070	
353	4/17	Fingerling facility					107	8.8		0		0.068	0.068	
354	4/17	Fingerling facility					122	19.3		0		0.058	0.058	
355	4/17	Fingerling facility					151	32.6		0		0.077	0.077	BKD ELISA +
356	4/17	Fingerling facility					141	27.0		0		0.068	0.068	
357	4/17	Fingerling facility					120	17.1		0		0.058	0.058	
358	4/17	Fingerling facility					141	26.4		0		0.073	0.073	

Appendix Table 31.--(continued)

359	4/17	Fingerling facility					122	17.8		0		0.066	0.066	
360	4/17	Fingerling facility					123	15.2		0		0.071	0.071	
361	4/17	Fingerling facility					132	20.7		0		0.057	0.057	
362	4/17	Fingerling facility					132	22.5		0		0.069	0.069	
363	4/17	Fingerling facility					129	19.7		0		0.068	0.068	
364	4/17	Fingerling facility					142	26.3		0		0.075	0.075	
365	4/17	Fingerling facility					127	18.7		0		0.081	0.081	BKD ELISA +
366	4/17	Fingerling facility					114	13.9		0		0.066	0.066	
367	4/17	Fingerling facility					131	20.4		0		0.069	0.069	
368	4/17	Fingerling facility					115	13.9		0		0.071	0.071	
369	4/17	Fingerling facility					124	18.5		1,275		0.731	0.731	BKD ELISA +
370	4/17	Fingerling facility					138	24.3		0		0.057	0.057	
371	4/17	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	131	20.7		0		0.059	0.059	
372	4/17	Fingerling facility					124	16.8		0		0.070	0.070	
373	4/17	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	138	26.2		0		0.058	0.058	
374	4/17	Fingerling facility					124	19.4		0		0.076	0.076	BKD ELISA +
375	4/17	Fingerling facility					119	16.3		0		0.060	0.060	
376	4/18	Fingerling facility					141	24.7		0		0.070	0.070	
377	4/18	Fingerling facility					112	13.9		0		0.071	0.071	
378	4/18	Fingerling facility					100	9.0		0		0.067	0.067	
379	4/18	Fingerling facility					143	30.0		0		0.057	0.057	
380	4/18	Fingerling facility					110	12.2		0		0.076	0.076	BKD ELISA +
381	4/18	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	170	49.4		0		0.055	0.055	
382	4/18	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	193	73.7		0		0.060	0.060	
383	4/18	Fingerling facility					126	18.9		0		0.061	0.061	
384	4/18	Fingerling facility					119	15.5		0		0.074	0.074	
385	4/18	Fingerling facility					133	23.7		0		0.052	0.052	
386	4/18	Fingerling facility					132	19.8		0		0.070	0.070	
387	4/18	Fingerling facility					154	32.4		0		0.098	0.098	BKD ELISA +
388	4/18	Fingerling facility					118	16.9	yes	1		0.211	0.211	BKD ELISA +
389	4/18	Fingerling facility	Sawtooth	Rapid River	Powell Creek	3/16-3/19/87	149	31.5		0		0.070	0.070	
390	4/18	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	120	16.3		0		0.067	0.067	
391	4/18	Fingerling facility					120	14.2		0		0.081	0.081	BKD ELISA +
392	4/18	Fingerling facility					120	17.3		0		0.062	0.062	
393	4/18	Fingerling facility					153	35.1		0		0.057	0.057	
394	4/18	Fingerling facility					96	7.7		0		0.063	0.063	

Appendix Table 31.--(continued)

395	4/18	Fingerling facility					130	19.9		0		0.067	0.067	
396	4/18	Fingerling facility					139	26.2		0		0.063	0.063	
397	4/18	Fingerling facility					143	31.3		0		0.058	0.058	
398	4/18	Fingerling facility					128	19.4		0		0.060	0.060	
399	4/18	Fingerling facility					115	15.0		4		0.105	0.105	BKD ELISA +
400	4/18	Fingerling facility					114	13.9		0		0.074	0.074	
401	4/19	Fingerling facility					116	14.3		0		0.070	0.070	
402	4/19	Fingerling facility					143	19.3		0		0.066	0.066	
403	4/19	Fingerling facility					135	21.9		0		0.069	0.069	
404	4/19	Fingerling facility					120	17.0		0		0.063	0.063	
405	4/19	Fingerling facility					133	24.1		0		0.061	0.061	
406	4/19	Fingerling facility					130	19.9		0		0.067	0.067	
407	4/19	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	177	57.8		0		0.065	0.065	
408	4/19	Fingerling facility					133	21.1		0		0.076	0.076	BKD ELISA +
409	4/19	Fingerling facility					134	23.2		969		0.460	0.460	BKD ELISA +
410	4/19	Fingerling facility					101	19.7		0		0.071	0.071	
411	4/19	Fingerling facility					155	37.5		0		0.068	0.068	
412	4/19	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	187	68.3		2		0.071	0.071	
413	4/19	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	157	36.1		0		0.060	0.060	
414	4/19	Fingerling facility					137	25.7		0		0.065	0.065	
415	4/19	Fingerling facility					165	44.2		0		0.066	0.066	
416	4/19	Fingerling facility					100	9.4		0		0.077	0.077	BKD ELISA +
417	4/19	Fingerling facility					134	21.9		0		0.072	0.072	
418	4/19	Fingerling facility	Dworshak	Rapid River	Dworshak	4/1-4/2/87	133	24.2		0		0.113	0.113	BKD ELISA +
419	4/19	Fingerling facility					110	11.9		0		0.195	0.195	BKD ELISA +
420	4/19	Fingerling facility					132	23.7		0		0.066	0.066	
421	4/19	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	189	73.1		0		0.061	0.061	
422	4/19	Fingerling facility					133	21.5		0		0.084	0.084	BKD ELISA +
423	4/19	Fingerling facility					144	27.6		0		0.071	0.071	
424	4/19	Fingerling facility					131	21.8		0		0.066	0.066	
425	4/19	Fingerling facility					103	10.1		0		0.071	0.071	
426	4/20	Fingerling facility					101	8.6		0		0.125	0.125	BKD ELISA +
427	4/20	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	142	25.6		0		0.073	0.073	
428	4/20	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	185	67.8		0		0.063	0.063	
429	4/20	Fingerling facility					120	17.2		0		0.102	0.102	BKD ELISA +
430	4/20	Fingerling facility					113	13.8		0		0.071	0.071	

Appendix Table 31.--(continued)

431	4/20	Fingerling facility					133	18.8		3		0.078	0.078	BKD ELISA +
432	4/20	Fingerling facility					142	29.7		0		0.070	0.070	
433	4/20	Fingerling facility					123	17.8		0		0.108	0.108	BKD ELISA +
434	4/20	Fingerling facility					143	25.6		0		0.062	0.062	
435	4/20	Fingerling facility					119	15.4		232		0.297	0.297	BKD ELISA +
436	4/20	Fingerling facility	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	190	66.0		0		0.064	0.064	
437	4/20	Fingerling facility					195	73.4		0		0.060	0.060	
438	4/20	Fingerling facility					142	24.0		0		0.073	0.073	
439	4/20	Fingerling facility					120	16.0		0		0.084	0.084	BKD ELISA +
440	4/20	Fingerling facility					118	15.1		0		0.081	0.081	BKD ELISA +
441	4/20	Fingerling facility					125	17.6		0		0.075	0.075	
442	4/20	Fingerling facility					134	20.7		0		0.064	0.064	
443	4/20	Fingerling facility					135	23.1		0		0.064	0.064	
444	4/20	Fingerling facility					122	17.4		0		0.076	0.076	BKD ELISA +
445	4/20	Fingerling facility					129	17.9		0		0.071	0.071	
446	4/20	Fingerling facility					117	15.9		0		0.072	0.072	
447	4/20	Fingerling facility					123	17.0		0		0.090	0.090	BKD ELISA +
448	4/20	Fingerling facility					114	10.0		0		0.080	0.080	BKD ELISA +
449	4/20	Fingerling facility					120	15.5		0		0.069	0.069	
450	4/20	Fingerling facility					124	17.6		0		0.074	0.074	
451	4/21	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	190	70.6		0		0.072	0.072	
452	4/21	Fingerling facility					121	16.5		0		0.068	0.068	
453	4/21	Fingerling facility					113	12.8		25		0.108	0.108	BKD ELISA +
454	4/21	Fingerling facility					126	18.0		0		0.061	0.061	
455	4/21	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	132	22.3		0		0.069	0.069	
456	4/21	Fingerling facility					96	8.0		0		0.079	0.079	BKD ELISA +
457	4/21	Fingerling facility					123	16.2		0		0.079	0.079	BKD ELISA +
458	4/21	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	130	22.7	k/sp	0		1.202	1.202	BKD ELISA +
459	4/21	Fingerling facility	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	190	65.7		0		0.080	0.080	BKD ELISA +
460	4/21	Fingerling facility					172	47.2		0		0.064	0.064	
461	4/21	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	201	72.0		0		0.071	0.071	
462	4/21	Fingerling facility					138	25.5		0		0.064	0.064	
463	4/21	Fingerling facility					130	22.4		0		0.073	0.073	
464	4/21	Fingerling facility					139	28.2		0		0.064	0.064	
465	4/21	Fingerling facility					130	20.4		0		0.069	0.069	
466	4/21	Fingerling facility					91	6.8		0		0.070	0.070	

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

467	4/21	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	165	45.4		0		0.062	0.062		
468	4/21	Fingerling facility					109	11.2		0		0.088	0.088	BKD ELISA +	
469	4/21	Fingerling facility					115	13.9		0		0.077	0.077	BKD ELISA +	
470	4/21	Fingerling facility					116	14.3		0		0.067	0.067		
471	4/21	Fingerling facility					107	11.0		0		0.075	0.075		
472	4/21	Fingerling facility					132	20.0		0		0.065	0.065		
473	4/21	Fingerling facility					121	15.1		0		0.080	0.080	BKD ELISA +	
474	4/21	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	123	16.3		0		0.088	0.088	BKD ELISA +	
475	4/21	Fingerling facility					110	12.5		0		0.072	0.072		
476	4/22	Fingerling facility					123	17.0		0		0.075	0.075		
477	4/22	Fingerling facility					125	17.1		0		0.075	0.075		
478	4/22	Fingerling facility	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	146	31.2		0		0.064	0.064		
479	4/22	Fingerling facility					127	19.4		0		0.075	0.075		
480	4/22	Fingerling facility					128	19.1		0		0.071	0.071		
481	4/22	Fingerling facility					121	15.8		0		0.071	0.071		
482	4/22	Fingerling facility					138	23.7		0		0.065	0.065		
483	4/22	Fingerling facility					120	15.0		0		0.077	0.077	BKD ELISA +	
484	4/22	Fingerling facility					143	29.0		0		0.068	0.068		
485	4/22	Fingerling facility					130	19.6		0		0.095	0.095	BKD ELISA +	
486	4/22	Fingerling facility					130	20.2		0		0.064	0.064		
487	4/22	Fingerling facility					128	18.4		0		0.079	0.079	BKD ELISA +	
488	4/22	Fingerling facility					139	26.0		0		0.202	0.202	BKD ELISA +	
489	4/22	Fingerling facility					162	27.9		0		0.075	0.075		
490	4/22	Fingerling facility					127	20.5		0		0.080	0.080	BKD ELISA +	
491	4/22	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch	4/1/87	178	55.6		0		0.064	0.064		
492	4/22	Fingerling facility					139	25.4		0		0.095	0.095	BKD ELISA +	
493	4/22	Fingerling facility					98	8.8		0		0.076	0.076	BKD ELISA +	
494	4/22	Fingerling facility					131	21.7		0		0.072	0.072		
495	4/22	Fingerling facility					165	43.1		7		0.104	0.104	BKD ELISA +	
496	4/22	Fingerling facility					123	23.6	yes	7		0.871	0.871	BKD ELISA +	
497	4/22	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	135	23.1		0		0.073	0.073		
498	4/22	Fingerling facility					114	12.1		0		0.070	0.070		
499	4/22	Fingerling facility					119	15.3		0		0.070	0.070		
500	4/22	Fingerling facility					110	11.4		0		0.073	0.073		
501	4/23	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	173	49.5		0		0.075	0.075		
502	4/23	Fingerling facility					136	26.6		0		0.065	0.065		

Appendix Table 31.—(continued)

Lower Granite Dam SCS Smolts 1987

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503	4/23	Fingerling facility					127	16.4		0		0.073	0.073	
504	4/23	Fingerling facility					123	15.7		0		0.069	0.069	
505	4/23	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	202	84.2		0		0.060	0.060	
506	4/23	Fingerling facility					118	14.3		0		0.465	0.465	BKD ELISA +
507	4/23	Fingerling facility					126	20.1		0		0.091	0.091	BKD ELISA +
508	4/23	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	195	72.6		0		0.079	0.079	BKD ELISA +
509	4/23	Fingerling facility					120	16.7		0		0.079	0.079	BKD ELISA +
510	4/23	Fingerling facility					139	26.4		0		0.073	0.073	
511	4/23	Fingerling facility	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	148	30.4		0		0.072	0.072	
512	4/23	Fingerling facility					130	20.2		0		0.076	0.076	BKD ELISA +
513	4/23	Fingerling facility	no tag found				131	21.5		0		0.073	0.073	
514	4/23	Fingerling facility					124	19.1		0		0.069	0.069	
515	4/23	Fingerling facility					125	18.1		0		0.071	0.071	
516	4/23	Fingerling facility					134	21.6		0		0.069	0.069	
517	4/23	Fingerling facility					122	17.8		10		0.310	0.310	BKD ELISA +
518	4/23	Fingerling facility					119	14.4		3		0.253	0.253	BKD ELISA +
519	4/23	Fingerling facility					135	24.0		0		0.072	0.072	
520	4/23	Fingerling facility					125	18.2		0		0.086	0.086	BKD ELISA +
521	4/23	Fingerling facility	Sawtooth	Rapid River	Powell Creek	3/16-3/19/87	127	20.1		0		0.126	0.126	BKD ELISA +
522	4/23	Fingerling facility					140	24.9		0		0.070	0.070	
523	4/23	Fingerling facility					132	19.6		0		0.079	0.079	BKD ELISA +
524	4/23	Fingerling facility					128	20.4		0		0.069	0.069	
525	4/23	Fingerling facility					132	21.2		0		0.128	0.128	BKD ELISA +
526	4/23	Fingerling facility					108	11.1		0		0.064	0.064	
527	4/23	Fingerling facility					140	28.3		0		0.068	0.068	
528	4/23	Fingerling facility					118	14.7		0		0.077	0.077	BKD ELISA +
529	4/23	Fingerling facility					113	13.1		0		0.074	0.074	
530	4/23	Fingerling facility					122	16.5		0		0.078	0.078	BKD ELISA +
531	4/23	Fingerling facility					138	23.3		0		0.068	0.068	
532	4/23	Fingerling facility					137	24.7		0		0.077	0.077	BKD ELISA +
533	4/23	Fingerling facility					131	22.4		0		0.073	0.073	
534	4/23	Fingerling facility					135	21.3		0		0.070	0.070	
535	4/23	Fingerling facility					133	21.6		0		0.068	0.068	
536	4/23	Fingerling facility					139	25.0		0		0.075	0.075	
537	4/23	Fingerling facility					104	10.8		0		0.076	0.076	BKD ELISA +
538	4/23	Fingerling facility					133	21.0		2		0.073	0.073	

Appendix Table 31.--(continued)

539	4/23	Fingerling facility					140	25.1		0		0.066	0.066	
540	4/23	Fingerling facility					122	15.3		0		0.078	0.078	BKD ELISA +
541	4/23	Fingerling facility					128	21.5		0		0.207	0.207	BKD ELISA +
542	4/23	Fingerling facility					105	10.2		0		0.070	0.070	
543	4/23	Fingerling facility					136	24.4		0		0.167	0.167	BKD ELISA +
544	4/23	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	122	26.4		0		0.070	0.070	
545	4/23	Fingerling facility					128	29.9		0		0.072	0.072	
546	4/23	Fingerling facility					189	71.0		0		0.060	0.060	
547	4/23	Fingerling facility					125	17.1		0		0.069	0.069	
548	4/23	Fingerling facility					124	18.0		0		0.072	0.072	
549	4/23	Fingerling facility					125	18.1		0		0.081	0.081	BKD ELISA +
550	4/23	Fingerling facility					136	23.5		1,815		0.506	0.506	BKD ELISA +
551	4/24	Fingerling facility					136	24.2		150		0.192	0.192	BKD ELISA +
552	4/24	Fingerling facility					137	25.7		0		0.068	0.068	
553	4/24	Fingerling facility					154	31.4		0		0.082	0.082	BKD ELISA +
554	4/24	Fingerling facility					129	20.6		0		0.063	0.063	
555	4/24	Fingerling facility					132	20.6		0		0.171	0.171	BKD ELISA +
556	4/24	Fingerling facility					130	19.6		0		0.069	0.069	
557	4/24	Fingerling facility					136	20.1		0		0.076	0.076	BKD ELISA +
558	4/24	Fingerling facility					120	16.3		0		0.065	0.065	
559	4/24	Fingerling facility					126	17.2		0		0.121	0.121	BKD ELISA +
560	4/24	Fingerling facility					141	26.6		0		0.064	0.064	
561	4/24	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	160	39.0		0		0.061	0.061	
562	4/24	Fingerling facility					132	22.3		0		0.080	0.080	BKD ELISA +
563	4/24	Fingerling facility	Dworshak	Rapid River	Clearwater River	3/20-4/28/87	137	23.5		0		0.065	0.065	
564	4/24	Fingerling facility					132	21.3		0		0.079	0.079	BKD ELISA +
565	4/24	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	178	58.4		0		0.069	0.069	
566	4/24	Fingerling facility					139	24.7		0		0.066	0.066	
567	4/24	Fingerling facility					126	18.1		0		0.064	0.064	
568	4/24	Fingerling facility					132	22.0		0		0.069	0.069	
569	4/24	Fingerling facility					125	17.5		0		0.075	0.075	
570	4/24	Fingerling facility					134	22.7		0		0.069	0.069	
571	4/24	Fingerling facility					128	17.8		0		0.066	0.066	
572	4/24	Fingerling facility					124	17.8		0		0.067	0.067	
573	4/24	Fingerling facility					127	17.7		0		0.089	0.089	BKD ELISA +
574	4/24	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	140	26.3		0		0.077	0.077	BKD ELISA +

Appendix Table 31.--(continued)

575	4/24	Fingerling facility					129	20.3		0		0.068	0.068	
576	4/24	Fingerling facility					124	18.3		16		0.234	0.234	BKD ELISA +
577	4/24	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	135	25.0	k	442		0.650	0.650	BKD ELISA +
578	4/24	Fingerling facility					126	18.6		0		0.075	0.075	
579	4/24	Fingerling facility					105	10.9		0		0.078	0.078	BKD ELISA +
580	4/24	Fingerling facility					119	15.6		0		0.083	0.083	BKD ELISA +
581	4/24	Fingerling facility					118	15.4		0		0.087	0.087	BKD ELISA +
582	4/24	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	189	71.9		0		0.081	0.081	BKD ELISA +
583	4/24	Fingerling facility					119	14.3		0		0.098	0.098	BKD ELISA +
584	4/24	Fingerling facility					145	30.0		0		0.072	0.072	
585	4/24	Fingerling facility					135	21.2		0		0.085	0.085	BKD ELISA +
586	4/24	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	139	24.1		0		0.073	0.073	
587	4/24	Fingerling facility					130	21.1		0		0.077	0.077	BKD ELISA +
588	4/24	Fingerling facility					132	21.2		0		0.071	0.071	
589	4/24	Fingerling facility					142	31.3		120		0.431	0.431	BKD ELISA +
590	4/24	Fingerling facility					139	26.1	K	15		1.081	1.081	BKD ELISA +
591	4/24	Fingerling facility					137	33.9		0		0.071	0.071	
592	4/24	Fingerling facility	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	156	36.4		0		0.067	0.067	
593	4/24	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	125	18.5		0		0.103	0.103	BKD ELISA +
594	4/24	Fingerling facility					121	15.3		0		0.071	0.071	
595	4/24	Fingerling facility					122	18.2		0		0.069	0.069	
596	4/24	Fingerling facility					131	21.4		0		0.075	0.075	
597	4/24	Fingerling facility					149	30.6		0		0.073	0.073	
598	4/24	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	119	15.2		8,326	TNTC	0.776	0.776	BKD ELISA +
599	4/24	Fingerling facility					138	24.4		0		0.076	0.076	BKD ELISA +
600	4/24	Fingerling facility					125	18.8		0		0.069	0.069	
601	4/25	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	157	37.6		0		0.065	0.065	
602	4/25	Fingerling facility					122	17.2		0		0.065	0.065	
603	4/25	Fingerling facility					111	11.8		0		0.069	0.069	
604	4/25	Fingerling facility					120	15.9		0		0.077	0.077	BKD ELISA +
605	4/25	Fingerling facility					126	18.5		0		0.086	0.086	BKD ELISA +
606	4/25	Fingerling facility					134	21.7	K	1,046		0.649	0.649	BKD ELISA +
607	4/25	Fingerling facility					120	15.4		0		0.066	0.066	
608	4/25	Fingerling facility					117	15.9		0		0.067	0.067	
609	4/25	Fingerling facility					127	17.5		0		0.070	0.070	
610	4/25	Fingerling facility					121	23.8		2		0.076	0.076	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1

611	4/25	Fingerling facility					125	11.8		2,650	TNTC	0.854	0.854	BKD ELISA +
612	4/25	Fingerling facility					130	19.5		1		0.062	0.062	
613	4/25	Fingerling facility					109	11.4		0		0.079	0.079	BKD ELISA +
614	4/25	Fingerling facility					116	14.6		0		0.063	0.063	
615	4/25	Fingerling facility					128	17.9		0		0.079	0.079	BKD ELISA +
616	4/25	Fingerling facility					133	22.5		0		0.071	0.071	
617	4/25	Fingerling facility					124	15.8		0		0.072	0.072	
618	4/25	Fingerling facility					129	20.0		0		0.066	0.066	
619	4/25	Fingerling facility					125	18.3		0		0.083	0.083	BKD ELISA +
620	4/25	Fingerling facility					123	17.2		0		0.065	0.065	
621	4/25	Fingerling facility					128	20.5		0		0.067	0.067	
622	4/25	Fingerling facility					126	17.0		0		0.063	0.063	
623	4/25	Fingerling facility					124	17.6	K	2,149		0.657	0.657	BKD ELISA +
624	4/25	Fingerling facility					125	17.4		0		0.073	0.073	
625	4/25	Fingerling facility					132	24.0		2,031		0.572	0.572	BKD ELISA +
626	4/25	Fingerling facility					127	18.8		0		0.074	0.074	
627	4/25	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	136	23.6		0		0.063	0.063	
628	4/25	Fingerling facility					140	26.0		0		0.077	0.077	BKD ELISA +
629	4/25	Fingerling facility					124	17.0		0		0.076	0.076	BKD ELISA +
630	4/25	Fingerling facility					90	6.2		0		0.067	0.067	
631	4/25	Fingerling facility					115	13.2		0		0.085	0.085	BKD ELISA +
632	4/25	Fingerling facility					124	16.2		0		0.067	0.067	
633	4/25	Fingerling facility					103	8.0		0		0.078	0.078	BKD ELISA +
634	4/25	Fingerling facility					125	17.5		0		0.056	0.056	
635	4/25	Fingerling facility					122	15.0		0		0.064	0.064	
636	4/25	Fingerling facility					127	18.9		0		0.069	0.069	
637	4/25	Fingerling facility	Sawtooth	Rapid River	Powell Creek	3/16-3/19/87	132	20.0		0		0.101	0.101	BKD ELISA +
638	4/25	Fingerling facility					114	12.8		0		0.063	0.063	
639	4/25	Fingerling facility					115	12.5		0		0.072	0.072	
640	4/25	Fingerling facility					118	15.0		0		0.066	0.066	
641	4/25	Fingerling facility					115	10.1		0		0.076	0.076	BKD ELISA +
642	4/25	Fingerling facility					129	19.5		1		0.090	0.090	BKD ELISA +
643	4/25	Fingerling facility					134	21.7		0		0.062	0.062	
644	4/25	Fingerling facility					121	16.8		0		0.061	0.061	
645	4/25	Fingerling facility					115	14.1		0		0.071	0.071	
646	4/25	Fingerling facility					113	13.2		0		0.072	0.072	

Appendix Table 31.--(continued)

647	4/25	Fingerling facility					117	14.8		0		0.056	0.056	
648	4/25	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	122	17.2		0		0.058	0.058	
649	4/25	Fingerling facility					117	14.0		0		0.071	0.071	
650	4/25	Fingerling facility					130	20.1		0		0.068	0.068	
651	4/26	Fingerling facility					136	23.2		0		0.058	0.058	
652	4/26	Fingerling facility					127	20.5		0		0.072	0.072	
653	4/26	Fingerling facility					136	22.2		0		0.079	0.079	BKD ELISA +
654	4/26	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	138	25.1		0		0.065	0.065	
655	4/26	Fingerling facility					133	22.8		0		0.059	0.059	
656	4/26	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	132	20.8		0		0.074	0.074	
657	4/26	Fingerling facility					133	22.7		0		0.077	0.077	BKD ELISA +
658	4/26	Fingerling facility					124	17.4		0		0.074	0.074	
659	4/26	Fingerling facility					125	17.9		0		0.080	0.080	BKD ELISA +
660	4/26	Fingerling facility					115	13.8		0		0.106	0.106	BKD ELISA +
661	4/26	Fingerling facility					123	19.2		0		0.061	0.061	
662	4/26	Fingerling facility					121	17.6		0		0.068	0.068	
663	4/26	Fingerling facility					136	22.0		0		0.066	0.066	
664	4/26	Fingerling facility					126	17.4		0		0.064	0.064	
665	4/26	Fingerling facility					137	24.2		0		0.057	0.057	
666	4/26	Fingerling facility					122	17.0		0		0.058	0.058	
667	4/26	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	190	68.2		3,920	TNTC	0.848	0.848	BKD ELISA +
668	4/26	Fingerling facility					125	18.5		0		0.063	0.063	
669	4/26	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	140	25.8		0		0.058	0.058	
670	4/26	Fingerling facility	Dworshak	Rapid River	Clearwater River	3/30-4/28/87	130	22.5		0		0.063	0.063	
671	4/26	Fingerling facility					126	19.3		0		0.054	0.054	
672	4/26	Fingerling facility					131	20.8		13		0.090	0.090	BKD ELISA +
673	4/26	Fingerling facility					120	16.1		0		0.070	0.070	
674	4/26	Fingerling facility					116	14.1		0		0.060	0.060	
675	4/26	Fingerling facility					133	19.8		0		0.062	0.062	
676	4/26	Fingerling facility					141	28.6	K	1,168		0.550	0.550	BKD ELISA +
677	4/26	Fingerling facility	Dworshak	Rapid River	Dworshak	4/1-4/2/87	120	17.0		31		0.427	0.427	BKD ELISA +
678	4/26	Fingerling facility					135	22.8		0		0.052	0.052	
679	4/26	Fingerling facility					120	15.5	K	62		0.191	0.191	BKD ELISA +
680	4/26	Fingerling facility					118	15.8		0		0.061	0.061	
681	4/26	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	155	25.5		0		0.061	0.061	
682	4/26	Fingerling facility					130	23.5		0		0.056	0.056	

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1

683	4/26	Fingerling facility					136	25.6		0		0.058	0.058	
684	4/26	Fingerling facility					151	34.7	K	17		0.580	0.580	BKD ELISA +
685	4/26	Fingerling facility					146	30.4		38		0.147	0.147	BKD ELISA +
686	4/26	Fingerling facility					145	34.4		0		0.056	0.056	
687	4/26	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	142	30.5		0		0.058	0.058	
688	4/26	Fingerling facility					126	16.0		7		0.118	0.118	BKD ELISA +
689	4/26	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	143	27.7		0		0.058	0.058	
690	4/26	Fingerling facility					105	10.0		0		0.074	0.074	
691	4/26	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	148	27.6		0		0.057	0.057	
692	4/26	Fingerling facility					135	22.3		613		0.383	0.383	BKD ELISA +
693	4/26	Fingerling facility					136	21.0		0		0.073	0.073	
694	4/26	Fingerling facility					137	22.6		0		0.059	0.059	
695	4/26	Fingerling facility					128	18.5		0		0.064	0.064	
696	4/26	Fingerling facility					124	20.2		0		0.072	0.072	
697	4/26	Fingerling facility	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	168	46.4		0		0.063	0.063	
698	4/26	Fingerling facility					113	12.2		0		0.076	0.076	BKD ELISA +
699	4/26	Fingerling facility					123	16.8		0		0.070	0.070	
700	4/26	Fingerling facility					130	18.3		0		0.074	0.074	
701	4/27	Gatewell 4B	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	138	26.2		0		0.060	0.060	
702	4/27	Gatewell 4B					125	22.1		0		0.071	0.071	
703	4/27	Gatewell 4B					103	11.6		0		0.070	0.070	
704	4/27	Gatewell 4B					144	32.2		0		0.072	0.072	
705	4/27	Gatewell 4B					138	29.6		0		0.071	0.071	
706	4/27	Gatewell 4B	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	122	17.5		13		0.496	0.496	BKD ELISA +
707	4/27	Gatewell 4B					132	24.4		0		0.061	0.061	
708	4/27	Gatewell 4B					130	25.8		0		0.060	0.060	
709	4/27	Gatewell 4B					129	23.8		0		0.077	0.077	BKD ELISA +
710	4/27	Gatewell 4B					133	27.2		0		0.064	0.064	
711	4/27	Gatewell 4B					124	20.1		0		0.066	0.066	
712	4/27	Gatewell 4B					120	18.2		0		0.066	0.066	
713	4/27	Gatewell 4B					122	18.7		0		0.071	0.071	
714	4/27	Gatewell 4B					116	16.8		0		0.061	0.061	
715	4/27	Gatewell 4B	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	132	26.0		0		0.067	0.067	
716	4/27	Gatewell 4B					128	22.3		0		0.075	0.075	
717	4/27	Gatewell 4B					122	19.5		0		0.066	0.066	
718	4/27	Gatewell 4B					115	16.5		35		0.109	0.109	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolt

719	4/27	Gatewell 4B	Sawtooth	Rapid River	Red River	3/16-3/19/87	114	11.0		143		0.330	0.330	BKD ELISA +
720	4/27	Gatewell 4B					119	16.6		0		0.068	0.068	
721	4/27	Gatewell 4B					128	22.5	K	568		0.158	0.158	BKD ELISA +
722	4/27	Gatewell 4B					130	21.2	K	2		0.987	0.987	BKD ELISA +
723	4/27	Gatewell 4B					109	16.0		0		0.066	0.066	
724	4/27	Gatewell 4B	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	121	18.0		0		0.078	0.078	BKD ELISA +
725	4/27	Gatewell 4B					118	18.0		0		0.083	0.083	BKD ELISA +
726	4/27	Gatewell 4B					118	18.4		0		0.071	0.071	
727	4/27	Gatewell 4B					124	21.5		0		0.069	0.069	
728	4/27	Gatewell 4B					120	19.9		0		0.068	0.068	
729	4/27	Gatewell 4B					119	15.8		0		0.079	0.079	BKD ELISA +
730	4/27	Gatewell 4B					113	16.5		0		0.073	0.073	
731	4/27	Closure net 4B					144	31.2	K	5		0.157	0.157	BKD ELISA +
732	4/27	Closure net 4B					127	19.2		0		0.067	0.067	
733	4/27	Closure net 4B					120	16.1		0		0.072	0.072	
734	4/27	Closure net 4B					130	22.8		0		0.061	0.061	
735	4/27	Closure net 4B					125	19.1		0		0.063	0.063	
736	4/27	Closure net 4B					125	18.9		0		0.066	0.066	
737	4/27	Closure net 4B					130	21.9		0		0.071	0.071	
738	4/27	Closure net 4B					118	17.1		0		0.064	0.064	
739	4/27	Closure net 4B					135	24.6		0		0.074	0.074	
740	4/27	Closure net 4B					128	20.6		0		0.071	0.071	
741	4/27	Closure net 4B					165	50.5		0		0.065	0.065	
742	4/27	Closure net 4B					125	18.7		0		0.069	0.069	
743	4/27	Closure net 4B	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	145	31.0		0		0.065	0.065	
744	4/27	Closure net 4B					122	17.6		0		0.083	0.083	BKD ELISA +
745	4/27	Closure net 4B					122	18.5		0		0.072	0.072	
746	4/27	Closure net 4B					159	43.2		0		0.065	0.065	
747	4/27	Closure net 4B					125	18.0		0		0.069	0.069	
748	4/27	Closure net 4B					119	16.0		0		0.071	0.071	
749	4/27	Closure net 4B					130	21.7	K	0		0.188	0.188	BKD ELISA +
750	4/27	Closure net 4B					126	21.5		0		0.068	0.068	
751	4/27	Closure net 4B					121	18.6		0		0.078	0.078	BKD ELISA +
752	4/27	Closure net 4B					109	12.8		0		0.071	0.071	
753	4/27	Closure net 4B					105	11.0		0		0.079	0.079	BKD ELISA +
754	4/27	Closure net 4B					135	21.9		0		0.087	0.087	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1

755	4/27	Closure net 4B	no tag found				134	22.4		1		0.337	0.337	BKD ELISA +
756	4/27	Closure net 4B					114	14.0		0		0.117	0.117	BKD ELISA +
757	4/27	Closure net 4B					120	14.5		0		0.074	0.074	
758	4/27	Closure net 4B					126	18.5		0		0.062	0.064	
759	4/27	Closure net 4B	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	128	20.6		0		0.076	0.078	BKD ELISA +
760	4/27	Closure net 4B					130	21.6		0		0.074	0.076	BKD ELISA +
761	4/27	Fyke net #1 4B	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	155	39.8		0		0.065	0.067	
762	4/27	Fyke net #1 4B					145	30.5		0		0.068	0.070	
763	4/27	Fyke net #1 4B					150	34.0	K	14		0.328	0.338	BKD ELISA +
764	4/27	Fyke net #1 4B	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	132	19.9		0		0.058	0.060	
765	4/27	Fyke net #1 4B					130	22.0		0		0.070	0.072	
766	4/27	Fyke net #1 4B					130	22.0		0		0.056	0.058	
767	4/27	Fyke net #1 4B					109	12.6		0		0.059	0.061	
768	4/27	Fyke net #1 4B					138	28.3		0		0.058	0.060	
769	4/27	Fyke net #1 4B					122	18.5		0		0.072	0.074	
770	4/27	Fyke net #1 4B					131	23.3		0		0.061	0.063	
771	4/27	Fyke net #1 4B	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	134	22.3		0		0.062	0.064	
772	4/27	Fyke net #1 4B					132	23.0		0		0.060	0.062	
773	4/27	Fyke net #1 4B					126	22.8		0		0.062	0.064	
774	4/27	Fyke net #1 4B					130	21.8		0		0.066	0.068	
775	4/27	Fyke net #1 4B					137	25.8		0		0.070	0.072	
776	4/27	Fyke net #1 4B					150	30.7		0		0.061	0.063	
777	4/27	Fyke net #1 4B					132	21.7		0		0.068	0.070	
778	4/27	Fyke net #1 4B					120	17.9		0		0.074	0.076	BKD ELISA +
779	4/27	Fyke net #1 4B					120	16.4		0		0.059	0.061	
780	4/27	Fyke net #1 4B					133	23.0		0		0.067	0.069	
781	4/27	Fyke net #1 4B					126	20.0		0		0.083	0.085	BKD ELISA +
782	4/27	Fyke net #1 4B	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	134	24.8		0		0.060	0.062	
783	4/27	Fyke net #1 4B					119	17.9		0		0.059	0.061	
784	4/27	Fyke net #1 4B					135	35.5		0		0.058	0.060	
785	4/27	Fyke net #1 4B	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	119	16.0		0		0.073	0.075	
786	4/27	Fyke net #2 4B					120	17.0		0		0.060	0.062	
787	4/27	Fyke net #2 4B					122	18.9		0		0.058	0.060	
788	4/27	Fyke net #2 4B					135	26.3		77		0.148	0.152	BKD ELISA +
789	4/27	Fyke net #2 4B					135	25.9		0		0.070	0.072	
790	4/27	Fyke net #2 4B					124	18.7		0		0.062	0.064	

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolts

791	4/27	Fyke net #2 4B					134	23.8		0		0.060	0.062	
792	4/27	*Fyke net #2 4B					125	20.2		0		0.063	0.065	
793	4/27	Fyke net #2 4B					120	16.3		0		0.063	0.065	
794	4/27	Fyke net #2 4B					124	19.4		0		0.068	0.070	
795	4/27	Fyke net #2 4B					170	49.9		0		0.061	0.063	
796	4/27	Fyke net #2 4B					160	36.5		0		0.069	0.071	
797	4/27	Fyke net #2 4B					127	20.2		0		0.130	0.134	BKD ELISA +
798	4/27	Fyke net #2 4B					141	27.9		0		0.057	0.059	
799	4/27	Fyke net #2 4B					140	28.3		0		0.060	0.062	
800	4/27	Fyke net #2 4B					133	25.4		0		0.068	0.070	
801	4/27	Fyke net #2 4B					120	16.2		0		0.131	0.135	BKD ELISA +
802	4/27	Fyke net #2 4B					130	21.1		0		0.067	0.069	
803	4/27	Fyke net #2 4B					125	18.6		0		0.074	0.076	BKD ELISA +
804	4/27	Fyke net #2 4B					133	21.9		0		0.058	0.060	
805	4/27	Fyke net #2 4B					134	22.3		0		0.060	0.062	
806	4/27	Fyke net #2 4B					113	13.7		0		0.054	0.054	
807	4/27	Fyke net #2 4B					134	23.0		10		0.069	0.069	
808	4/27	Fyke net #2 4B					129	20.4		0		0.073	0.073	
809	4/27	Fyke net #2 4B					137	26.2		0		0.056	0.056	
810	4/27	Fyke net #2 4B	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	172	50.3	KA	41,800	TNTC	0.624	0.624	BKD ELISA +
811	4/27	Fyke net #2 4B					115	24.5		0		0.065	0.065	
812	4/27	Fyke net #2 4B					125	20.1		0		0.060	0.060	
813	4/27	Fyke net #2 4B					122	18.5		0		0.057	0.057	
814	4/27	Fyke net #2 4B					114	17.7		0		0.067	0.067	
815	4/27	Fyke net #2 4B					140	23.5		0		0.054	0.054	
816	4/27	Fyke net #3 4B	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	136	27.5		3,928	TNTC	0.655	0.655	BKD ELISA +
817	4/27	Fyke net #3 4B	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	172	56.5		0		0.062	0.062	
818	4/27	Fyke net #3 4B	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	146	30.3		0		0.066	0.066	
819	4/27	Fyke net #3 4B					160	35.4		0		0.063	0.063	
820	4/27	Fyke net #3 4B					130	21.2		0		0.069	0.069	
821	4/27	Fyke net #3 4B					125	18.6		22		0.084	0.084	BKD ELISA +
822	4/27	Fyke net #3 4B					134	23.1		0		0.056	0.056	
823	4/27	Fyke net #3 4B					125	17.7		0		0.056	0.056	
824	4/27	Fyke net #3 4B					117	15.2		0		0.070	0.070	
825	4/27	Fyke net #3 4B					158	38.3		0		0.064	0.064	
826	4/27	Fyke net #3 4B	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	126	21.4		400,000	TNTC	0.904	0.904	BKD ELISA +

Appendix Table 31.--(continued)

827	4/27	Fyke net #3 4B					114	15.9		0		0.082	0.082	BKD ELISA +
828	4/27	Fyke net #3 4B					129	20.7		0		0.073	0.073	
829	4/27	Fyke net #3 4B					125	20.2		1		0.066	0.066	
830	4/27	Fyke net #3 4B					125	18.5		0		0.086	0.086	BKD ELISA +
831	4/27	Fyke net #3 4B					135	26.5	K	3,192	TNTC	0.815	0.815	BKD ELISA +
832	4/27	Fyke net #3 4B					124	17.4		0		0.062	0.062	
833	4/27	Fyke net #3 4B	*Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	125	21.0		0		0.079	0.079	BKD ELISA +
834	4/27	Fyke net #3 4B					101	10.0		0		0.069	0.069	
835	4/27	Fyke net #3 4B					105	9.9		0		0.080	0.080	BKD ELISA +
836	4/27	Fyke net #3 4B					132	23.1		0		0.075	0.075	
837	4/27	Fyke net #3 4B					125	19.3		0		0.068	0.068	
838	4/27	Fyke net #3 4B					125	19.0		0		0.058	0.058	
839	4/27	Fyke net #3 4B					120	17.1		0		0.074	0.074	
840	4/27	Fyke net #3 4B					123	18.2		0		0.072	0.072	
841	4/27	Fyke net #3 4B					115	14.2		0		0.061	0.061	
842	4/27	Fyke net #3 4B					108	12.3		0		0.063	0.063	
843	4/27	Fyke net #3 4B					124	17.2		0		0.065	0.065	
844	4/27	Fyke net #3 4B					125	22.1		0		0.076	0.076	BKD ELISA +
845	4/27	Fyke net #3 4B	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	136	27.4		0		0.071	0.071	
846	4/27	Fingerling facility					115	13.8		0		0.071	0.071	
847	4/27	Fingerling facility					119	15.1		0		0.084	0.084	BKD ELISA +
848	4/27	Fingerling facility					159	60.5	K/L	7,680	TNTC	0.882	0.882	BKD ELISA +
849	4/27	Fingerling facility					89	5.9		0		No Sample	No Sample	
850	4/27	Fingerling facility					100	9.3		0		0.071	0.071	
851	4/27	Fingerling facility					133	21.2		0		0.070	0.070	
852	4/27	Fingerling facility					109	12.6		2		0.083	0.083	BKD ELISA +
853	4/27	Fingerling facility					101	10.0		0		0.083	0.083	BKD ELISA +
854	4/27	Fingerling facility					135	12.9		0		0.064	0.064	
855	4/27	Fingerling facility					103	9.4		0		0.083	0.083	BKD ELISA +
856	4/27	Fingerling facility					133	21.3		0		0.079	0.079	BKD ELISA +
857	4/27	Fingerling facility					131	20.4		0		0.075	0.075	
858	4/27	Fingerling facility					132	22.5		0		0.061	0.061	
859	4/27	Fingerling facility					113	13.5		4,388	TNTC	0.829	0.829	BKD ELISA +
860	4/27	Fingerling facility	Dworshak	Rapid River	Dworshak	4/1-4/2/87	144	27.6		0		0.062	0.062	
861	4/27	Fingerling facility					105	10.7		0		0.145	0.145	BKD ELISA +
862	4/27	Fingerling facility					121	16.5		0		0.078	0.078	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolt

863	4/27	Fingerling facility					136	20.3		0		0.074	0.074	
864	4/27	Fingerling facility					140	26.5		0		0.059	0.059	
865	4/27	Fingerling facility					131	17.3		0		0.085	0.085	BKD ELISA +
866	4/27	Fingerling facility					108	12.6		0		0.071	0.071	
867	4/27	Fingerling facility					118	14.5		0		0.072	0.072	
868	4/27	Fingerling facility					134	19.7		0		0.061	0.061	
869	4/27	Fingerling facility					145	29.3		454		0.341	0.341	BKD ELISA +
870	4/27	Fingerling facility					122	16.0		0		0.072	0.072	
871	4/27	Fingerling facility					143	28.8		0		0.067	0.067	
872	4/27	Fingerling facility					146	28.3		0		0.089	0.089	BKD ELISA +
873	4/27	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	168	44.0		0		0.064	0.064	
874	4/27	Fingerling facility					129	19.8		0		0.079	0.079	BKD ELISA +
875	4/27	Fingerling facility					133	20.4		0		0.064	0.064	
876	4/27	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	138	24.6		0		0.058	0.058	
877	4/27	Fingerling facility					132	22.5		0		0.066	0.066	
878	4/27	Fingerling facility					133	21.3		0		0.071	0.071	
879	4/27	Fingerling facility					145	30.1		41		0.177	0.177	BKD ELISA +
880	4/27	Fingerling facility					116	11.4		0		0.081	0.081	BKD ELISA +
881	4/27	Fingerling facility					126	18.2		0		0.079	0.079	BKD ELISA +
882	4/27	Fingerling facility					132	20.0		0		0.060	0.060	
883	4/27	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	125	17.8		0		0.069	0.069	
884	4/27	Fingerling facility					104	10.8		0		0.073	0.073	
885	4/27	Fingerling facility					110	11.7		0		0.075	0.075	
886	4/27	Fingerling facility					149	33.3		0		0.065	0.065	
887	4/27	Fingerling facility					131	20.8		0		0.075	0.075	
888	4/27	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	130	21.0		0		0.062	0.062	
889	4/27	Fingerling facility					129	18.0		0		0.069	0.069	
890	4/27	Fingerling facility					125	16.8		0		0.067	0.067	
891	4/27	Fingerling facility					145	28.9	K	9,650	TNTC	0.963	0.963	BKD ELISA +
892	4/27	Fingerling facility					129	16.9		0		0.069	0.069	
893	4/27	Fingerling facility					141	16.8		1,318		0.463	0.463	BKD ELISA +
894	4/27	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	154	35.2		8		0.071	0.071	
895	4/27	Fingerling facility					101	8.4		769		0.756	0.756	BKD ELISA +
896	4/28	Fingerling facility					98	8.9		0		0.077	0.077	BKD ELISA +
897	4/28	Fingerling facility					136	12.1		0		0.072	0.072	
898	4/28	Fingerling facility					100	9.0		0		0.066	0.066	

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts

889	4/28	Fingerling facility					128	19.0		0		0.063	0.063	
930	4/28	Fingerling facility					128	19.2		0		0.075	0.075	
931	4/28	Fingerling facility					100	9.4		0		0.073	0.073	
932	4/28	Fingerling facility					140	25.3		0		0.060	0.060	
933	4/28	Fingerling facility					126	17.5		0		0.065	0.065	
934	4/28	Fingerling facility					131	21.1		0		0.067	0.067	
935	4/28	Fingerling facility					134	22.4		0		0.069	0.069	
936	4/28	Fingerling facility					135	21.9		0		0.075	0.075	
937	4/28	Fingerling facility					109	11.3		0		0.065	0.065	
938	4/28	Fingerling facility					127	18.1		0		0.067	0.067	
939	4/28	Fingerling facility					132	20.3		0		0.073	0.073	
910	4/28	Fingerling facility					104	9.9		0		0.073	0.073	
911	4/28	Fingerling facility					130	20.2		0		0.067	0.067	
912	4/28	Fingerling facility	Sawtooth	Rapid River	Red River	3/16-3/19/87	116	14.6		0		0.160	0.160	BKD ELISA +
913	4/28	Fingerling facility	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	126	18.6		0		0.077	0.077	BKD ELISA +
914	4/28	Fingerling facility					122	18.3		0		0.073	0.073	
915	4/28	Fingerling facility					124	17.8		0		0.062	0.062	
916	4/28	Fingerling facility					132	23.1		0		0.065	0.065	
917	4/28	Fingerling facility	Dworshak	Rapid River	Clearwater River	3/20-4/28/87	145	18.7		0		0.062	0.062	
918	4/28	Fingerling facility					132	22.3		0		0.061	0.061	
919	4/28	Fingerling facility					121	15.1		0		0.073	0.073	
920	4/28	Fingerling facility					123	18.8		0		0.085	0.085	BKD ELISA +
921	4/28	Fingerling facility	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	176	51.5		0		0.095	0.095	BKD ELISA +
922	4/28	Fingerling facility					115	14.5		0		0.079	0.079	BKD ELISA +
923	4/28	Fingerling facility					125	17.0		0		0.065	0.065	
924	4/28	Fingerling facility					134	24.6		0		0.081	0.081	BKD ELISA +
925	4/28	Fingerling facility					129	19.8		0		0.066	0.066	
926	4/28	Fingerling facility					133	22.0		0		0.065	0.065	
927	4/28	Fingerling facility					128	18.8		0		0.064	0.064	
928	4/28	Fingerling facility					123	17.4		0		0.084	0.084	BKD ELISA +
929	4/28	Fingerling facility					130	19.7		0		0.071	0.071	
930	4/28	Fingerling facility					112	13.7	K	19,540	TNTC	0.845	0.845	BKD ELISA +
931	4/28	Fingerling facility					107	11.0		0		0.074	0.074	
932	4/28	Fingerling facility					131	22.4		0		0.067	0.067	
933	4/28	Fingerling facility					133	23.9		0		0.067	0.067	
934	4/28	Fingerling facility					129	20.1		3		0.080	0.080	BKD ELISA +

Appendix Table 31.--(continued)

935	4/28	Fingerling facility					117	14.8		6		0.076	0.076	BKD ELISA +
936	4/28	Fingerling facility					136	23.8	K	167		0.309	0.309	BKD ELISA +
937	4/28	Fingerling facility					115	14.9		0		0.098	0.098	BKD ELISA +
938	4/28	Fingerling facility					129	21.9		0		0.070	0.070	
939	4/28	Fingerling facility					108	11.0		0		0.082	0.082	BKD ELISA +
940	4/28	Fingerling facility					124	17.7		0		0.084	0.084	BKD ELISA +
941	4/28	Fingerling facility					130	20.1		0		0.067	0.067	
942	4/28	Fingerling facility					121	14.0		0		0.072	0.072	
943	4/28	Fingerling facility					134	22.4		2		0.068	0.068	
944	4/28	Fingerling facility					101	9.8		0		0.079	0.079	BKD ELISA +
945	4/28	Fingerling facility	Sawtooth	Rapid River	Red River	3/16-3/19/87	121	15.8		0		0.091	0.091	BKD ELISA +
946	4/29	Fingerling facility					130	15.4		0		0.065	0.065	
947	4/29	Fingerling facility					110	11.9	K	365		0.761	0.761	BKD ELISA +
948	4/29	Fingerling facility					116	13.2		0		0.081	0.081	BKD ELISA +
949	4/29	Fingerling facility					123	16.7		0		0.082	0.082	BKD ELISA +
950	4/29	Fingerling facility					108	10.3		0		0.085	0.085	BKD ELISA +
951	4/29	Fingerling facility					107	11.3		0		0.077	0.077	BKD ELISA +
952	4/29	Fingerling facility					108	10.9		0		0.077	0.077	BKD ELISA +
953	4/29	Fingerling facility					133	21.8		0		0.078	0.078	BKD ELISA +
954	4/29	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	135	23.7		4		0.078	0.078	BKD ELISA +
955	4/29	Fingerling facility					120	14.5		0		0.116	0.116	BKD ELISA +
956	4/29	Fingerling facility					128	19.5		0		0.084	0.084	BKD ELISA +
957	4/29	Fingerling facility					131	19.5		1		0.089	0.089	BKD ELISA +
958	4/29	Fingerling facility					120	16.7		0		0.078	0.078	BKD ELISA +
959	4/29	Fingerling facility					142	25.9		0		0.077	0.077	BKD ELISA +
960	4/29	Fingerling facility					133	22.6		0		0.107	0.107	BKD ELISA +
961	4/29	Fingerling facility					132	19.5	K	2,512	TNTC	0.873	0.873	BKD ELISA +
962	4/29	Fingerling facility					130	19.5	K	257		0.668	0.668	BKD ELISA +
963	4/29	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	132	20.0		0		0.075	0.075	*
964	4/29	Fingerling facility					128	19.5		0		0.085	0.085	BKD ELISA +
965	4/29	Fingerling facility					100	10.4		0		0.077	0.077	BKD ELISA +
966	4/29	Fingerling facility					125	15.8		0		0.061	0.061	
967	4/29	Fingerling facility					122	15.0		0		0.129	0.129	BKD ELISA +
968	4/29	Fingerling facility	no tag found				121	15.0		0		0.082	0.082	BKD ELISA +
969	4/29	Fingerling facility					131	17..0		0		0.077	0.077	BKD ELISA +
970	4/29	Fingerling facility					122	14.0		178		0.204	0.204	BKD ELISA +

Appendix Table 31.--(continued)

971	4/29	Fingerling facility					138	22.5		0		0.072	0.072	
972	4/29	Fingerling facility					136	22.5		0		0.072	0.072	
973	4/29	Fingerling facility					132	20.8	K	69		0.135	0.135	BKD ELISA +
974	4/29	Fingerling facility					148	28.5		0		0.067	0.067	
975	4/29	Fingerling facility					132	21.0		0		0.070	0.070	
976	4/29	Fingerling facility					135	21.0		0		0.072	0.072	
977	4/29	Fingerling facility					126	18.0		0		0.067	0.067	
978	4/29	Fingerling facility					141	24.8		0		0.071	0.071	
979	4/29	Fingerling facility					119	14.7		0		0.080	0.080	BKD ELISA +
980	4/29	Fingerling facility					108	9.7		0		0.077	0.077	BKD ELISA +
981	4/29	Fingerling facility					130	18.5		0		0.077	0.077	BKD ELISA +
982	4/29	Fingerling facility					126	17.0		0		0.081	0.081	BKD ELISA +
983	4/29	Fingerling facility					135	20.3		0		0.074	0.074	
984	4/29	Fingerling facility					129	21.0		73		0.203	0.203	BKD ELISA +
985	4/29	Fingerling facility					113	12.7		0		0.074	0.074	
986	4/29	Fingerling facility					140	25.8		4		0.120	0.120	BKD ELISA +
987	4/29	Fingerling facility					131	20.5		0		0.065	0.065	
988	4/29	Fingerling facility					136	21.7		0		0.070	0.070	
989	4/29	Fingerling facility					132	20.5		0		0.069	0.069	
990	4/29	Fingerling facility					121	25.3		2		0.081	0.081	BKD ELISA +
991	4/29	Fingerling facility					110	12.5		0		0.072	0.072	
992	4/29	Fingerling facility					122	17.0		0		0.075	0.075	
993	4/29	Fingerling facility					131	19.5		0		0.076	0.076	BKD ELISA +
994	4/29	Fingerling facility					138	25.9		0		0.119	0.119	BKD ELISA +
995	4/29	Fingerling facility					128	18.0		0		0.067	0.067	
996	4/30	Gatewell 4B					127	22.0		0		0.077	0.077	BKD ELISA +
997	4/30	Gatewell 4B					102	10.6		0		0.076	0.076	BKD ELISA +
998	4/30	Gatewell 4B					117	18.4		0		0.100	0.100	BKD ELISA +
999	4/30	Gatewell 4B					112	14.6		0		0.071	0.071	
1000	4/30	Gatewell 4B					128	26.4		0		0.073	0.073	
1001	4/30	Gatewell 4B					118	17.5		0		0.075	0.075	
1002	4/30	Gatewell 4B					96	9.5		0		0.080	0.080	BKD ELISA +
1003	4/30	Gatewell 4B					130	26.0		0		0.083	0.083	BKD ELISA +
1004	4/30	Gatewell 4B	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	151	35.6		0		0.070	0.070	
1005	4/30	Gatewell 4B					115	17.0		61		0.353	0.353	BKD ELISA +
1006	4/30	Gatewell 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	154	50.0		0		0.078	0.078	BKD ELISA +

Appendix Table 31.--(continued)

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Lower Granite Dam SCS Smolts 198

007	4/30	Gatewell 4B					140	31.6		0		0.078	0.078	BKD ELISA +
008	4/30	Gatewell 4B	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	132	25.2		0		0.076	0.076	BKD ELISA +
009	4/30	Gatewell 4B	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	122	20.7		0		0.079	0.079	BKD ELISA +
010	4/30	Gatewell 4B	Lookingglass	Rapid River	Lookingglass Hatch.	4/1/87	128	23.3		0		0.077	0.077	BKD ELISA +
011	4/30	Gatewell 4B					128	20.2		0		0.080	0.080	BKD ELISA +
012	4/30	Gatewell 4B					111	17.7		0		0.088	0.088	BKD ELISA +
013	4/30	Gatewell 4B					129	22.5		0		0.079	0.079	BKD ELISA +
014	4/30	Gatewell 4B	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	122	20.8		0		0.094	0.094	BKD ELISA +
015	4/30	Gatewell 4B					105	14.2		0		0.082	0.082	BKD ELISA +
016	4/30	Gatewell 4B					103	13.1		0		0.075	0.075	
017	4/30	Gatewell 4B					112	15.9		0		0.080	0.080	BKD ELISA +
018	4/30	Gatewell 4B	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	125	21.6		0		0.083	0.083	BKD ELISA +
019	4/30	Gatewell 4B					120	17.6		0		0.075	0.075	
020	4/30	Gatewell 4B					129	26.3		35		0.217	0.217	BKD ELISA +
021	4/30	Gatewell 4B					122	22.0		0		0.079	0.079	BKD ELISA +
022	4/30	Gatewell 4B					130	26.4		0		0.077	0.077	BKD ELISA +
023	4/30	Gatewell 4B	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	114	15.3		0		0.087	0.087	BKD ELISA +
024	4/30	Gatewell 4B					103	12.4		0		0.084	0.084	BKD ELISA +
025	4/30	Gatewell 4B					119	18.2		0		0.093	0.093	BKD ELISA +
026	4/30	Closure net 4B					124	20.1	K	67		0.851	0.851	BKD ELISA +
027	4/30	Closure net 4B					126	19.8		0		0.069	0.069	
028	4/30	Closure net 4B					128	22.8		0		0.069	0.069	
029	4/30	Closure net 4B					123	18.4	K	3		0.192	0.192	BKD ELISA +
030	4/30	Closure net 4B					126	18.6		0		0.084	0.084	BKD ELISA +
031	4/30	Closure net 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	165	48.3		0		0.064	0.064	
032	4/30	Closure net 4B					135	24.5		0		0.072	0.072	
033	4/30	Closure net 4B					130	20.0		0		0.073	0.073	
034	4/30	Closure net 4B					132	25.2	K	51		0.453	0.453	BKD ELISA +
035	4/30	Closure net 4B					123	19.4		0		0.071	0.071	
036	4/30	Closure net 4B					134	23.8		0		0.072	0.072	
037	4/30	Closure net 4B					125	18.1		0		0.078	0.078	BKD ELISA +
038	4/30	Closure net 4B					128	21.0		0		0.076	0.076	BKD ELISA +
039	4/30	Closure net 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	151	39.6		0		0.076	0.076	BKD ELISA +
040	4/30	Closure net 4B					122	16.5		0		0.083	0.083	BKD ELISA +
041	4/30	Closure net 4B					130	22.0		0		0.074	0.074	
042	4/30	Closure net 4B					110	14.0		0		0.079	0.079	BKD ELISA +

Appendix Table 31.--(continued)

1043	4/30	Closure net 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	158	40.2		0		0.077	0.077	BKD ELISA +
1044	4/30	Closure net 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	135	25.5		0		0.074	0.074	
1045	4/30	Closure net 4B					155	39.0		0		0.080	0.080	BKD ELISA +
1046	4/30	Closure net 4B					138	26.1		0		0.082	0.082	BKD ELISA +
1047	4/30	Closure net 4B					124	18.2		0		0.075	0.075	
1048	4/30	Closure net 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	172	55.5		0		0.079	0.079	BKD ELISA +
1049	4/30	Closure net 4B	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	175	65.0		0		0.076	0.076	BKD ELISA +
1050	4/30	Closure net 4B	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	125	19.0		0		0.080	0.080	BKD ELISA +
1051	4/30	Closure net 4B					120	17.0		0		0.073	0.073	
1052	4/30	Closure net 4B					140	27.6		0		0.067	0.067	
1053	4/30	Closure net 4B					120	17.4		0		0.084	0.084	BKD ELISA +
1054	4/30	Closure net 4B					136	26.1		0		0.088	0.088	BKD ELISA +
1055	4/30	Closure net 4B					123	19.5		0		0.070	0.070	
1056	4/30	Fyke net #1 4B					130	22.7		0		0.078	0.078	BKD ELISA +
1057	4/30	Fyke net #1 4B					158	39.7		0		0.068	0.068	
1058	4/30	Fyke net #1 4B					126	21.0	K	8,000	TNTC	1.151	1.151	BKD ELISA +
1059	4/30	Fyke net #1 4B					122	17.5		0		0.075	0.075	
1060	4/30	Fyke net #1 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	180	60.0		0		0.074	0.074	
1061	4/30	Fyke net #1 4B					138	25.9		0		0.081	0.081	BKD ELISA +
1062	4/30	Fyke net #1 4B					126	20.4		0		0.084	0.084	BKD ELISA +
1063	4/30	Fyke net #1 4B	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	165	49.3		0		0.077	0.077	BKD ELISA +
1064	4/30	Fyke net #1 4B					128	20.5		0		0.078	0.078	BKD ELISA +
1065	4/30	Fyke net #1 4B					139	25.1		0		0.077	0.077	BKD ELISA +
1066	4/30	Fyke net #1 4B					125	17.8		0		0.090	0.090	BKD ELISA +
1067	4/30	Fyke net #1 4B	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	130	22.6		0		0.078	0.078	BKD ELISA +
1068	4/30	Fyke net #1 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	149	34.8		0		0.075	0.075	
1069	4/30	Fyke net #1 4B					132	23.5	K	0		0.104	0.104	BKD ELISA +
1070	4/30	Fyke net #1 4B					132	24.5		0		0.078	0.078	BKD ELISA +
1071	4/30	Fyke net #1 4B	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	134	22.6		0		0.084	0.084	BKD ELISA +
1072	4/30	Fyke net #1 4B					114	13.9		30		0.198	0.198	BKD ELISA +
1073	4/30	Fyke net #1 4B					135	25.3		0		0.073	0.073	
1074	4/30	Fyke net #1 4B	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	125	20.1		0		0.076	0.076	BKD ELISA +
1075	4/30	Fyke net #1 4B					129	20.7		0		0.063	0.063	
1076	4/30	Fyke net #1 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	135	25.8		0		0.066	0.066	
1077	4/30	Fyke net #1 4B	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	139	26.3		0		0.062	0.062	
1078	4/30	Fyke net #1 4B					120	17.7		0		0.067	0.067	

Appendix Table 31.--(continued)

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1079	4/30	Fyke net #1 4B					133	24.3		0		0.063	0.063	
1080	4/30	Fyke net #1 4B					95	8.6		0		0.069	0.069	
1081	4/30	Fyke net #1 4B					130	24.2		0		0.063	0.063	
1082	4/30	Fyke net #1 4B					100	11.0		0		0.075	0.075	
1083	4/30	Fyke net #2 4B					127	22.0		0		0.071	0.071	
1084	4/30	Fyke net #2 4B					119	16.5		0		0.068	0.068	
1085	4/30	Fyke net #2 4B					127	19.0		0		0.072	0.072	
1086	4/30	Fyke net #2 4B					131	23.0		0		0.066	0.066	
1087	4/30	Fyke net #2 4B					119	16.5		5,910	TNTC	0.953	0.953	BKD ELISA +
1088	4/30	Fyke net #2 4B					121	18.7		172		0.333	0.333	BKD ELISA +
1089	4/30	Fyke net #2 4B					142	29.0		28		0.065	0.065	
1090	4/30	Fyke net #2 4B					135	25.0		2		0.063	0.063	
1091	4/30	Fyke net #2 4B					115	16.2		0		0.072	0.072	
1092	4/30	Fyke net #2 4B					132	25.2		2		0.069	0.069	
1093	4/30	Fyke net #2 4B					142	33.2		2		0.082	0.082	BKD ELISA +
1094	4/30	Fyke net #2 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	170	57.7		0		0.074	0.074	
1095	4/30	Fyke net #2 4B					110	12.7		0		0.067	0.067	
1096	4/30	Fyke net #2 4B					122	19.0		0		0.069	0.069	
1097	4/30	Fyke net #2 4B					126	19.0		0		0.079	0.079	BKD ELISA +
1098	4/30	Fyke net #2 4B					130	23.8		1		0.085	0.085	BKD ELISA +
1099	4/30	Fyke net #2 4B					129	20.4		0		0.066	0.066	
1100	4/30	Fyke net #2 4B	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	150	36.1		0		0.064	0.064	
1101	4/30	Fyke net #2 4B					135	23.7		0		0.074	0.074	
1102	4/30	Fyke net #2 4B					128	21.0	K	758		0.683	0.683	BKD ELISA +
1103	4/30	Fyke net #2 4B					124	19.0		0		0.063	0.063	
1104	4/30	Fyke net #2 4B					125	20.0		0		0.068	0.068	
1105	4/30	Fyke net #2 4B					125	18.5		0		0.065	0.065	
1106	4/30	Fyke net #2 4B					126	21.5		0		0.073	0.073	
1107	4/30	Fyke net #2 4B					142	29.0		2		0.061	0.061	
1108	4/30	Fyke net #2 4B					161	45.5		0		0.072	0.072	
1109	4/30	Fyke net #2 4B					128	19.1		0		0.058	0.058	
1110	4/30	Fyke net #2 4B					150	36.6		0		0.072	0.072	
1111	4/30	Fyke net #2 4B					117	15.9		0		0.058	0.058	
1112	4/30	Fyke net #3 4B					136	25.1		0		0.064	0.064	
1113	4/30	Fyke net #3 4B					116	14.6		4		0.074	0.074	
1114	4/30	Fyke net #3 4B					120	17.7		0		0.065	0.065	

Appendix Table 31.--(continued)

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1115	4/30	Fyke net #3 4B	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	125	22.7	K	70		0.697	0.697	BKD ELISA +
1116	4/30	Fyke net #3 4B					134	21.5		0		0.061	0.061	
1117	4/30	Fyke net #3 4B					122	18.1		167		0.824	0.824	BKD ELISA +
1118	4/30	Fyke net #3 4B					150	39.8		0		0.064	0.064	
1119	4/30	Fyke net #3 4B					114	16.1		0		0.066	0.066	
1120	4/30	Fyke net #3 4B	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	188	78.0		0		0.079	0.079	BKD ELISA +
1121	4/30	Fyke net #3 4B					145	31.8		0		0.076	0.076	BKD ELISA +
1122	4/30	Fyke net #3 4B					126	20.6		0		0.074	0.074	
1123	4/30	Fyke net #3 4B	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	120	17.8		3		0.075	0.075	
1124	4/30	Fyke net #3 4B	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	126	20.1		24		0.139	0.139	BKD ELISA +
1125	4/30	Fyke net #3 4B					125	20.0		0		0.076	0.076	BKD ELISA +
1126	4/30	Fyke net #3 4B					125	18.6		0		0.074	0.074	
1127	4/30	Fyke net #3 4B					129	25.1		0		0.058	0.058	
1128	4/30	Fyke net #3 4B	Dworshak	Rapid River	Dworshak Hatch.	4/1-4/2/87	140	29.6	K/SP	183		0.348	0.348	BKD ELISA +
1129	4/30	Fyke net #3 4B					114	15.1		0		0.080	0.080	BKD ELISA +
1130	4/30	Fyke net #3 4B					130	21.6		0		0.066	0.066	
1131	4/30	Fyke net #3 4B					116	15.1		0		0.073	0.073	
1132	4/30	Fingerling facility					120	15.5		0		0.065	0.065	
1133	4/30	Fingerling facility	Sawtooth	Rapid River	Red River	3/16-3/19/87	128	20.3		1		0.085	0.085	BKD ELISA +
1134	4/30	Fingerling facility					134	21.6		0		0.063	0.063	
1135	4/30	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Creek	9/24/86	132	23.2		0		0.090	0.090	BKD ELISA +
1136	4/30	Fingerling facility					134	24.9		0		0.072	0.072	
1137	4/30	Fingerling facility					128	20.8		0		0.067	0.067	
1138	4/30	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	137	25.9		0		0.065	0.065	
1139	4/30	Fingerling facility					113	13.3		0		0.091	0.091	BKD ELISA +
1140	4/30	Fingerling facility					131	19.9		0		0.066	0.066	
1141	4/30	Fingerling facility					153	34.3		0		0.071	0.071	
1142	4/30	Fingerling facility					120	15.8		0		0.072	0.072	
1143	4/30	Fingerling facility					123	15.8	K	29		0.653	0.653	BKD ELISA +
1144	4/30	Fingerling facility					115	17.9		0		0.060	0.060	
1145	4/30	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	127	19.5		0		0.073	0.073	
1146	4/30	Fingerling facility					135	22.2		0		0.062	0.062	
1147	4/30	Fingerling facility					129	18.2		0		0.059	0.059	
1148	4/30	Fingerling facility					129	23.0		0		0.067	0.067	
1149	4/30	Fingerling facility					120	16.3		0		0.067	0.067	
1150	4/30	Fingerling facility					120	16.6	K	261		0.757	0.757	BKD ELISA +

Appendix Table 31.--(continued)

1151	4/30	Fingerling facility					125	19.1		0		0.122	0.122	BKD ELISA +
1152	4/30	Fingerling facility					119	18.0		0		0.065	0.065	
1153	4/30	Fingerling facility					126	17.7		0		0.072	0.072	
1154	4/30	Fingerling facility					121	18.0		0		0.072	0.072	
1155	4/30	Fingerling facility					119	17.4		0		0.068	0.068	
1156	4/30	Fingerling facility					124	16.9		0		0.064	0.064	
1157	4/30	Fingerling facility					106	11.4		0		0.073	0.073	
1158	4/30	Fingerling facility					132	21.9		0		0.070	0.070	
1159	4/30	Fingerling facility					120	16.5		0		0.099	0.099	BKD ELISA +
1160	4/30	Fingerling facility					127	21.2		0		0.068	0.068	
1161	4/30	Fingerling facility					145	30.2		0		0.059	0.059	
1162	4/30	Fingerling facility					139	26.8		0		0.066	0.066	
1163	4/30	Fingerling facility					126	18.3		0		0.072	0.072	
1164	4/30	Fingerling facility					125	19.0		0		0.065	0.065	
1165	4/30	Fingerling facility					138	26.8		0		0.064	0.064	
1166	4/30	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	136	22.2		0		0.085	0.085	BKD ELISA +
1167	4/30	Fingerling facility					132	24.2		0		0.063	0.063	
1168	4/30	Fingerling facility					118	16.3		0		0.071	0.071	
1169	4/30	Fingerling facility					114	14.6	yes	0		0.563	0.563	BKD ELISA +
1170	4/30	Fingerling facility					124	17.5		0		0.108	0.108	BKD ELISA +
1171	4/30	Fingerling facility					130	20.1		55		0.516	0.516	BKD ELISA +
1172	4/30	Fingerling facility					125	19.0		0		0.061	0.061	
1173	4/30	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	133	22.3		0		0.065	0.065	
1174	4/30	Fingerling facility					116	14.3		0		0.072	0.072	
1175	4/30	Fingerling facility					133	21.7		0		0.064	0.064	
1176	4/30	Fingerling facility					140	27.7		0		0.091	0.091	BKD ELISA +
1177	4/30	Fingerling facility					135	20.8		0		0.061	0.061	
1178	4/30	Fingerling facility					147	33.8		0		0.064	0.064	
1179	4/30	Fingerling facility	Lookingglass	Lookingglass	Lookingglass Hatch.	4/1/87	133	22.6		0		0.072	0.072	
1180	4/30	Fingerling facility					132	22.4		12		0.113	0.113	BKD ELISA +
1181	4/30	Fingerling facility					102	9.5		0		0.070	0.070	
1182	5/1	Fingerling facility					129	22.5		0		0.064	0.064	
1183	5/1	Fingerling facility					136	24.0		0		0.079	0.079	BKD ELISA +
1184	5/1	Fingerling facility					108	12.0		0		0.073	0.073	
1185	5/1	Fingerling facility					113	14.8		2		0.073	0.073	
1186	5/1	Fingerling facility					122	16.1		0		0.080	0.080	BKD ELISA +

Appendix Table 31.--(continued)

1187	5/1	Fingerling facility					125	17.8		0		0.070	0.070	
1188	5/1	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	146	28.3		0		0.071	0.071	
1189	5/1	Fingerling facility					142	31.5		5		0.120	0.120	BKD ELISA +
1190	5/1	Fingerling facility					130	20.0	K	1		0.076	0.076	BKD ELISA +
1191	5/1	Fingerling facility					126	17.4		4		0.116	0.116	BKD ELISA +
1192	5/1	Fingerling facility					130	21.4		8		0.091	0.091	BKD ELISA +
1193	5/1	Fingerling facility					133	22.4		3		0.065	0.065	
1194	5/1	Fingerling facility					135	20.4		1		0.086	0.086	BKD ELISA +
1195	5/1	Fingerling facility					120	15.1		10		0.067	0.067	
1196	5/1	Fingerling facility					121	16.6		12		0.082	0.082	BKD ELISA +
1197	5/1	Fingerling facility					114	10.3		11		0.082	0.082	BKD ELISA +
1198	5/1	Fingerling facility					121	17.8		11		0.071	0.071	
1199	5/1	Fingerling facility					119	16.1		3		0.074	0.074	
1200	5/1	Fingerling facility					128	19.7		5		0.102	0.102	BKD ELISA +
1201	5/1	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	135	24.1		2		0.067	0.067	
1202	5/1	Fingerling facility					126	11.2		0		0.067	0.067	
1203	5/1	Fingerling facility					124	11.4		5		0.062	0.062	
1204	5/1	Fingerling facility					147	29.9		0		0.114	0.114	BKD ELISA +
1205	5/1	Fingerling facility					139	24.4		0		0.066	0.066	
1206	5/1	Fingerling facility					143	30.4	K	0		0.202	0.202	BKD ELISA +
1207	5/1	Fingerling facility					126	18.5		0		0.057	0.057	
1208	5/1	Fingerling facility					138	23.3		0		0.064	0.064	
1209	5/1	Fingerling facility					130	18.8		6		0.070	0.070	
1210	5/1	Fingerling facility					120	16.7		0		0.080	0.080	BKD ELISA +
1211	5/1	Fingerling facility					116	11.7		5		0.066	0.066	
1212	5/1	Fingerling facility					100	9.7		2		0.072	0.072	
1213	5/1	Fingerling facility					125	19.9		4		0.067	0.067	
1214	5/1	Fingerling facility					124	18.2		6		0.076	0.076	BKD ELISA +
1215	5/1	Fingerling facility					129	20.6		0		0.068	0.068	
1216	5/1	Fingerling facility					105	11.4		3		0.073	0.073	
1217	5/1	Fingerling facility					129	19.8		0		0.062	0.062	
1218	5/1	Fingerling facility					90	7.1		21		0.086	0.086	BKD ELISA +
1219	5/1	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	125	19.7		0		0.069	0.069	
1220	5/1	Fingerling facility					107	12.6		0		0.073	0.073	
1221	5/1	Fingerling facility					145	30.7		76		0.086	0.086	BKD ELISA +
1222	5/1	Fingerling facility					136	23.1		33		0.104	0.104	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolts 1

223	5/1	Fingerling facility					141	24.9		0		0.060	0.060	
224	5/1	Fingerling facility					136	22.4		11		0.063	0.063	
225	5/1	Fingerling facility					135	22.8		0		0.076	0.076	BKD ELISA +
226	5/1	Fingerling facility					141	27.0		0		0.067	0.067	
227	5/1	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	153	34.9	K	0		0.146	0.146	BKD ELISA +
228	5/1	Fingerling facility					138	24.6		13		0.067	0.067	
229	5/1	Fingerling facility					132	22.5		0		0.168	0.168	BKD ELISA +
230	5/1	Fingerling facility	Lookingglass	Carson	Big Canyon Cr Wallowa R	3/30-4/1/87	160	42.0		0		0.068	0.068	
231	5/1	Fingerling facility					139	26.8		0		0.068	0.068	
232	5/2	Fingerling facility					97	8.7		0		0.073	0.073	
233	5/2	Fingerling facility					120	16.4		0		0.064	0.064	
234	5/2	Fingerling facility					134	24.0		0		0.074	0.074	
235	5/2	Fingerling facility					105	11.7		0		0.073	0.073	
236	5/2	Fingerling facility					132	23.1		0		0.070	0.070	
237	5/2	Fingerling facility					121	17.0		0		0.067	0.067	
238	5/2	Fingerling facility					131	21.0		0		0.075	0.075	
239	5/2	Fingerling facility					102	9.8		0		0.070	0.070	
240	5/2	Fingerling facility					126	17.3		0		0.065	0.065	
241	5/2	Fingerling facility					126	19.3		0		0.062	0.062	
242	5/2	Fingerling facility					123	17.7		0		0.079	0.079	BKD ELISA +
243	5/2	Fingerling facility					110	12.7		0		0.071	0.071	
244	5/2	Fingerling facility					143	27.8	K	252		0.375	0.375	BKD ELISA +
245	5/2	Fingerling facility					128	19.5		0		0.089	0.089	BKD ELISA +
246	5/2	Fingerling facility					101	10.0		0		0.080	0.080	BKD ELISA +
247	5/2	Fingerling facility					138	24.0		0		0.055	0.057	
248	5/2	Fingerling facility					114	13.3	K	883		0.440	0.453	BKD ELISA +
249	5/2	Fingerling facility					124	18.6		0		0.070	0.072	
250	5/2	Fingerling facility					130	17.4	K	0		0.064	0.066	
251	5/2	Fingerling facility					140	24.0		0		0.055	0.057	
252	5/2	Fingerling facility					125	19.9		0		0.055	0.057	
253	5/2	Fingerling facility					132	25.5		0		0.060	0.062	
254	5/2	Fingerling facility					111	15.2		0		0.067	0.069	
255	5/2	Fingerling facility					119	17.5		0		0.061	0.063	
256	5/2	Fingerling facility					135	21.3		0		0.062	0.064	
257	5/2	Fingerling facility					140	26.4		0		0.054	0.056	
258	5/2	Fingerling facility					122	15.3	K	1,345		0.710	0.731	BKD ELISA +

Appendix Table 31.--(continued)

259	5/2	Fingerling facility					129	21.5		0		0.076	0.078	BKD ELISA +
260	5/2	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	133	25.4		0		0.056	0.058	
261	5/2	Fingerling facility					135	23.4		0		0.067	0.069	
262	5/2	Fingerling facility					125	19.4		0		0.059	0.061	
263	5/2	Fingerling facility					118	16.7		0		0.063	0.065	
264	5/2	Fingerling facility					111	12.3		5		0.088	0.091	BKD ELISA +
265	5/2	Fingerling facility					135	24.7		0		0.077	0.079	BKD ELISA +
266	5/2	Fingerling facility					99	9.5		0		0.081	0.083	BKD ELISA +
267	5/2	Fingerling facility					108	11.5		0		0.073	0.075	
268	5/2	Fingerling facility					138	24.1		0		0.055	0.057	
269	5/2	Fingerling facility					130	21.9		0		0.054	0.056	
270	5/2	Fingerling facility					131	20.6		9		0.065	0.067	
271	5/2	Fingerling facility					137	22.7		0		0.067	0.069	
272	5/2	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	127	19.7		0		0.060	0.062	
273	5/2	Fingerling facility					116	14.6		0		0.072	0.074	
274	5/2	Fingerling facility					108	12.0		0		0.064	0.066	
275	5/2	Fingerling facility					136	23.2		0		0.060	0.060	
276	5/2	Fingerling facility					135	23.0		0		0.067	0.067	
277	5/2	Fingerling facility					130	23.0	K	0		0.163	0.163	BKD ELISA +
278	5/2	Fingerling facility					132	21.9		0		0.068	0.068	
279	5/2	Fingerling facility					118	14.5		0		0.067	0.067	
280	5/2	Fingerling facility					126	19.5		0		0.064	0.064	
281	5/2	Fingerling facility					101	9.8		0		0.073	0.073	
282	5/3	Fingerling facility					102	10.6		0		0.081	0.081	BKD ELISA +
283	5/3	Fingerling facility					119	14.8		0		0.066	0.066	
284	5/3	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	132	23.2		0		0.059	0.059	
285	5/3	Fingerling facility					95	8.6		0		0.070	0.070	
286	5/3	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	150	32.6		0		0.081	0.081	BKD ELISA +
287	5/3	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	122	16.8		0		0.089	0.089	BKD ELISA +
288	5/3	Fingerling facility					145	28.1		0		0.056	0.056	
289	5/3	Fingerling facility					130	21.8		0		0.069	0.069	
290	5/3	Fingerling facility					133	19.4		0		0.077	0.077	BKD ELISA +
291	5/3	Fingerling facility					143	28.0		0		0.054	0.054	
292	5/3	Fingerling facility					134	21.4		0		0.060	0.060	
293	5/3	Fingerling facility					137	27.2		0		0.067	0.067	
294	5/3	Fingerling facility					134	22.8		0		0.060	0.060	

Appendix Table 31.--(continued)

1295	5/3	Fingerling facility					127	16.6		0		0.062	0.062	
1296	5/3	Fingerling facility					134	23.0		0		0.059	0.059	
1297	5/3	Fingerling facility					120	16.3		0		0.063	0.063	
1298	5/3	Fingerling facility					133	22.5		0		0.113	0.113	BKD ELISA +
1299	5/3	Fingerling facility					160	39.0		0		0.058	0.058	
1300	5/3	Fingerling facility					146	30.2	K	193		0.545	0.545	BKD ELISA +
1301	5/3	Fingerling facility					135	21.9		0		0.066	0.066	
1302	5/3	Fingerling facility					131	22.5		0		0.078	0.078	BKD ELISA +
1303	5/3	Fingerling facility					110	12.4		0		0.072	0.072	
1304	5/3	Fingerling facility					130	20.8		0		0.058	0.058	
1305	5/3	Fingerling facility					118	15.8		0		0.071	0.071	
1306	5/3	Fingerling facility	Rapid River	Rapid River	Rapid River Hatch.	3/16-4/7/87	135	22.5	K/SP	0		1.009	1.009	BKD ELISA +
1307	5/4	Fingerling facility					132	23.3		0		0.070	0.070	
1308	5/4	Fingerling facility					129	21.6		0		0.060	0.060	
1309	5/4	Fingerling facility					134	24.4		0		0.072	0.072	
1310	5/4	Fingerling facility					128	20.7		7		0.124	0.124	BKD ELISA +
1311	5/4	Fingerling facility					137	23.9		0		0.065	0.065	
1312	5/4	Fingerling facility					136	23.5		0		0.092	0.092	BKD ELISA +
1313	5/4	Fingerling facility					99	9.6		0		0.077	0.077	BKD ELISA +
1314	5/4	Fingerling facility					106	13.0		0		0.299	0.299	BKD ELISA +
1315	5/4	Fingerling facility					101	10.9		0		0.072	0.072	
1316	5/4	Fingerling facility					127	18.2		0		0.074	0.074	
1317	5/4	Fingerling facility					132	20.9		0		0.071	0.071	
1318	5/4	Fingerling facility					105	10.4		0		0.078	0.078	BKD ELISA +
1319	5/4	Fingerling facility					125	19.1		0		0.077	0.077	BKD ELISA +
1320	5/4	Fingerling facility					123	19.5		117		0.356	0.356	BKD ELISA +
1321	5/4	Fingerling facility					92	8.2		0		0.077	0.077	BKD ELISA +
1322	5/4	Fingerling facility					107	13.2		0		0.060	0.060	
1323	5/4	Fingerling facility					133	23.2		0		0.074	0.074	
1324	5/4	Fingerling facility					113	15.3		0		0.081	0.081	BKD ELISA +
1325	5/4	Fingerling facility					113	13.7		0		0.082	0.082	BKD ELISA +
1326	5/4	Fingerling facility					127	19.8		0		0.081	0.081	BKD ELISA +
1327	5/4	Fingerling facility	Sawtooth	Rapid River	Powell Creek	3/16-3/19/87	119	16.0		0		0.100	0.100	BKD ELISA +
1328	5/4	Fingerling facility					132	21.7		5		0.066	0.066	
1329	5/4	Fingerling facility					124	16.8		0		0.076	0.076	BKD ELISA +
1330	5/4	Fingerling facility					122	18.0		0		0.072	0.072	

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolt

1331	5/4	Fingerling facility					122	16.2		0		0.070	0.070	
1332	5/5	Fingerling facility					125	17.8	K	10		0.435	0.435	BKD ELISA +
1333	5/5	Fingerling facility					128	20.1		0		0.070	0.070	
1334	5/5	Fingerling facility					123	17.8		0		0.087	0.087	BKD ELISA +
1335	5/5	Fingerling facility					102	10.5		0		0.069	0.069	
1336	5/5	Fingerling facility					132	23.2	K	203		0.349	0.349	BKD ELISA +
1337	5/5	Fingerling facility					116	17.7		0		0.078	0.078	BKD ELISA +
1338	5/5	Fingerling facility					122	18.4		0		0.078	0.078	BKD ELISA +
1339	5/5	Fingerling facility					136	24.9		0		0.075	0.075	
1340	5/5	Fingerling facility					134	22.1		0		0.071	0.071	
1341	5/5	Fingerling facility					111	13.0		0		0.076	0.076	BKD ELISA +
1342	5/5	Fingerling facility					107	12.1		0		0.086	0.086	BKD ELISA +
1343	5/5	Fingerling facility					138	26.5		0		0.062	0.062	
1344	5/5	Fingerling facility					136	25.7		0		0.069	0.069	
1345	5/5	Fingerling facility					123	17.9		0		0.073	0.073	
1346	5/5	Fingerling facility					138	27.3		0		0.071	0.071	
1347	5/5	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	136	24.5		0		0.077	0.077	BKD ELISA +
1348	5/5	Fingerling facility					138	24.8	K	23		0.159	0.159	BKD ELISA +
1349	5/5	Fingerling facility					133	21.4		0		0.084	0.084	BKD ELISA +
1330	5/5	Fingerling facility					132	21.9		0		0.073	0.073	
1331	5/5	Fingerling facility					138	25.0		0		0.064	0.064	
1332	5/5	Fingerling facility					127	19.2		0		0.098	0.098	BKD ELISA +
1333	5/5	Fingerling facility					133	23.2		0		0.067	0.067	
1334	5/5	Fingerling facility					129	20.4		0		0.085	0.085	BKD ELISA +
1335	5/5	Fingerling facility					136	23.2		0		0.069	0.069	
1336	5/5	Fingerling facility					126	18.9	K	640		0.640	0.640	BKD ELISA +
1337	5/5	Fingerling facility					143	29.4		0		0.070	0.070	
1338	5/5	Fingerling facility					100	9.9		0		0.085	0.085	BKD ELISA +
1339	5/5	Fingerling facility					98	8.7		0		0.079	0.079	BKD ELISA +
1330	5/5	Fingerling facility					148	30.7	K	75		0.312	0.312	BKD ELISA +
1331	5/5	Fingerling facility					101	10.6		0		0.085	0.085	BKD ELISA +
1332	5/5	Fingerling facility					118	16.0		0		0.087	0.087	BKD ELISA +
1333	5/5	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	132	21.4		0		0.067	0.067	
1334	5/5	Fingerling facility	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	168	48.2		0		0.069	0.069	
1335	5/5	Fingerling facility					110	10.0		0		0.067	0.067	
1336	5/5	Fingerling facility					92	8.4		0		0.081	0.081	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts

1367	5/6	Fingerling facility					138	23.7		0		0.063	0.063	
1368	5/6	Fingerling facility					123	17.5		0		0.070	0.070	
1369	5/6	Fingerling facility					89	6.8		0		0.087	0.087	BKD ELISA +
1370	5/6	Fingerling facility					128	20.6		0		0.112	0.112	BKD ELISA +
1371	5/6	Fingerling facility					137	25.0		176		0.624	0.624	BKD ELISA +
1372	5/6	Fingerling facility					100	9.6		0		0.067	0.067	
1373	5/6	Fingerling facility					105	11.0		0		0.075	0.075	
1374	5/6	Fingerling facility					134	23.6		0		0.063	0.063	
1375	5/6	Fingerling facility					109	20.9		0		0.066	0.066	
1376	5/6	Fingerling facility					93	7.7		0		0.067	0.067	
1377	5/6	Fingerling facility					129	20.1		0		0.082	0.082	BKD ELISA +
1378	5/6	Fingerling facility					135	23.4		0		0.067	0.067	
1379	5/6	Fingerling facility					117	12.9		0		0.065	0.065	
1380	5/6	Fingerling facility					134	23.2		0		0.058	0.058	
1381	5/6	Fingerling facility					121	19.0		0		0.066	0.066	
1382	5/7	Fingerling facility					95	7.8		0		0.060	0.060	
1383	5/7	Fingerling facility					157	33.4		0		0.065	0.065	
1384	5/7	Fingerling facility					133	19.5		7		0.219	0.219	BKD ELISA +
1385	5/7	Fingerling facility					125	18.3		0		0.174	0.174	BKD ELISA +
1386	5/7	Fingerling facility					98	8.8		0		0.068	0.068	
1387	5/7	Fingerling facility					93	7.5		0		0.064	0.064	
1388	5/7	Fingerling facility					110	12.1		0		0.064	0.064	
1389	5/7	Fingerling facility					144	32.0		0		0.076	0.076	BKD ELISA +
1390	5/7	Fingerling facility					134	23.6		6		0.300	0.300	BKD ELISA +
1391	5/7	Fingerling facility					91	7.4		0		0.063	0.063	
1392	5/7	Fingerling facility					99	11.0		0		0.081	0.081	BKD ELISA +
1393	5/7	Fingerling facility					130	19.5		0		0.082	0.082	BKD ELISA +
1394	5/7	Fingerling facility					135	21.4	K	0		0.551	0.551	BKD ELISA +
1395	5/7	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	131	22.2		0		0.063	0.063	
1396	5/7	Fingerling facility					133	21.5		0		0.072	0.072	
1397	5/7	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	128	20.9		27		0.143	0.143	BKD ELISA +
1398	5/7	Fingerling facility					128	19.8		0		0.078	0.078	BKD ELISA +
1399	5/7	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	111	12.0		0		0.078	0.078	BKD ELISA +
1400	5/7	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	133	24.3		0		0.086	0.086	BKD ELISA +
1401	5/7	Fingerling facility					114	13.2		0		0.069	0.069	
1402	5/7	Fingerling facility					108	12.0		0		0.072	0.072	

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolts

1403	5/7	Fingerling facility					119	15.1		0		0.096	0.096	BKD ELISA +
1404	5/7	Fingerling facility					122	15.8		0		0.072	0.072	
1405	5/7	Fingerling facility					129	21.0		0		0.096	0.096	BKD ELISA +
1406	5/7	Fingerling facility					139	25.3		0		0.072	0.072	
1407	5/8	Fingerling facility					118	16.2		0		0.114	0.114	BKD ELISA +
1408	5/8	Fingerling facility					110	13.3		0		0.067	0.067	
1409	5/8	Fingerling facility					105	11.5		0		0.072	0.072	
1410	5/8	Fingerling facility					125	19.4		0		0.060	0.060	
1411	5/8	Fingerling facility					138	25.5		0		0.097	0.097	BKD ELISA +
1412	5/8	Fingerling facility					100	10.9		1		0.068	0.068	
1413	5/8	Fingerling facility					124	19.3		0		0.068	0.068	
1414	5/8	Fingerling facility					115	14.7		0		0.073	0.073	
1415	5/8	Fingerling facility					146	30.5	K	0		0.607	0.607	BKD ELISA +
1416	5/8	Fingerling facility					139	27.2		0		0.192	0.192	BKD ELISA +
1417	5/8	Fingerling facility					138	26.8		112		0.084	0.084	BKD ELISA +
1418	5/8	Fingerling facility					129	20.3		9		0.194	0.194	BKD ELISA +
1419	5/8	Fingerling facility					128	19.4		0		0.057	0.057	
1420	5/8	Fingerling facility					141	29.6		0		0.067	0.067	
1421	5/8	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	113	15.9		0		0.081	0.081	BKD ELISA +
1422	5/8	Fingerling facility					130	22.2		0		0.076	0.076	BKD ELISA +
1423	5/8	Fingerling facility					146	33.4		0		0.072	0.072	
1424	5/8	Fingerling facility					136	24.6	K	0		0.222	0.222	BKD ELISA +
1425	5/8	Fingerling facility					108	12.6		0		0.075	0.075	
1426	5/8	Fingerling facility					139	26.0		0		0.085	0.085	BKD ELISA +
1427	5/8	Fingerling facility					120	16.8		0		0.072	0.072	
1428	5/8	Fingerling facility					141	27.3		0		0.063	0.063	
1429	5/8	Fingerling facility					127	19.9		0		0.099	0.099	BKD ELISA +
1430	5/8	Fingerling facility					125	19.5		5		0.137	0.137	BKD ELISA +
1431	5/9	Fingerling facility					103	10.0		0		0.067	0.067	
1432	5/9	Fingerling facility					108	12.3		0		0.071	0.071	
1433	5/9	Fingerling facility					113	13.4		0		0.078	0.078	BKD ELISA +
1434	5/9	Fingerling facility					141	25.9		0		0.065	0.065	
1435	5/9	Fingerling facility					115	14.9		0		0.074	0.074	
1436	5/9	Fingerling facility					120	16.6		0		0.072	0.072	
1437	5/9	Fingerling facility					132	22.0		3		0.290	0.290	BKD ELISA +
1438	5/9	Fingerling facility					99	9.5		0		0.080	0.080	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolts 19

39	5/9	Fingerling facility					105	11.2		0		0.073	0.073	
40	5/9	Fingerling facility					150	31.7		0		0.094	0.094	BKD ELISA +
41	5/9	Fingerling facility					160	34.2		0		0.077	0.077	BKD ELISA +
42	5/9	Fingerling facility					115	14.7		0		0.080	0.080	BKD ELISA +
43	5/9	Fingerling facility					129	20.9	K	1,235		0.310	0.310	BKD ELISA +
44	5/9	Fingerling facility					134	23.4		0		0.063	0.063	
45	5/9	Fingerling facility					140	26.9		0		0.083	0.083	BKD ELISA +
46	5/9	Fingerling facility					135	23.6		0		0.070	0.070	
47	5/9	Fingerling facility					113	14.7		0		0.078	0.078	BKD ELISA +
48	5/9	Fingerling facility					107	12.6		0		0.079	0.079	BKD ELISA +
49	5/9	Fingerling facility					133	24.7		0		0.070	0.070	
50	5/9	Fingerling facility					137	25.3		0		0.067	0.067	
51	5/9	Fingerling facility					127	19.6		0		0.121	0.121	BKD ELISA +
52	5/10	Fingerling facility					127	19.5		0		0.076	0.076	BKD ELISA +
53	5/10	Fingerling facility					116	15.8		0		0.097	0.097	BKD ELISA +
54	5/10	Fingerling facility					101	11.1		0		0.073	0.073	
55	5/10	Fingerling facility	Sawtooth	Rapid River	Red River	10/7-10/15/87	121	16.0	K	20,000	TNTC	1.036	1.036	BKD ELISA +
56	5/10	Fingerling facility					117	14.4		0		0.080	0.080	BKD ELISA +
57	5/10	Fingerling facility					138	24.8		0		0.073	0.073	
58	5/10	Fingerling facility					162	38.7		0		0.070	0.070	
59	5/10	Fingerling facility					102	10.5		0		0.077	0.077	BKD ELISA +
60	5/10	Fingerling facility					113	10.6		0		0.086	0.086	BKD ELISA +
61	5/10	Fingerling facility					122	17.3		0		0.078	0.078	BKD ELISA +
62	5/10	Fingerling facility					118	15.5		0		0.076	0.076	BKD ELISA +
63	5/10	Fingerling facility					135	21.5		0		0.065	0.065	
64	5/10	Fingerling facility					130	21.0		0		0.062	0.062	
65	5/10	Fingerling facility					122	17.1		0		0.078	0.078	BKD ELISA +
66	5/10	Fingerling facility					137	23.4		0		0.077	0.077	BKD ELISA +
67	5/10	Fingerling facility					136	23.5		0		0.073	0.073	
68	5/10	Fingerling facility					138	26.5		0		0.083	0.083	BKD ELISA +
69	5/10	Fingerling facility					143	28.9		0		0.077	0.077	BKD ELISA +
70	5/10	Fingerling facility					116	14.7		0		0.071	0.071	
71	5/10	Fingerling facility					125	18.1		0		0.132	0.132	BKD ELISA +
72	5/10	Fingerling facility					123	20.5		0		0.097	0.097	BKD ELISA +
73	5/10	Fingerling facility					135	23.2		0		0.073	0.073	
74	5/10	Fingerling facility					120	16.3		0		0.083	0.083	BKD ELISA +

Appendix Table 31.--(continued)

1475	5/10	Fingerling facility					139	29.4	K	445		0.430	0.430	BKD ELISA +
1476	5/10	Fingerling facility					144	30.8	K/SP	4,512	TNTC	0.757	0.757	BKD ELISA +
1477	5/10	Fingerling facility					139	26.7		0		0.070	0.070	
1478	5/10	Fingerling facility					122	16.8		0		0.075	0.075	
1479	5/10	Fingerling facility					112	11.9		0		0.079	0.079	BKD ELISA +
1480	5/10	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	118	15.7		0		0.082	0.082	BKD ELISA +
1481	5/10	Fingerling facility					111	11.1		0		0.079	0.079	BKD ELISA +
1482	5/11	Fingerling facility					131	20.5		0		0.073	0.073	
1483	5/11	Fingerling facility					155	35.2		0		0.076	0.076	BKD ELISA +
1484	5/11	Fingerling facility					119	16.5		50		0.174	0.174	BKD ELISA +
1485	5/11	Fingerling facility					121	17.2		0		0.123	0.123	BKD ELISA +
1486	5/11	Fingerling facility					107	11.6		0		0.080	0.080	BKD ELISA +
1487	5/11	Fingerling facility					105	11.7		0		0.078	0.078	BKD ELISA +
1488	5/11	Fingerling facility					144	27.9		1		0.078	0.078	BKD ELISA +
1489	5/11	Fingerling facility					133	23.2	K	41		0.163	0.163	BKD ELISA +
1490	5/11	Fingerling facility					115	13.8		0		0.082	0.082	BKD ELISA +
1491	5/11	Fingerling facility					100	10.1		0		0.077	0.077	BKD ELISA +
1492	5/11	Fingerling facility					126	21.3		0		0.067	0.067	
1493	5/11	Fingerling facility					102	10.4		0		0.072	0.072	
1494	5/11	Fingerling facility					112	12.9		0		0.085	0.085	BKD ELISA +
1495	5/11	Fingerling facility					103	11.5		0		0.081	0.081	BKD ELISA +
1496	5/11	Fingerling facility					134	25.2		0		0.065	0.065	
1497	5/11	Fingerling facility					97	9.0		0		0.078	0.078	BKD ELISA +
1498	5/11	Fingerling facility					109	11.9		0		0.080	0.080	BKD ELISA +
1499	5/11	Fingerling facility					132	21.0		0		0.083	0.083	BKD ELISA +
1500	5/11	Fingerling facility					126	19.8		0		0.071	0.071	
1501	5/11	Fingerling facility					98	10.3		0		0.085	0.085	BKD ELISA +
1502	5/11	Fingerling facility					121	15.8		0		0.084	0.084	BKD ELISA +
1503	5/11	Fingerling facility					104	11.3		0		0.076	0.076	BKD ELISA +
1504	5/11	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	135	23.5		0		0.244	0.244	BKD ELISA +
1505	5/11	Fingerling facility					116	15.6		9		0.094	0.094	BKD ELISA +
1506	5/11	Fingerling facility					100	10.1		0		0.080	0.080	BKD ELISA +
1507	5/12	Fingerling facility					130	21.6		0		0.254	0.254	BKD ELISA +
1508	5/12	Fingerling facility					122	15.9		0		0.072	0.072	
1509	5/12	Fingerling facility					126	19.9	K	0		0.138	0.138	BKD ELISA +
1510	5/12	Fingerling facility					102	10.8		0		0.078	0.078	BKD ELISA +

Appendix Table 31.--(continued)

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1511	5/12	Fingerling facility					119	15.7		0		0.082	0.082	BKD ELISA +
1512	5/12	Fingerling facility					138	25.2		0		0.078	0.078	BKD ELISA +
1513	5/12	Fingerling facility					115	15.5		0		0.071	0.071	
1514	5/12	Fingerling facility					94	7.6		0		0.080	0.080	BKD ELISA +
1515	5/12	Fingerling facility					119	16.2	K	0		0.164	0.164	BKD ELISA +
1516	5/12	Fingerling facility					95	7.5		0		0.066	0.066	
1517	5/12	Fingerling facility					125	18.4		0		0.076	0.076	BKD ELISA +
1518	5/12	Fingerling facility					117	16.2		0		0.137	0.137	BKD ELISA +
1519	5/12	Fingerling facility					135	25.0	K/SP	6,170	TNTC	0.709	0.709	BKD ELISA +
1520	5/12	Fingerling facility					127	17.7		0		0.073	0.073	
1521	5/12	Fingerling facility					117	15.1		0		0.066	0.066	
1522	5/12	Fingerling facility					130	22.3		2		0.106	0.106	BKD ELISA +
1523	5/12	Fingerling facility					119	15.2		0		0.135	0.135	BKD ELISA +
1524	5/12	Fingerling facility					111	13.7		0		0.075	0.075	
1525	5/12	Fingerling facility					126	18.4	K	19		0.656	0.656	BKD ELISA +
1526	5/12	Fingerling facility					154	35.9		0		0.075	0.075	
1527	5/12	Fingerling facility					114	14.5		0		0.081	0.081	BKD ELISA +
1528	5/12	Fingerling facility					104	10.7		0		0.060	0.060	
1529	5/12	Fingerling facility					133	21.5		0		0.081	0.081	BKD ELISA +
1530	5/12	Fingerling facility					125	18.8		0		0.085	0.085	BKD ELISA +
1531	5/12	Fingerling facility					131	18.2		0		0.083	0.083	BKD ELISA +
1532	5/13	Fingerling facility					142	17.9		0		0.069	0.069	
1533	5/13	Fingerling facility					95	7.8		0		0.064	0.064	
1534	5/13	Fingerling facility					109	12.6		0		0.076	0.076	BKD ELISA +
1535	5/13	Fingerling facility					95	7.6		0		0.082	0.082	BKD ELISA +
1536	5/13	Fingerling facility					134	22.6		0		0.066	0.066	
1537	5/13	Fingerling facility					103	10.4		0		0.073	0.073	
1538	5/13	Fingerling facility					108	11.5		0		0.082	0.082	BKD ELISA +
1539	5/13	Fingerling facility					110	11.3		0		0.074	0.074	
1540	5/13	Fingerling facility					128	18.7		0		0.065	0.065	
1541	5/13	Fingerling facility					144	19.0		0		0.068	0.068	
1542	5/13	Fingerling facility					101	11.7	K	0		0.086	0.086	BKD ELISA +
1543	5/13	Fingerling facility					102	10.3		0		0.072	0.072	
1544	5/13	Fingerling facility					120	19.2		0		0.065	0.065	
1545	5/13	Fingerling facility					124	17.9		0		0.064	0.064	
1546	5/13	Fingerling facility					140	26.8		13		0.096	0.096	BKD ELISA +

Appendix Table 31.--(continued)

1547	5/13	Fingerling facility					113	14.9		0		0.066	0.066	
1548	5/13	Fingerling facility					135	25.1		0		0.080	0.080	BKD ELISA +
1549	5/13	Fingerling facility					136	22.6		0		0.069	0.069	
1550	5/13	Fingerling facility					102	10.6		0		0.064	0.064	
1551	5/13	Fingerling facility					138	25.5	SP	1		0.057	0.057	
1552	5/13	Fingerling facility					99	9.5		0		0.062	0.062	
1553	5/13	Fingerling facility					130	19.6		2		0.097	0.097	BKD ELISA +
1554	5/13	Fingerling facility					137	14.0		0		0.066	0.066	
1555	5/13	Fingerling facility					131	21.5		0		0.065	0.065	
1556	5/13	Fingerling facility					132	24.2		0		0.069	0.069	
1557	5/14	Fingerling facility					118	11.5		0		0.066	0.066	
1558	5/14	Fingerling facility					112	13.3		0		0.072	0.072	
1559	5/14	Fingerling facility					135	21.7	K	30		0.272	0.272	BKD ELISA +
1560	5/14	Fingerling facility					106	11.8		0		0.074	0.074	
1561	5/14	Fingerling facility					105	11.8		0		0.065	0.065	
1562	5/14	Fingerling facility					108	10.9		0		0.069	0.069	
1563	5/14	Fingerling facility					119	15.8		0		0.068	0.068	
1564	5/14	Fingerling facility					118	15.6		56		0.275	0.275	BKD ELISA +
1565	5/14	Fingerling facility					130	21.8		0		0.181	0.181	BKD ELISA +
1566	5/14	Fingerling facility					110	12.7		0		0.067	0.067	
1567	5/14	Fingerling facility					118	12.5		0		0.070	0.070	
1568	5/14	Fingerling facility					109	14.1		0		0.067	0.067	
1569	5/14	Fingerling facility					112	15.3		0		0.066	0.066	
1570	5/14	Fingerling facility					106	12.4		52		0.447	0.447	BKD ELISA +
1571	5/14	Fingerling facility					136	23.8		27		0.204	0.204	BKD ELISA +
1572	5/14	Fingerling facility					111	12.7		0		0.067	0.067	
1573	5/14	Fingerling facility					123	18.5		0		0.064	0.064	
1574	5/14	Fingerling facility					105	10.5		0		0.060	0.060	
1575	5/14	Fingerling facility					134	23.9		36		0.206	0.206	BKD ELISA +
1576	5/14	Fingerling facility					109	12.4		0		0.069	0.069	
1577	5/14	Fingerling facility					128	19.0		9		0.106	0.106	BKD ELISA +
1578	5/14	Fingerling facility					133	22.4		0		0.077	0.077	BKD ELISA +
1579	5/14	Fingerling facility					139	24.5		3		0.246	0.246	BKD ELISA +
1580	5/14	Fingerling facility					145	31.6		0		0.063	0.063	
1581	5/14	Fingerling facility	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	146	26.0		0		0.068	0.068	
1582	5/15	Fingerling facility					121	17.7	K	1,959		0.733	0.733	BKD ELISA +

Appendix Table 31.--(continued)

1583	5/15	Fingerling facility					109	11.4		5		0.103	0.103	BKD ELISA +
1584	5/15	Fingerling facility					121	17.9		0		0.070	0.070	
1585	5/15	Fingerling facility					139	24.7		0		0.075	0.075	
1586	5/15	Fingerling facility					142	27.8		0		0.126	0.126	BKD ELISA +
1587	5/15	Fingerling facility					106	10.9		0		0.071	0.071	
1588	5/15	Fingerling facility					116	14.5		0		0.068	0.068	
1589	5/15	Fingerling facility					137	24.5	K	0		0.092	0.092	BKD ELISA +
1590	5/15	Fingerling facility					106	11.3		0		0.076	0.076	BKD ELISA +
1591	5/15	Fingerling facility					111	11.3		0		0.073	0.073	
1592	5/15	Fingerling facility					128	11.7		0		0.059	0.059	
1593	5/15	Fingerling facility					107	11.6		0		0.068	0.068	
1594	5/15	Fingerling facility					115	14.9		0		0.086	0.086	BKD ELISA +
1595	5/15	Fingerling facility					95	7.7		0		0.075	0.075	
1596	5/15	Fingerling facility					105	11.1		0		0.062	0.062	
1597	5/15	Fingerling facility					100	10.3		0		0.065	0.065	
1598	5/15	Fingerling facility					131	21.1		6		0.113	0.113	BKD ELISA +
1599	5/15	Fingerling facility					126	19.9		10		0.184	0.184	BKD ELISA +
1600	5/15	Fingerling facility					134	24.1		0		0.059	0.059	
1601	5/15	Fingerling facility					125	19.4		0		0.071	0.071	
1602	5/15	Fingerling facility					105	10.8		0		0.073	0.073	
1603	5/15	Fingerling facility					130	22.0		0		0.077	0.077	BKD ELISA +
1604	5/15	Fingerling facility					120	15.6	K	121		0.539	0.539	BKD ELISA +
1605	5/15	Fingerling facility					132	20.6		0		0.316	0.316	BKD ELISA +
1606	5/15	Fingerling facility					104	9.8		0		0.074	0.074	
1607	5/16	Fingerling facility					134	22.6	K	15		0.139	0.139	BKD ELISA +
1608	5/16	Fingerling facility					119	13.2	K	0		0.116	0.116	BKD ELISA +
1609	5/16	Fingerling facility					125	17.6		0		0.074	0.074	
1610	5/16	Fingerling facility					126	20.0		6		0.257	0.257	BKD ELISA +
1611	5/16	Fingerling facility					115	16.2		0		0.079	0.079	BKD ELISA +
1612	5/16	Fingerling facility					105	10.7		0		0.076	0.076	BKD ELISA +
1613	5/16	Fingerling facility					106	11.1		0		0.070	0.070	
1614	5/16	Fingerling facility					87	5.2		0		0.081	0.081	BKD ELISA +
1615	5/16	Fingerling facility					143	27.7		0		0.105	0.105	BKD ELISA +
1616	5/16	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	138	25.9		2		0.176	0.176	BKD ELISA +
1617	5/16	Fingerling facility					127	18.3		0		0.070	0.070	
1618	5/16	Fingerling facility					108	13.6		0		0.074	0.074	

Appendix Table 31.--(continued)

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619	5/16	Fingerling facility					112	13.8		0		0.066	0.066	
620	5/16	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	138	25.0	K	546		0.691	0.691	BKD ELISA +
621	5/16	Fingerling facility					141	26.1		2		0.112	0.112	BKD ELISA +
622	5/16	Fingerling facility					105	10.1		0		0.076	0.076	BKD ELISA +
623	5/16	Fingerling facility					140	25.9		0		0.072	0.072	
624	5/16	Fingerling facility					129	20.7	K	515		0.706	0.706	BKD ELISA +
625	5/16	Fingerling facility					103	10.8		0		0.077	0.077	BKD ELISA +
626	5/16	Fingerling facility					110	12.7		0		0.079	0.079	BKD ELISA +
627	5/16	Fingerling facility					136	23.6	K	200		0.102	0.102	BKD ELISA +
628	5/16	Fingerling facility					131	21.3		0		0.075	0.075	
629	5/16	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	146	28.2	K	60		0.553	0.553	BKD ELISA +
630	5/16	Fingerling facility					119	16.4	K/SP	9,200	TNTC	0.856	0.856	BKD ELISA +
631	5/16	Fingerling facility					105	10.9		0		0.079	0.079	BKD ELISA +
632	5/17	Fingerling facility					116	14.0		0		0.084	0.084	BKD ELISA +
633	5/17	Fingerling facility					111	14.9		0		0.070	0.070	
634	5/17	Fingerling facility					131	20.7	K	0		0.075	0.075	
635	5/17	Fingerling facility					102	10.7		0		0.076	0.076	BKD ELISA +
636	5/17	Fingerling facility					123	15.4		0		0.220	0.220	BKD ELISA +
637	5/17	Fingerling facility					130	20.5		41		0.260	0.260	BKD ELISA +
638	5/17	Fingerling facility					147	29.1		58		0.303	0.303	BKD ELISA +
639	5/17	Fingerling facility					147	32.2		72		0.161	0.161	BKD ELISA +
640	5/17	Fingerling facility					139	24.3		0		0.083	0.083	BKD ELISA +
641	5/17	Fingerling facility					127	18.3		13		0.224	0.224	BKD ELISA +
642	5/17	Fingerling facility					111	12.9		0		0.075	0.075	
643	5/17	Fingerling facility					125	17.3		0		0.079	0.079	BKD ELISA +
644	5/17	Fingerling facility					115	15.0		0		0.067	0.067	
645	5/17	Fingerling facility					113	14.8		0		0.075	0.075	
646	5/17	Fingerling facility					104	10.0		0		0.082	0.082	BKD ELISA +
647	5/17	Fingerling facility					102	9.9		0		0.075	0.075	
648	5/17	Fingerling facility					149	31.2		41		0.306	0.306	BKD ELISA +
649	5/17	Fingerling facility					142	22.9	K	25		0.648	0.648	BKD ELISA +
630	5/17	Fingerling facility					108	13.7		0		0.072	0.072	
631	5/17	Fingerling facility					98	9.5		0		0.094	0.094	BKD ELISA +
632	5/17	Fingerling facility					120	17.8		0		0.066	0.086	
633	5/17	Fingerling facility					131	21.8		136		0.341	0.341	BKD ELISA +
634	5/17	Fingerling facility					137	23.6		262		0.447	0.447	BKD ELISA +

Appendix Table 31.--(continued)

1655	5/17	Fingerling facility					111	12.4		0		0.137	0.137	BKD ELISA +
1656	5/17	Fingerling facility					134	24.4		1		0.217	0.217	BKD ELISA +
1657	5/18	Fingerling facility					125	17.2		0		0.072	0.072	
1658	5/18	Fingerling facility					120	16.4		30		0.303	0.303	BKD ELISA +
1659	5/18	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	131	26.7	K	2,206	TNTC	0.706	0.706	BKD ELISA +
1660	5/18	Fingerling facility					100	10.0		0		0.072	0.072	
1661	5/18	Fingerling facility					131	23.1		540		0.605	0.605	BKD ELISA +
1662	5/18	Fingerling facility					126	19.3		5		0.118	0.118	BKD ELISA +
1663	5/18	Fingerling facility					106	11.9		0		0.075	0.075	
1664	5/18	Fingerling facility					104	11.0		0		0.069	0.069	
1665	5/18	Fingerling facility					117	16.6		0		0.067	0.067	
1666	5/18	Fingerling facility					121	16.4		0		0.074	0.074	
1667	5/18	Fingerling facility					115	15.4		0		0.133	0.133	BKD ELISA +
1668	5/18	Fingerling facility					133	20.9		2		0.098	0.098	BKD ELISA +
1669	5/18	Fingerling facility					143	28.2	K	101		0.227	0.227	BKD ELISA +
1670	5/18	Fingerling facility					138	25.7		0		0.072	0.072	
1671	5/18	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	121	25.2		0		0.068	0.068	
1672	5/18	Fingerling facility					112	23.7		0		0.074	0.074	
1673	5/18	Fingerling facility					130	19.9		197		0.393	0.393	BKD ELISA +
1674	5/18	Fingerling facility					106	13.4		0		0.074	0.074	
1675	5/18	Fingerling facility					117	15.5		0		0.079	0.079	BKD ELISA +
1676	5/18	Fingerling facility					106	11.5		0		0.075	0.075	
1677	5/18	Fingerling facility					106	12.2		0		0.078	0.078	BKD ELISA +
1678	5/18	Fingerling facility					139	26.9		0		0.072	0.072	
1679	5/18	Fingerling facility					117	15.5		0		0.087	0.087	BKD ELISA +
1680	5/18	Fingerling facility					112	13.9		0		0.082	0.082	BKD ELISA +
1681	5/18	Fingerling facility					119	16.3		0		0.074	0.074	
1682	5/19	Fingerling facility					136	25.3	K	1,106		0.487	0.487	BKD ELISA +
1683	5/19	Fingerling facility	Sawtooth	Rapid River	Powell Creek	3/16-3/19/87	117	14.4		0		0.166	0.166	BKD ELISA +
1684	5/19	Fingerling facility					117	14.7		0		0.077	0.077	BKD ELISA +
1685	5/19	Fingerling facility					137	25.2		0		0.066	0.066	
1686	5/19	Fingerling facility					145	28.9		0		0.080	0.080	BKD ELISA +
1687	5/19	Fingerling facility					124	19.2		0		0.063	0.063	
1688	5/19	Fingerling facility					106	10.6		0		0.077	0.077	BKD ELISA +
1689	5/19	Fingerling facility					115	14.6		0		0.062	0.062	
1690	5/19	Fingerling facility					109	12.6		0		0.077	0.077	BKD ELISA +

Appendix Table 31.--(continued)

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1691	5/19	Fingerling facility					143	27.3		0		0.065	0.065	
1692	5/19	Fingerling facility					122	16.2		0		0.070	0.070	
1693	5/19	Fingerling facility					136	24.1		2		0.082	0.082	BKD ELISA +
1694	5/19	Fingerling facility					133	22.2		9		0.070	0.070	
1695	5/19	Fingerling facility					108	12.4		0		0.079	0.079	BKD ELISA +
1696	5/19	Fingerling facility					133	22.0		330		0.451	0.451	BKD ELISA +
1697	5/19	Fingerling facility					137	25.4	K	537		0.491	0.491	BKD ELISA +
1698	5/19	Fingerling facility					118	14.8		0		0.090	0.090	BKD ELISA +
1699	5/19	Fingerling facility					112	14.0		0		0.077	0.077	BKD ELISA +
1700	5/19	Fingerling facility					135	22.1	K	262		0.556	0.556	BKD ELISA +
1701	5/19	Fingerling facility					108	12.9		0		0.074	0.074	
1702	5/19	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	127	20.3		0		0.080	0.080	BKD ELISA +
1703	5/19	Fingerling facility					146	31.1	K	362		0.461	0.461	BKD ELISA +
1704	5/19	Fingerling facility					105	10.1		0		0.079	0.079	BKD ELISA +
1705	5/19	Fingerling facility					98	9.5		0		0.074	0.074	
1706	5/19	Fingerling facility					137	24.2		0		0.079	0.079	BKD ELISA +
1707	5/20	Fingerling facility					140	29.3		2,784	TNTC	0.766	0.766	BKD ELISA +
1708	5/20	Fingerling facility					148	31.0	K	460		0.470	0.470	BKD ELISA +
1709	5/20	Fingerling facility					150	30.5	K	52		0.281	0.281	BKD ELISA +
1710	5/20	Fingerling facility					117	15.6		0		0.067	0.067	
1711	5/20	Fingerling facility					112	13.1		0		0.081	0.081	BKD ELISA +
1712	5/20	Fingerling facility					107	11.4		0		0.066	0.066	
1713	5/20	Fingerling facility					136	23.9		212		0.229	0.229	BKD ELISA +
1714	5/20	Fingerling facility					102	10.6		0		0.077	0.077	BKD ELISA +
1715	5/20	Fingerling facility					120	19.8		0		0.071	0.071	
1716	5/20	Fingerling facility					120	18.6		0		0.067	0.069	
1717	5/20	Fingerling facility					134	25.3		7		0.099	0.102	BKD ELISA +
1718	5/20	Fingerling facility					133	20.8		127		0.257	0.265	BKD ELISA +
1719	5/20	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	129	21.6	K	55		0.155	0.160	BKD ELISA +
1720	5/20	Fingerling facility					123	18.6		16		0.175	0.180	BKD ELISA +
1721	5/20	Fingerling facility					137	25.5		429		0.413	0.425	BKD ELISA +
1722	5/20	Fingerling facility					144	29.6		34		0.131	0.135	BKD ELISA +
1723	5/20	Fingerling facility					111	13.0		0		0.069	0.071	
1724	5/20	Fingerling facility					137	25.0		10		0.119	0.123	BKD ELISA +
1725	5/20	Fingerling facility					113	14.3		0		0.062	0.064	
1726	5/20	Fingerling facility					119	17.3		0		0.064	0.066	

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts

1727	5/20	Fingerling facility					115	14.5			0		0.071	0.073	
1728	5/20	Fingerling facility					137	22.4			166		0.315	0.324	BKD ELISA +
1729	5/20	Fingerling facility					113	14.4			0		0.060	0.062	
1730	5/20	Fingerling facility					118	16.8			0		0.068	0.070	
1731	5/20	Fingerling facility					107	11.9			0		0.077	0.079	BKD ELISA +
1732	5/21	Fingerling facility					118	15.5			0		0.064	0.066	
1733	5/21	Fingerling facility					124	18.0			0		0.063	0.065	
1734	5/21	Fingerling facility					136	23.6			0		0.063	0.065	
1735	5/21	Fingerling facility					108	12.9			0		0.074	0.076	BKD ELISA +
1736	5/21	Fingerling facility					113	13.1			0		0.067	0.069	
1737	5/21	Fingerling facility					97	8.8			0		0.067	0.069	
1738	5/21	Fingerling facility					105	12.3			0		0.068	0.070	
1739	5/21	Fingerling facility					104	11.8			0		0.075	0.077	BKD ELISA +
1740	5/21	Fingerling facility					127	18.4			44		0.225	0.232	BKD ELISA +
1741	5/21	Fingerling facility					120	18.0			0		0.069	0.071	
1742	5/21	Fingerling facility					140	26.7		K	632		0.308	0.317	BKD ELISA +
1743	5/21	Fingerling facility					103	12.2			0		0.080	0.082	BKD ELISA +
1744	5/21	Fingerling facility					130	20.6			0		0.087	0.090	BKD ELISA +
1745	5/21	Fingerling facility					115	16.0			0		0.073	0.075	
1746	5/21	Fingerling facility					138	25.0			0		0.080	0.082	BKD ELISA +
1747	5/21	Fingerling facility					112	15.4			0		0.071	0.073	
1748	5/21	Fingerling facility					135	24.5		K	712		0.570	0.587	BKD ELISA +
1749	5/21	Fingerling facility					112	14.8			0		0.063	0.065	
1750	5/21	Fingerling facility					110	13.6			0		0.065	0.067	
1751	5/21	Fingerling facility					121	18.7			0		0.070	0.072	
1752	5/21	Fingerling facility					107	13.2			0		0.067	0.069	
1753	5/21	Fingerling facility					106	13.1			0		0.055	0.057	
1754	5/21	Fingerling facility					135	23.7		K/SP	3,196	TNTC	0.706	0.727	BKD ELISA +
1755	5/21	Fingerling facility					103	11.8			0		0.067	0.069	
1756	5/21	Fingerling facility					103	11.1			0		0.065	0.067	
1757	5/22	Fingerling facility					112	12.8			0		0.069	0.071	
1758	5/22	Fingerling facility					118	15.7			0		0.070	0.072	
1759	5/22	Fingerling facility					116	16.3			0		0.073	0.075	
1760	5/22	Fingerling facility					102	10.1			0		0.069	0.071	
1761	5/22	Fingerling facility					107	11.4			0		0.075	0.077	BKD ELISA +
1762	5/22	Fingerling facility					110	12.7			0		0.072	0.074	

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smolts

1753	5/22	Fingerling facility					141	27.3	K	1,012		0.635	0.654	BKD ELISA +
1754	5/22	Fingerling facility					118	17.2		0		0.074	0.074	
1755	5/22	Fingerling facility					125	15.2		0		0.073	0.073	
1756	5/22	Fingerling facility					115	15.2		0		0.080	0.080	BKD ELISA +
1757	5/22	Fingerling facility					110	12.6		0		0.081	0.081	BKD ELISA +
1758	5/22	Fingerling facility					120	17.1		0		0.077	0.077	BKD ELISA +
1759	5/22	Fingerling facility					136	25.0		0		0.079	0.079	BKD ELISA +
1770	5/22	Fingerling facility					138	24.5		51		0.137	0.137	BKD ELISA +
1771	5/22	Fingerling facility					135	24.5		0		0.067	0.067	
1772	5/22	Fingerling facility					118	15.8		0		0.075	0.075	
1773	5/22	Fingerling facility					105	10.3		0		0.075	0.075	
1774	5/22	Fingerling facility					107	12.6		0		0.082	0.082	BKD ELISA +
1775	5/22	Fingerling facility					108	13.1		0		0.078	0.078	BKD ELISA +
1776	5/22	Fingerling facility					134	22.5		3		0.101	0.101	BKD ELISA +
1777	5/22	Fingerling facility					109	12.2		0		0.093	0.093	BKD ELISA +
1778	5/22	Fingerling facility					118	17.9		0		0.109	0.109	BKD ELISA +
1779	5/22	Fingerling facility					118	15.4		0		0.079	0.079	BKD ELISA +
1780	5/22	Fingerling facility					106	12.2		0		0.077	0.077	BKD ELISA +
1781	5/22	Fingerling facility					118	15.4		0		0.075	0.075	
1782	5/23	Fingerling facility					122	18.1		0		0.087	0.087	BKD ELISA +
1783	5/23	Fingerling facility					109	12.0		0		0.081	0.081	BKD ELISA +
1784	5/23	Fingerling facility					142	25.4		41		0.103	0.103	BKD ELISA +
1785	5/23	Fingerling facility					131	19.5	K/SP	4,156	TNTC	0.674	0.674	BKD ELISA +
1786	5/23	Fingerling facility					150	31.0		0		0.070	0.070	
1787	5/23	Fingerling facility					109	13.2		0		0.077	0.077	BKD ELISA +
1788	5/23	Fingerling facility					120	16.7	K	904		0.466	0.466	BKD ELISA +
1789	5/23	Fingerling facility					114	14.2		0		0.082	0.082	BKD ELISA +
1790	5/23	Fingerling facility					113	13.9		0		0.083	0.083	BKD ELISA +
1791	5/23	Fingerling facility					144	27.0	K	80		0.469	0.469	BKD ELISA +
1792	5/23	Fingerling facility					128	19.8	K	549		0.582	0.582	BKD ELISA +
1793	5/23	Fingerling facility					110	13.5		0		0.077	0.077	BKD ELISA +
1794	5/23	Fingerling facility					117	19.5		0		0.234	0.234	BKD ELISA +
1795	5/23	Fingerling facility					118	19.1		0		0.072	0.072	
1796	5/23	Fingerling facility					110	13.9		0		0.075	0.075	
1797	5/23	Fingerling facility					127	18.6	K	203		0.582	0.582	BKD ELISA +
1798	5/23	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	142	28.5	K	777		0.477	0.477	BKD ELISA +

Appendix Table 31.--(continued)

799	5/23	Fingerling facility					127	20.8	K	3,372	TNTC	0.780	0.780	BKD ELISA +
800	5/23	Fingerling facility					134	23.0	K	694		0.595	0.595	BKD ELISA +
801	5/23	Fingerling facility					130	20.8	K	3,708	TNTC	0.782	0.782	BKD ELISA +
802	5/23	Fingerling facility					100	11.0		0		0.083	0.083	BKD ELISA +
803	5/23	Fingerling facility					102	11.0		0		0.081	0.081	BKD ELISA +
804	5/23	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	143	28.5		2		0.099	0.099	BKD ELISA +
805	5/23	Fingerling facility					105	11.3		0		0.072	0.072	
806	5/23	Fingerling facility					116	16.0		0		0.098	0.098	BKD ELISA +
807	5/24	Fingerling facility					140	28.7	K	859		0.626	0.626	BKD ELISA +
808	5/24	Fingerling facility					114	12.7		0		0.078	0.078	BKD ELISA +
809	5/24	Fingerling facility					104	11.0		0		0.072	0.072	
810	5/24	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	140	25.8	K	1,283		0.424	0.424	BKD ELISA +
811	5/24	Fingerling facility					134	20.6		0		0.096	0.096	BKD ELISA +
812	5/24	Fingerling facility					110	12.0		1		0.083	0.083	BKD ELISA +
813	5/24	Fingerling facility					120	16.4		0		0.070	0.070	
814	5/24	Fingerling facility					105	11.8		0		0.081	0.081	BKD ELISA +
815	5/24	Fingerling facility					114	14.8		0		0.081	0.081	BKD ELISA +
816	5/24	Fingerling facility					111	10.4		0		0.079	0.079	BKD ELISA +
817	5/24	Fingerling facility					116	16.6		0		0.082	0.082	BKD ELISA +
818	5/24	Fingerling facility					112	13.8		0		0.081	0.081	BKD ELISA +
819	5/24	Fingerling facility					108	13.0		0		0.085	0.085	BKD ELISA +
820	5/24	Fingerling facility					139	26.2	K	50,500	TNTC	0.759	0.759	BKD ELISA +
821	5/24	Fingerling facility					147	27.9		13		0.149	0.149	BKD ELISA +
822	5/24	Fingerling facility					157	35.9		0		0.079	0.079	BKD ELISA +
823	5/24	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	133	22.4		0		0.085	0.085	BKD ELISA +
824	5/24	Fingerling facility					157	35.2		9		0.087	0.087	BKD ELISA +
825	5/24	Fingerling facility					125	19.7	K	105		0.242	0.242	BKD ELISA +
826	5/24	Fingerling facility					122	17.9		0		0.085	0.085	BKD ELISA +
827	5/24	Fingerling facility					110	13.8		0		0.085	0.085	BKD ELISA +
828	5/24	Fingerling facility					114	13.3		0		0.092	0.092	BKD ELISA +
829	5/24	Fingerling facility					121	16.7		0		0.077	0.077	BKD ELISA +
830	5/24	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	141	25.8	K	614		0.471	0.471	BKD ELISA +
831	5/24	Fingerling facility					136	21.7	K	463		0.507	0.507	BKD ELISA +
832	5/25	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	145	28.3		2,584	TNTC	0.817	0.817	BKD ELISA +
833	5/25	Fingerling facility					112	14.0		0		0.074	0.074	
834	5/25	Fingerling facility					104	10.4		0		0.083	0.083	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts 1987

Lower Granite Dam SCS Smo

1835	5/25	Fingerling facility					106	10.8		0		0.081	0.081	BKD ELISA +
1836	5/25	Fingerling facility					149	27.5	K	35,300	TNTC	0.978	0.978	BKD ELISA +
1837	5/25	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	129	19.5		2,347		0.752	0.752	BKD ELISA +
1838	5/25	Fingerling facility					124	18.2		0		0.088	0.088	BKD ELISA +
1839	5/25	Fingerling facility					110	13.7		0		0.086	0.086	BKD ELISA +
1840	5/25	Fingerling facility					102	10.4		0		0.077	0.077	BKD ELISA +
1841	5/25	Fingerling facility					119	15.4		0		0.075	0.075	
1842	5/25	Fingerling facility					109	13.0		0		0.080	0.080	BKD ELISA +
1843	5/25	Fingerling facility					130	21.4	K	1,106		0.655	0.655	BKD ELISA +
1844	5/25	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	137	27.0		0		0.083	0.083	BKD ELISA +
1845	5/25	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	119	16.5	K	824		0.469	0.469	BKD ELISA +
1846	5/25	Fingerling facility					122	19.0		0		0.078	0.078	BKD ELISA +
1847	5/25	Fingerling facility					104	10.9		0		0.081	0.081	BKD ELISA +
1848	5/25	Fingerling facility					112	12.1		0		0.075	0.075	
1849	5/25	Fingerling facility					126	19.7		0		0.075	0.075	
1850	5/25	Fingerling facility					105	11.8		0		0.087	0.087	BKD ELISA +
1851	5/25	Fingerling facility					112	14.5		0		0.084	0.084	BKD ELISA +
1852	5/25	Fingerling facility					113	14.3		0		0.079	0.079	BKD ELISA +
1853	5/25	Fingerling facility					117	16.7		10		0.092	0.092	BKD ELISA +
1854	5/25	Fingerling facility					109	13.0		0		0.081	0.081	BKD ELISA +
1855	5/25	Fingerling facility					142	27.4	K	8,324	TNTC	0.799	0.799	BKD ELISA +
1856	5/25	Fingerling facility					119	18.5		0		0.088	0.088	BKD ELISA +
1857	5/26	Fingerling facility					144	28.2		101		0.175	0.175	BKD ELISA +
1858	5/26	Fingerling facility					118	16.6		0		0.082	0.082	BKD ELISA +
1859	5/26	Fingerling facility					121	17.6		0		0.081	0.081	BKD ELISA +
1860	5/26	Fingerling facility					149	32.8	K	7,080	TNTC	0.620	0.620	BKD ELISA +
1861	5/26	Fingerling facility					108	14.4	K/SP	18,350	TNTC	0.855	0.855	BKD ELISA +
1862	5/26	Fingerling facility					118	15.8		0		0.071	0.071	
1863	5/26	Fingerling facility					136	23.4		315		0.675	0.675	BKD ELISA +
1864	5/26	Fingerling facility					135	24.1	K	28,800	TNTC	0.798	0.798	BKD ELISA +
1865	5/26	Fingerling facility					114	14.8		0		0.070	0.070	
1866	5/26	Fingerling facility					135	22.4	K	2,740	TNTC	0.665	0.665	BKD ELISA +
1867	5/26	Fingerling facility					123	17.3	K	3,436	TNTC	0.661	0.661	BKD ELISA +
1868	5/26	Fingerling facility					135	21.9		0		0.067	0.067	
1869	5/26	Fingerling facility					134	21.2		9		0.096	0.096	BKD ELISA +
1870	5/26	Fingerling facility					140	25.8	K	416		0.564	0.564	BKD ELISA +

Appendix Table 31.--(continued)

Lower Granite Dam SCS Smolts

1871	5/26	Fingerling facility					100	10.4		0		0.073	0.073	
1872	5/26	Fingerling facility					119	17.2		0		0.065	0.065	
1873	5/26	Fingerling facility	Sawtooth	Rapid River	Red River	3/16-3/19/87	116	16.3	K/SP	32,400	TNTC	0.840	0.840	BKD ELISA +
1874	5/26	Fingerling facility					136	23.7		0		0.062	0.082	BKD ELISA +
1875	5/26	Fingerling facility					122	17.4		0		0.076	0.076	BKD ELISA +
1876	5/26	Fingerling facility					102	11.3		631		0.574	0.574	BKD ELISA +
1877	5/26	Fingerling facility					143	25.0	K	30,000	TNTC	0.781	0.781	BKD ELISA +
1878	5/26	Fingerling facility					125	17.7	K	1,610		0.643	0.643	BKD ELISA +
1879	5/26	Fingerling facility					131	22.7		0		0.075	0.075	
1880	5/26	Fingerling facility					120	14.6		0		0.067	0.067	
1881	5/26	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	138	23.8		1		0.119	0.119	BKD ELISA +
1882	5/27	Fingerling facility					135	22.9		5		0.079	0.079	BKD ELISA +
1883	5/27	Fingerling facility					142	27.2	K	10,260	TNTC	0.905	0.905	BKD ELISA +
1884	5/27	Fingerling facility					115	15.7		0		0.067	0.067	
1885	5/27	Fingerling facility					106	12.2		0		0.073	0.073	
1886	5/27	Fingerling facility					107	11.7		0		0.081	0.081	BKD ELISA +
1887	5/27	Fingerling facility					136	23.4	K	3,200	TNTC	0.660	0.660	BKD ELISA +
1888	5/27	Fingerling facility					111	13.4		0		0.085	0.085	BKD ELISA +
1889	5/27	Fingerling facility					113	14.1		0		0.076	0.076	BKD ELISA +
1890	5/27	Fingerling facility					131	19.1		0		0.076	0.076	BKD ELISA +
1891	5/27	Fingerling facility					131	22.0		0		0.094	0.094	BKD ELISA +
1892	5/27	Fingerling facility					115	13.9		0		0.068	0.068	
1893	5/27	Fingerling facility					116	15.0		0		0.073	0.073	
1894	5/27	Fingerling facility					113	14.5		0		0.075	0.075	
1895	5/27	Fingerling facility					123	17.6		61		0.348	0.348	BKD ELISA +
1896	5/27	Fingerling facility					122	17.3		0		0.066	0.066	
1897	5/27	Fingerling facility					115	14.5		0		0.078	0.078	BKD ELISA +
1898	5/27	Fingerling facility					117	14.8		0		0.070	0.070	
1899	5/27	Fingerling facility					146	32.2		0		0.095	0.095	BKD ELISA +
1900	5/27	Fingerling facility					102	9.9		0		0.072	0.072	
1901	5/27	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	156	30.6	K	693		0.511	0.511	BKD ELISA +
1902	5/27	Fingerling facility					129	22.2		0		0.071	0.071	
1903	5/27	Fingerling facility					132	20.5		32		0.098	0.098	BKD ELISA +
1904	5/27	Fingerling facility	Sawtooth	Sawtooth	Sawtooth Hatch.	3/11-3/13/87	127	20.1	K/SP/L	50,000	TNTC	0.890	0.890	BKD ELISA +
1905	5/27	Fingerling facility					115	14.7		0		0.068	0.068	
1906	5/27	Fingerling facility					103	10.0		0		0.086	0.086	BKD ELISA +

Appendix Table 31.--(continued)

1907	5/28	Fingerling facility	Lookingglass	Imnaha	Lookingglass Hatch.	4/20/87	188	57.8		0		0.072	0.072	
1908	5/28	Fingerling facility					150	33.6	K	817		0.514	0.514	BKD ELISA +
1909	5/28	Fingerling facility					114	14.3		0		0.094	0.094	BKD ELISA +
1910	5/28	Fingerling facility					138	22.5	K/SP	823		0.415	0.415	BKD ELISA +
1911	5/28	Fingerling facility					128	19.6		0		0.074	0.074	
1912	5/28	Fingerling facility					138	24.8	K	1,436		0.635	0.635	BKD ELISA +
1913	5/28	Fingerling facility					142	28.9	K	172,400	TNTC	0.988	0.988	BKD ELISA +
1914	5/28	Fingerling facility					149	27.4	K/SP	1,120		0.638	0.638	BKD ELISA +
1915	5/28	Fingerling facility					123	17.5		0		0.116	0.116	BKD ELISA +
1916	5/28	Fingerling facility					138	24.4	K/SP	30,000	TNTC	1.023	1.023	BKD ELISA +
1917	5/28	Fingerling facility					130	22.5		0		0.090	0.090	BKD ELISA +
1918	5/28	Fingerling facility					106	13.1		0		0.072	0.072	
1919	5/28	Fingerling facility					130	19.4	K	32,100	TNTC	0.981	0.981	BKD ELISA +
1920	5/28	Fingerling facility					112	14.1		0		0.071	0.071	
1921	5/28	Fingerling facility					111	13.7		0		0.071	0.071	
1922	5/28	Fingerling facility					134	22.9	K/SP	4,770	TNTC	0.833	0.833	BKD ELISA +
1923	5/28	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	138	20.0		28		0.469	0.469	BKD ELISA +
1924	5/28	Fingerling facility					120	17.8		0		0.075	0.075	
1925	5/28	Fingerling facility					115	14.8		0		0.076	0.076	BKD ELISA +
1926	5/28	Fingerling facility					116	16.2		0		0.070	0.070	
1927	5/28	Fingerling facility					105	11.1		0		0.090	0.090	BKD ELISA +
1928	5/28	Fingerling facility					114	13.5		0		0.076	0.076	BKD ELISA +
1929	5/28	Fingerling facility					120	17.8		0		0.067	0.067	
1930	5/28	Fingerling facility					133	20.9	K	26		0.472	0.472	BKD ELISA +
1931	5/28	Fingerling facility					124	18.2	K/SP/L	80,000	TNTC	1.143	1.143	BKD ELISA +
1932	5/29	Fingerling facility					120	17.2		0		0.118	0.118	BKD ELISA +
1933	5/29	Fingerling facility					134	22.6	K	56,000	TNTC	0.958	0.958	BKD ELISA +
1934	5/29	Fingerling facility					134	22.2	K/SP	214		0.510	0.510	BKD ELISA +
1935	5/29	Fingerling facility					115	16.5		0		0.091	0.091	BKD ELISA +
1936	5/29	Fingerling facility					152	34.8	K	258		0.289	0.289	BKD ELISA +
1937	5/29	Fingerling facility					117	16.5		0		0.077	0.077	BKD ELISA +
1938	5/29	Fingerling facility					111	12.6		0		0.071	0.071	
1939	5/29	Fingerling facility					126	18.8		12		0.101	0.101	BKD ELISA +
1940	5/29	Fingerling facility					109	14.0		0		0.088	0.088	BKD ELISA +
1941	5/29	Fingerling facility					115	15.2		17		0.075	0.075	
1942	5/29	Fingerling facility					128	19.3		0		0.073	0.073	

Appendix Table 31.--(continued)

1943	5/29	Fingerling facility					122	18.2		2		0.080	0.080	BKD ELISA +
1944	5/29	Fingerling facility					117	14.2		0		0.074	0.074	
1945	5/29	Fingerling facility					107	11.8		0		0.080	0.080	BKD ELISA +
1946	5/29	Fingerling facility					127	21.6		0		0.072	0.072	
1947	5/29	Fingerling facility					122	17.0		0		0.077	0.077	BKD ELISA +
1948	5/29	Fingerling facility					103	10.2		0		0.076	0.076	BKD ELISA +
1949	5/29	Fingerling facility	McCall	South Fork	S.F. Salmon River	3/30-4/2/87	136	22.8	K	8,140	TNTC	0.806	0.806	BKD ELISA +
1950	5/29	Fingerling facility					120	18.0	K	6,180	TNTC	0.788	0.788	BKD ELISA +
1951	5/29	Fingerling facility					104	10.2		0		0.076	0.076	BKD ELISA +
1952	5/29	Fingerling facility					129	18.4	K	13,820	TNTC	0.710	0.710	BKD ELISA +
1953	5/29	Fingerling facility					110	12.5		0		0.085	0.085	BKD ELISA +
1954	5/29	Fingerling facility					136	22.5	K/SP	58,800	TNTC	0.825	0.825	BKD ELISA +
1955	5/29	Fingerling facility					116	16.2		0		0.072	0.072	
1956	5/29	Fingerling facility					116	15.5		0		0.080	0.080	BKD ELISA +