

**EVALUATION OF TRANSPORTATION
OF JUVENILE SALMONIDS AND RELATED
RESEARCH ON THE COLUMBIA AND
SNAKE RIVERS, 1988**

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INTRODUCTION

From 1968 to 1980, the National Marine Fisheries Service (NMFS) conducted numerous smolt transportation studies at Snake River and Columbia River dams operated by the U. S. Army Corps of Engineers (COE) (Park 1985). Results of these studies were very encouraging for fall chinook salmon (Oncorhynchus tshawytscha) and steelhead (O. mykiss) 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 environmental conditions, as a management option to enhance survival of downstream migrating juvenile salmonids.

In 1983, NMFS 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). Spring chinook salmon smolts were marked in 1983, 1984, and 1985 and steelhead smolts were marked in 1984 and 1985 for this purpose. The 1985 smolt marking operations were conducted by the Fish Passage Center (formerly the Water Budget Center) and, therefore, were not included in any of the NMFS annual reports. Recent returns of adult spring/summer chinook salmon and steelhead from these marking efforts indicate that survival of transported smolts improved considerably compared to returns from the 1976-80 study years (Matthews et al. 1987). 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/marketing 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. The primary goal of the

study is to re-evaluate transportation of smolts around dams utilizing state-of-the-art collection/transport and handling/marketing techniques. NMFS had intended to mark smolts for 3 consecutive years at both dams. However, due to persistent drought conditions, we marked only barge transport index groups at Lower Granite Dam in 1987; no marking occurred at that dam in 1988. At McNary Dam, we marked test and control groups of both races of salmon in 1987 and 1988, completing marking for the 3-year study.

In 1988, the NMFS under contract to the COE continued to evaluate the effects of collection and transportation on juvenile salmonids from dams on the Columbia and Snake Rivers. Our efforts this year included the following main objectives: 1) mark transport and control groups of spring/summer chinook salmon and steelhead 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, 2) continue the recovery of adult salmonids tagged as juveniles at Lower Granite and McNary Dams for transport research and index purposes, and 3) initiate efforts to evaluate transportation of wild spring chinook salmon utilizing passive integrated transponder (PIT) tags. This annual report should be considered transitional, summarizing the work conducted and data gathered by NMFS under this contract from 1 January to 31 July 1988. Activities conducted under Objective 3 will be included in the annual activities report for 1989.

METHODS

Smolts at both dams were 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 is based on comparative rates of returns of adults and associated transport benefit ratios (TBR) from these marking efforts (see Matthews et al. 1987, for details on juvenile marking and evaluation procedures).

Marking and Delayed Mortality of Juvenile Salmonids

Lower Granite Dam

Severe drought conditions which began in 1987 persisted in 1988 in the Snake River Basin. NMFS marked a transport index group only (no controls) at Lower Granite Dam in 1987; however, no marking occurred in 1988. Therefore, we have completed only one year of smolt marking (1986) for the 3-year study at Lower Granite Dam.

McNary Dam

In 1988, NMFS completed the final year of marking for the current 3-year transport evaluation from McNary Dam. Naturally migrating spring/summer chinook salmon and subyearling fall chinook salmon were marked with adipose fin clips, freeze brands, and CWTs. These fish were either transported by barge to below Bonneville Dam or released as controls below McNary Dam. Marking of spring/summer chinook salmon began on 8 April and continued through 2 June; fall chinook salmon were marked from 13 June through 21 July. Totals of 50,029 transport and 75,036 control spring/summer chinook salmon smolts were marked in release lots of approximately 5,000 and 7,500 fish, respectively. In addition, 60,013 transport and 60,010 control fall chinook salmon juveniles were marked in release lots of approximately 10,000 fish (Appendix Tables 1 and 2).

All marking, transport, and release operations went very smoothly with the exception of one incident. On 8 July, a lack of water flow in a fish transport barge resulted in a mortality due to suffocation of a large number of fish. Included on this barge were 1,859 marked fall chinook salmon (CWT 23-23-03). Although no mortality was noted in the compartment containing these fish, it is not known to what extent, if any, they may have been detrimentally affected during the incident.

Throughout the marking periods, samples of both races of salmon were held for 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 of juveniles. Adult collection facilities (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 efficiencies will be determined from recoveries for marked adult 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. Sport fisheries and natal spawning areas will also be surveyed to provide return 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.

RESULTS AND DISCUSSION

48-Hour Delayed Mortality and CWT Retention

Details of the post-marking delayed mortality and CWT retention for spring/summer and fall chinook salmon marked at McNary Dam in 1988 are provided in Appendix Tables 3 and 4, respectively. Delayed mortality was virtually nil, averaging 0.4% for both races of salmon for the entire season. This level of mortality is nearly identical to the level reported for 1987 (Matthews et al. 1988) and substantially lower than reported for 1986 (Matthews et al. 1987). These data continue to indicate that incorporation of the pre-anesthesia handling/marketing technique greatly enhances post-handling/marketing survival of juvenile salmonids. The CWT loss was also virtually nil,

averaging 0.1 and 0.7% for spring/summer and fall chinook salmon, respectively. Consequently, we did not adjust release numbers to reflect short-term tag loss this year at McNary Dam. The new tagging equipment recently purchased and installed by the COE is obviously very effective as reflected by the insignificant tag loss measured at McNary Dam in 1988.

Adult Returns

Lower Granite Dam Studies

Table 1 summarizes and Appendix Tables 5.0 through 8.0 list total-to-date adult returns of spring/summer chinook salmon tagged as juveniles at Lower Granite Dam from 1985 through 1987. In-river control releases were made in 1986 but not in 1985 or 1987.

Returns from the 1985 barge transport index releases are complete to Lower Granite Dam only. Although the total observed return to the dam is low (0.22%), it is six times higher than the average observed returns from all transported groups from 1976 to 1980 (Park 1985) and is similar to returns from the 1983 (0.28%) and 1984 (0.16%) transport index releases (Matthews et al. 1988).

Returns of transport and in-river control groups released in 1986 are incomplete (1- and 2-ocean age observed returns are complete to Lower Granite Dam, but 2-ocean age returns to other recovery areas are incomplete) with 3-ocean age fish yet to be recovered. To date at Lower Granite Dam, we have observed 48 adults (0.11% of the release) that were transported as smolts from Lower Granite Dam to below Bonneville Dam and 29 adults (0.06% of the release) that were released as smolts below Little Goose Dam.

Jack returns from the 1987 barge transport index releases are complete to Lower Granite Dam. The observed return rate of 0.02% was identical to 1-ocean age return rates from the 1985 and 1986 transport releases.

Table 1.--Preliminary summary of adult spring/summer chinook salmon marked at Lower Granite Dam from 1985 to 1987 (recoveries through July 1988).

Groups	Number released	Ocean-age	Observed adult returns						Hatcheries	Stream surveys	Total	
			Ocean fishery	Bonneville Dam	Indian fishery	River fishery	Lower Granite Dam				N	%
1985												
Transport	45,420	1-ocean	0	2	0	0	11	0.02	3	1	17	0.04
		2-ocean	0	17	2	2	52	0.11	23	3	99	0.22
		3-ocean	0	9	1	0	38	0.09	1	0	49	0.11
		Total	0	28	3	2	101	0.22	27	4	165	0.36
1986												
Transport	45,004	1-ocean	1	0	0	0	7	0.02	1	0	9	0.02
		2-ocean	0	7	2	1	41	0.09	0	0	51	0.11
		Total	1	7	2	1	48	0.11	1	0	60	0.13
1986												
Control*	45,035	1-ocean	0	0	0	0	2	0.00	2	0	4	0.01
		2-ocean	0	1	0	0	27	0.06	0	0	28	0.06
		Total	0	1	0	0	29	0.06	2	0	32	0.07
1987												
Transport	50,207	1-ocean	0	0	0	0	12	0.02	0	0	12	0.02

* Control released below Little Goose Dam.

Table 2 summarizes and Appendix Tables 9.0 through 11.7 list total-to-date adult returns of steelhead tagged as juveniles at Lower Granite Dam in 1985 and 1986. In-river control releases were marked in 1986 but not in 1985.

To date, a total of 534 (1.8% of the release) steelhead that were marked and transported to below Bonneville Dam in 1985 have been recovered as adults from all sample sites. The majority of the fish were recaptured in the adult collection facility at Lower Granite Dam where a large portion of the adult population is sampled. It is noteworthy that returns of 2-ocean age fish from this release (219) were substantially lower than 1-ocean age returns (315). Normally, we would expect to recover as many or more 2-ocean age as 1-ocean age fish from fish marked at the dam. The lower than expected recovery of 2-ocean age fish may be due to extremely adverse adult migration conditions encountered by these fish in the Columbia and Snake Rivers during the summer and fall of 1987 (Matthews et al. 1988). A delay in migration, and the associated mortalities, was likely the result of unusually low river flows and high water temperatures during this time.

One-ocean age returns of transport and control releases of steelhead marked in 1986 are complete. Overall, a positive relationship is shown when comparing observed returns of transport and control fish (0.3 vs. 0.2%, respectively). However, these return rates are also much lower than expected. One-ocean age observed returns of over 1.0% were documented for steelhead transported from Lower Granite Dam in 1984 and 1985 (Matthews et al. 1988). As was the case for 2-ocean age fish from the 1985 releases, these fish also migrated upriver during drought conditions in the summer and fall of 1987. Again, we believe delay and mortality associated with extremely low river flows and high water temperatures in 1987 were the major factors leading to the lower than expected recoveries of these fish.

Table 2.--Preliminary summary of adult steelhead marked at Lower Granite Dam in 1985 and 1986 (recoveries through July 1988).

Groups	Number released	Ocean-age	Observed adult returns						Total	
			Bonneville Dam	Indian fishery	River fishery	L. Granite Dam	Hatcheries	Priest Rapids Dam	N	%
1985										
Transport	30,041	1-ocean	48	8	31	216	12	0	315	1.05
		<u>2-ocean</u>	<u>14</u>	<u>13</u>	<u>12</u>	<u>142</u>	<u>37</u>	<u>1</u>	<u>219</u>	<u>0.73</u>
		Total	62	21	43	358	49	1	534	1.78
1986										
Transport	30,659	1-ocean	10	1	3	87	2	0	103	0.34
1986										
Control*	31,414	1-ocean	1	0	1	60	5	0	67	0.21

*Controls released below Little Goose Dam.

McNary Dam Studies

Recoveries of 1- and 2-ocean age spring/summer and fall chinook salmon from studies conducted at McNary Dam in 1986 are detailed in Appendix Tables 12.0 through 15.6. As reported by Matthews et al. (1988), adult recoveries are still few and scattered at this time. To date, we have recorded seven adult recoveries each from transport and control groups of spring/summer chinook salmon from all recovery areas. Likewise for fall chinook salmon, we have recorded only eight transports and three controls. We expect adult recoveries associated with the McNary Dam studies to increase considerably next year.

SUMMARY

1. Due to persistent drought conditions in the Snake River Basin, smolt marking operations to re-evaluate transportation from Lower Granite Dam were suspended in 1988. NMFS completed only 1 year (1986) of marking under the current 3-year evaluation.
2. Totals of 50,029 test and 75,036 control spring/summer chinook salmon and 60,013 transport and 60,010 control fall chinook salmon were marked at McNary Dam in 1988, the final year of a 3-year marking study to re-evaluate transportation from that facility.
3. Post-marking delayed mortality (48 hour) averaged 0.4% for both spring/summer and fall chinook salmon at McNary Dam in 1988.
4. Observed adult returns to Lower Granite Dam of spring/summer chinook salmon tagged as juveniles for transport index purposes in 1985 are complete to the dam only. The observed return of 0.22% is similar to returns for the 1983 and 1984 transport index groups and is much improved compared to returns for transport releases of this species from 1976 to 1980. Adult returns to Lower Granite Dam

from 1986 juvenile transport research show transport and control recoveries of 0.11 and 0.06%, respectively.

5. We have recovered as adults 1.8% of the juvenile steelhead that were marked and transported to below Bonneville Dam in 1985. The majority of these fish were recovered at Lower Granite Dam. Low river-flows and accompanying high water-temperatures in the summer and fall of 1987 appeared to have considerably reduced the recovery of 2-ocean age fish from these releases. The same may be true for 1-ocean age adults from transport and control groups marked and released in 1986. One-ocean age adult recoveries of 0.34% for the transports and 0.21% for the controls were well below the expected recovery. These fish also migrated upstream in the summer and fall of 1987.
6. Adult recoveries of spring/summer and fall chinook salmon marked as juveniles at McNary Dam in 1986-87 are still few and scattered. Recoveries of these fish should increase considerably next year.

LITERATURE CITED

- Matthews, G. M., D. L. Park, J. R. Harmon, C. S. McCutcheon, and A. J. Novotny.**
1987. Evaluation of transportation and related research on the Columbia and Snake Rivers, 1986. U.S. Dept. Commer., NOAA, NMFS, NWAFC, Seattle WA. 34 p., plus Appendix. (Report to the U.S. Army Corps of Engineers, Contract DACW68-84-H-0034.)
- Matthews, G. M., D. L. Park, J. R. Harmon, and T. E. Ruehle.**
1988. Evaluation of transportation and related research on the Columbia and Snake Rivers, 1987. U.S. Dept. Commer., NOAA, NMFS, NWAFC, Seattle, WA. 25 p. plus Appendix. (Report to the U.S. Army Corps of Engineers, Contract DACW68-84-H-0034.)
- Park, D. L.**
1985. A review of smolt transportation to bypass dams on the Columbia and Snake Rivers. Part II of comprehensive study of juvenile salmonid transportation. U.S. Army Corps of Engineers, Walla Walla District, Walla Walla, WA., p. 2-1 to 2-65.

APPENDIX

Data Tables



Appendix Table 1.--Summary of spring/summer chinook salmon marked at McNary Dam in 1988 including dates, brands, wire tag codes, and numbers marked.

Replicate No.	Marking period	Brand position, ^a symbol, and orientation ^b	Wire tag code	No. released
<u>Control (McNary Dam tailrace)</u>				
1	8-16 Apr	LAW-1	23-22-26	7,504
2	16 Apr-1 May	LAW-2	23-22-27	7,500
3	1-6 May	LAW-3	23-22-28	7,503
4	6-8 May	LAW-4	23-22-29	7,534
5	8-10 May	LAP-1	23-22-30	7,503
6	10-12 May	LAP-2	23-22-31	7,482
7	12-15 May	LAP-3	23-22-32	7,501
8	15-19 May	LAP-4	23-22-33	7,505
9	19-24 May	LAE-1	23-22-34	7,502
10	25 May-2 June	LAE-2	23-22-35	7,502
Total				75,036
<u>Test (barge transport below Bonneville Dam)</u>				
1	8-16 Apr	RAL-1	23-22-36	5,002
2	16 Apr-1 May	RAL-2	23-22-37	5,002
3	1-6 May	RAL-3	23-22-38	5,002
4	6-8 May	RAL-4	23-22-39	5,011
5	8-10 May	RAV-1	23-22-40	5,002
6	10-12 May	RAV-2	23-22-41	5,002
7	12-15 May	RAV-3	23-22-42	5,001
8	15-19 May	RAV-4	23-22-43	5,003
9	19-25 May	RAS-1	23-22-44	5,002
10	25 May-2 June	RAS-2	23-22-45	5,002
Total				50,029

^a LA and RA (position) indicate left and right anterior sides of fish, respectively.

^b Orientation refers to rotation of brand around its centerpoint.

Appendix Table 2.--Summary of fall chinook salmon marked at McNary Dam in 1988 including dates, brands, wire tag codes, and numbers marked.

Replicate No.	Marking period	Brand position, ^a symbol, and orientation. ^b	Wire tag code	No. released
<u>Control (McNary Dam tailrace)</u>				
1	13-21 June	LAIT-1	23-22-46	10,002
2	21-23 June	LAIT-2	23-22-47	10,002
3	23-26 June	LAIT-3	23-22-48	10,002
4	27 June-1 July	LAIT-4	23-22-49	10,002
5	5-13 July	LA2X-1	23-22-50	10,002
6	13-14 July	LA2X-3	23-20-48	5,008
6	18-21 July	LAIC-1	23-20-49	<u>4,992</u>
Total				<u>60,010</u>
<u>Test (barge transport below Bonneville Dam)</u>				
1	13-21 June	RAIU-1	23-22-60	10,002
2	21-23 June	RAIU-2	23-22-61	10,003
3	23-26 June	RAIU-3	23-23-01	10,002
4	27 June-1 July	RAIU-4	23-23-02	10,002
5	5-13 June	RAI -1	23-23-03	10,002
6	13-21 July	RAI -3	23-23-04	<u>10,002</u>
Total				<u>60,013</u>

^a LA and RA (position) indicate left and right anterior sides of fish, respectively.

^b Orientation refers to rotation of brand around its centerpoint.

Appendix Table 3.--Tag loss and mortality from tagged spring/summer chinook salmon that were held 48h after marking at McNary Dam in 1988.

Date	CWT	Number held	48h Mortality	Lost tags
<u>Controls</u>				
8-16 Apr	23-22-26	99	0	0
16 Apr-1 May	23-22-27	105	1	0
1-6 May	23-22-28	45	1	0
6-8 May	23-22-29	25	0	0
8-10 May	23-22-30	0	0	0
10-12 May	23-22-31	49	0	0
12-15 May	23-22-32	0	0	0
15-19 May	23-22-33	51	0	0
19-24 May	23-22-34	50	0	0
25 May-2 June	23-22-35	77	0	0
	Total	501	2	0
<u>Transports</u>				
8-16 Apr	23-22-36	96	1	0
16 Apr-1 May	23-22-37	101	0	0
1-6 May	23-22-38	45	1	0
6-8 May	23-22-39	25	0	0
8-10 May	23-22-40	0	0	0
10-12 May	23-22-41	48	0	0
12-15 May	23-22-42	0	0	0
15-19 May	23-22-43	50	0	1
19-25 May	23-22-44	50	0	0
25 May-2 June	23-22-45	74	0	0
	Total	489	2	1

Appendix Table 4.--Tag loss and mortality from tagged fall chinook salmon that were held 48h after marking at McNary Dam in 1988.

Date	CWT	Number held	48h Mortality	Lost tags
<u>Controls</u>				
13-21 June	23-22-46	76	0	0
21-23 June	23-22-47	51	0	1
23-26 June	23-22-48	26	0	1
27 June-1 July	23-22-49	25	1	0
5-13 July	23-22-50	52	1	0
13-14 July	23-20-48	24	0	0
18-21 July	23-20-49	25	0	0
	Total	279	2	2
<u>Transports</u>				
13-21 June	23-22-60	76	0	1
21-23 June	23-22-61	53	0	1
23-26 June	23-23-01	27	0	0
27 June-1 July	23-23-02	26	0	0
5-13 July	23-23-03	53	0	0
13-21 July	23-23-04	50	0	0
	Total	285	0	2

Appendix Table 5.0.--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 : 27 July 1988

RELEASE GROUPS INCLUDED: 8510A 8510B 8510C 8510D 8510E

1985 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

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				TOTAL	% RETURN
	1985	1986	1987	1988		
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	2	17	9	28	0.062
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	11	52	38	101	0.222
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	1	2	0.004
INDIAN CEREMONIAL	0	0	1	0	1	0.002
HATCHERIES						
DWORSHAK H.	0	0	5	0	5	0.011
PAHSINERDI 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	1	2	0.004
DESCHUTES R. HATCHERIES	0	0	1	0	1	0.002
HATCHERIES (GENERAL)	0	1	6	0	7	0.015
HATCHERIES (GENERAL)	0	0	1	0	1	0.002
STREAM SURVEY	0	1	3	0	4	0.009
TOTALS	0	17	99	49	165	0.363
PERCENT OF RECOVERY	%	0.0	10.3	60.0	29.7	

Appendix Table 5.1.--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 : 27 July 1988
RELEASE GROUPS INCLUDED: 8510A

1985 L.GRANITE TRANS BARGE BELOW BONNEVILLE
SPRING CHINOOK

Brands Used: RAP11
Wire Codes Used: 231807

NUMBER RELEASED: 9893

RECOVERY AREA	1985	YEAR OF RETURN			TOTAL	% RETURN
		1986	1987	1988		
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	0	1	3	4	0.040
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	6	3	9	0.091
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	6	15	0.152
PERCENT OF RECOVERY	%	0.0	6.7	53.3	40.0	

Appendix Table 5.2.--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 : 27 July 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	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	0	9	3	12	0.069
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	3	19	12	34	0.195
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
HELLS CANYON (OXBOW) H.	0	0	0	1	1	0.006
DESCHUTES R. HATCHERIES	0	0	1	0	1	0.006
	0	1	3	0	4	0.023
STREAM SURVEY	0	1	0	0	1	0.006
TOTALS	0	5	42	16	63	0.362
PERCENT OF RECOVERY	%	0.0	7.9	66.7	25.4	

Appendix Table 5.3.--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 : 27 July 1988
 RELEASE GROUPS INCLUDED: 0510C

1985 L.GRANITE TRANS BARGE
 SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAPI3
 Wire Codes Used: 231814

NUMBER RELEASED: 9539

RECOVERY AREA	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	0	5	1	6	0.063
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	2	9	7	18	0.189
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						
INDIAN FISHERY	0	0	0	1	1	0.010
INDIAN CEREMONIAL	0	0	1	0	1	0.010
HATCHERIES						
DWORSHAK H.	0	0	2	0	2	0.021
RAPID RIVER H.	0	0	1	0	1	0.010
RAPID RIVER H.	0	0	2	0	2	0.021
STREAM SURVEY	0	0	1	0	1	0.010
TOTALS	0	2	21	9	32	0.335
PERCENT OF RECOVERY	%	0.0	6.3	65.6	28.1	

Appendix Table 5.4.--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 : 27 July 1988
RELEASE GROUPS INCLUDED: 8510D

1985 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAPI4
Wire Codes Used: 231815

NUMBER RELEASED: 3724

RECOVERY AREA	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	0	1	1	2	0.054
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	1	8	10	19	0.510
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
	0	0	1	0	1	0.027
STREAM SURVEY	0	0	2	0	2	0.054
TOTALS	0	1	13	11	25	0.671
PERCENT OF RECOVERY	%	0.0	4.0	52.0	44.0	

Appendix Table 5.5.--Recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam from 15-22 May 1985.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8510E

1985 L.GRANITE TRANS BARGE
 SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: LAP11
 Wire Codes Used: 231816

NUMBER RELEASED: 4850

RECOVERY AREA	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
RIVER SYSTEM TRAPS						
BONNEVILLE TRAP	0	2	1	1	4	0.082
MCNARY TRAP	0	0	0	0	0	0.000
LOWER GRANITE TRAP	0	5	10	6	21	0.433
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						
PAHSINEROI 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	7	30	0.619
PERCENT OF RECOVERY	%	0.0	26.7	50.0	23.3	

Appendix Table 6.0.--Summary of all recoveries of adult spring chinook salmon released as controls below Little Goose Dam in 1986.

Master File Date : 27 July 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
Wire Codes Used: 231902 231903 231904 231905 231906 231907 231908 231909 231863

NUMBER RELEASED: 45035

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	1	1	0.002
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	2	27	29	0.064
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	28	32	0.071
PERCENT OF RECOVERY	%	0.0	12.5	87.5	

Appendix Table 6.1.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 9-11 April 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8614A

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
SPRING CHINOOK

Brands Used: LAP 1
Wire Codes Used: 231902

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	1	2	3	0.060
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	1	0	1	0.020
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	2	2	4	0.080
PERCENT OF RECOVERY	%	0.0	50.0	50.0	

Appendix Table 6.2.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 11-15 April 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8614B

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
 SPRING CHINOOK

Brands Used: LAP 2
 Wire Codes Used: 231903

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	1	3	4	0.080
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	3	4	0.080
PERCENT OF RECOVERY	%	0.0	25.0	75.0	

Appendix Table 6.3.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 15-17 April 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8614C

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
SPRING CHINOOK

Brands Used: LAP 3
Wire Codes Used: 231904

NUMBER RELEASED: 5104

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	1	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	0	1	1	0.020
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 6.4.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 17-21 April 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8614D

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
SPRING CHINOOK

Brands Used: LAP 4
Wire Codes Used: 231905

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	1	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	0	1	1	0.020
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 6.5.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 21-23 April 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8614E

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
 SPRING CHINOOK

Brands Used: LAW 1
 Wire Codes Used: 231906

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	7	7	0.140
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	0	7	7	0.140
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 6.6.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 23-27 April 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8614F

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
 SPRING CHINOOK

Brands Used: LAW 2
 Wire Codes Used: 231907

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	2	2	0.040
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	0	2	2	0.040
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 6.7.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 29 April to 3 May 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 86146

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
 SPRING CHINOOK

Brands Used: LAN 3
 Wire Codes Used: 231908

NUMBER RELEASED: 5000

RECOVERY AREA	YEAR OF RETURN			TOTAL	% RETURN
	1986	1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	1	1	0.020
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	6	6	0.120
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	1	0	1	0.020
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	1	7	8	0.160
PERCENT OF RECOVERY	%	0.0	12.5	87.5	

Appendix Table 6.8.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 3-15 May 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8614H

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
 SPRING CHINOOK

Brands Used: LAW 4
 Wire Codes Used: 231909

NUMBER RELEASED: 4998

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	3	3	0.060
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	0	3	3	0.060
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 6.9.--Recoveries of adult spring chinook salmon released as juveniles below Little Goose Dam from 15-31 May, 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 86141

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
 SPRING CHINOOK

Brands Used: LAL 1
 Wire Codes Used: 231863

NUMBER RELEASED: 4933

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	2	2	0.041
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	0	2	2	0.041
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 7.0.--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 : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	7	7	0.016
MCMARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	7	41	48	0.107
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					
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	0	0	0	0.000
SNAKE R.	0	0	1	1	0.002
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY					
INDIAN FISHERY	0	0	2	2	0.004
HATCHERIES					
RAPID RIVER H.	0	1	0	1	0.002
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	9	51	60	0.133
PERCENT OF RECOVERY	%	0.0	15.0	85.0	

Appendix Table 7.1.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 10-12 April 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8612A

1986 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAL 1
Wire Codes Used: 231910

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	2	1	3	0.060
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	1	3	0.060
PERCENT OF RECOVERY	%	0.0	66.7	33.3	

Appendix Table 7.2.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 12-16 April 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8612B

1986 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAL 2
Wire Codes Used: 231911

NUMBER RELEASED: 5001

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	2	2	0.040
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	1	5	6	0.120
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	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0.000
SNAKE R.	0	0	1	1	0.020
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	8	9	0.180
PERCENT OF RECOVERY	%	0.0	11.1	88.9	

Appendix Table 7.3.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam on 16 April 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8612C

1986 L.GRANITE TRANS BARGE
 SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAL 3
 Wire Codes Used: 231912

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	2	2	0.040
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	2	2	4	0.080
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	4	6	0.120
PERCENT OF RECOVERY	%	0.0	33.3	66.7	

Appendix Table 7.4.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 18-20 April 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8612D

1986 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAL 4
Wire Codes Used: 231913

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	1	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	0	1	1	0.020
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 7.5.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 20-22 April 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8612E

1986 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAV 1
Wire Codes Used: 231914

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	3	3	0.060
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	2	8	10	0.200
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					
INDIAN FISHERY	0	0	1	1	0.020
HATCHERIES					
RAPID RIVER H.	0	1	0	1	0.020
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	3	12	15	0.300
PERCENT OF RECOVERY	%	0.0	20.0	80.0	

Appendix Table 7.6.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 24-28 April 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8612F

1986 L.GRANITE TRANS BARGE
 SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAV 2
 Wire Codes Used: 231915

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	8	8	0.160
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	0	8	8	0.160
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 7.7.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 28 April to 2 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 86126

1986 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAV 3
Wire Codes Used: 231916

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	5	5	0.100
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	0	5	5	0.100
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 7.8.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 5-14 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8612H

1986 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAV 4
Wire Codes Used: 231917

NUMBER RELEASED: 5000

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	3	3	0.060
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					
INDIAN FISHERY	0	0	1	1	0.020
HATCHERIES	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	0	4	4	0.080
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 7.9.--Recoveries of adult spring chinook salmon transported as juveniles by barge from Lower Granite Dam to below Bonneville Dam from 14 May to 3 June 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8612I

1986 L.GRANITE TRANS BARGE
SPRING CHINOOK

BELOW BONNEVILLE

Brands Used: RAP 1
Wire Codes Used: 231918

NUMBER RELEASED: 5003

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MENARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	8	8	0.160
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	0.020
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	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	1	8	9	0.180
PERCENT OF RECOVERY	%	0.0	11.1	88.9	

Appendix Table 8.0.--Summary of all recoveries of adult spring chinook salmon transported by barge from Lower Granite Dam to below Bonneville Dam in 1987.

Master File Date : 27 July 1988

RELEASE GROUPS INCLUDED: 8706A 8706B 8706C 8706D 8706E 8706F 8706G 8706H 8706I

1987 L. GRANITE BARGE INDEX

BELOW BONNEVILLE

SPRING CHINOOK

Brands Used: RA2 1 RA2 2 RA9 1 RA2 3 RA2 4 RA9 2 RA9 3 RA9 4 RASU1 RASU3 RASU2
Wire Codes Used: 231943 231944 231947 231945 231946 231948 232018 232019 232022 232029 232023

NUMBER RELEASED: 50207

RECOVERY AREA	1987	YEAR OF RETURN 1988	TOTAL	% RETURN
RIVER SYSTEM TRAPS				
BONNEVILLE TRAP	0	0	0	0.000
MCNARY TRAP	0	0	0	0.000
LOWER GRANITE TRAP	0	12	12	0.024
PRIEST RAPIDS TRAP	0	0	0	0.000
OCEAN FISHERIES	0	0	0	0.000
RIVER SPORT	0	0	0	0.000
RIVER COMMERCIAL	0	0	0	0.000
INDIAN FISHERY	0	0	0	0.000
HATCHERIES	0	0	0	0.000
STREAM SURVEY	0	0	0	0.000
TOTALS	0	12	12	0.024
PERCENT OF RECOVERY	%	0.0	100.0	

Appendix Table 9.0.--Summary of all recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam in 1985.

Master File Date : 27 July 1988

RELEASE GROUPS INCLUDED: 8509A 8509B 8509C 8509D 8509E

1985 L.GRANITE TRANS BARGE
STEELHEAD

BELOW BONNEVILLE

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

NUMBER RELEASED: 30041

RECOVERY AREA	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
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	142	0	358	1.192
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	8	0	37	0.123
CLEARWATER R.	0	1	4	0	5	0.017
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
CLEARWATER INDIAN	0	0	2	0	2	0.007
HATCHERIES						
DWRSHAK H.	0	0	26	0	26	0.087
PAHSINEROI H.	0	6	2	0	8	0.027
HELLS CANYON (DIXON) H.	0	6	8	0	14	0.047
	0	0	1	0	1	0.003
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	315	219	0	534	1.778
PERCENT OF RECOVERY	Z	0.0	59.0	41.0	0.0	

Appendix Table 9.1.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 20-26 April 1985.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8509A

1985 L.GRANITE TRANS BARGE
 STEELHEAD

BELOW BONNEVILLE

Brands Used: RAPI1
 Wire Codes Used: 231B17

NUMBER RELEASED: 1635

RECOVERY AREA	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
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	12	0	26	1.590
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	16	0	36	2.202
PERCENT OF RECOVERY	%	0.0	55.6	44.4	0.0	

Appendix Table 9.2.--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 : 27 July 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	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
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	26	0	67	2.173
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	3	0	7	0.227
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY						
FALL INDIAN NET	0	1	1	0	2	0.065
CLEARWATER INDIAN	0	0	2	0	2	0.065
HATCHERIES						
DWORSHAK H.	0	0	3	0	3	0.097
PAHSINERDI H.	0	2	0	0	2	0.065
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	49	36	0	85	2.756
PERCENT OF RECOVERY	2	0.0	57.6	42.4	0.0	

Appendix Table 9.3.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 6-10 May 1985.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8509C

1985 L.GRANITE TRANS BARGE
STEELHEAD

BELOW BONNEVILLE

Brands Used: RAPI3
Wire Codes Used: 231811

NUMBER RELEASED: 7640

RECOVERY AREA	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
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	45	0	97	1.270
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	3	0	12	0.157
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						
DWORSHAK H.	0	0	16	0	16	0.209
PAHSINEROI H.	0	1	1	0	2	0.026
HELLS CANYON (OXBOW) H.	0	2	2	0	4	0.052
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	88	72	0	160	2.094
PERCENT OF RECOVERY	%	0.0	55.0	45.0	0.0	

Appendix Tabale 9.4.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 13-17 May 1985.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8509D

1985 L.GRANITE TRANS BARGE
STEELHEAD

BELOW BONNEVILLE

Brands Used: RAPI4
Wire Codes Used: 231812

NUMBER RELEASED: 8855

RECOVERY AREA	1985	YEAR OF RETURN		1988	TOTAL	% RETURN
		1986	1987			
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	38	0	98	1.107
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	2	0	8	0.090
CLEARWATER R.	0	0	3	0	3	0.034
RIVER COMMERCIAL	0	0	0	0	0	0.000
INDIAN FISHERY						
FALL INDIAN NET	0	3	4	0	7	0.079
HATCHERIES						
DWORSHAK H.	0	0	6	0	6	0.068
PAHSINEROI H.	0	1	0	0	1	0.011
HELLS CANYON (DIXBOW) H.	0	1	6	0	7	0.079
	0	0	1	0	1	0.011
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	84	63	0	147	1.660
PERCENT OF RECOVERY	%	0.0	57.1	42.9	0.0	

Appendix Table 9.5.--Recoveries of adult steelhead transported by barge from Lower Granite Dam to below Bonneville Dam from 18-25 May 1985.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8509E

1985 L.GRANITE TRANS BARGE
 STEELHEAD

BELOW BONNEVILLE

Brands Used: LAP11
 Wire Codes Used: 231B13

NUMBER RELEASED: 8827

RECOVERY AREA	1985	YEAR OF RETURN			TOTAL	% RETURN
		1986	1987	1988		
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	21	0	70	0.793
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
CLEARWATER R.	0	0	1	0	1	0.011
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						
DWORSHAK H.	0	0	1	0	1	0.011
PAHSIMERGI H.	0	1	1	0	2	0.023
HELLS CANYON (OXBOW) H.	0	3	0	0	3	0.034
STREAM SURVEY	0	0	0	0	0	0.000
TOTALS	0	74	32	0	106	1.201
PERCENT OF RECOVERY	%	0.0	69.8	30.2	0.0	

Appendix Table 10.0.--Summary of all recoveries of adult steelhead released as juveniles below Little Goose Dam in 1986.

Master File Date : 27 July 1988

RELEASE GROUPS INCLUDED: 8611A 8611B 8611C 8611D 8611E 8611F 8611G 8611H

1986 L.GRANITE TRANS CONTROL
STEELHEAD

BELOW L.GOOSE

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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	1	0	1	0.003
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	60	2	62	0.197
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	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0.000
SNAKE R.	0	1	0	1	0.003
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES					
PAHSINEROI H.	0	2	0	2	0.006
	0	3	0	3	0.010
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	67	2	69	0.220
PERCENT OF RECOVERY	%	0.0	97.1	2.9	

Appendix Table 10.1.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 15-27 April 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: B611A

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
 STEELHEAD

Brands Used: LAP 1
 Wire Codes Used: 231902

NUMBER RELEASED: 4319

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	Z RETURN
		1987	1988		
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					
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	0	0	0	0.000
SNAKE R.	0	1	0	1	0.023
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY	0	0	0	0	0.000
HATCHERIES					
PAHSINEROI H.	0	1	0	1	0.023
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	27	0	27	0.625
PERCENT OF RECOVERY	Z	0.0	100.0	0.0	

Appendix Table 10.2.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 29 April to 1 May 1986.

Master File Date : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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					
PAHSINERDI H.	0	1	0	1	0.024
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	10	0	10	0.239
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 10.3.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 1-8 May 1986.

Master File Date : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	0.040
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	0.040
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 10.4.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 8-13 May 1986.

Master File Date : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	1	0	1	0.024
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	7	1	8	0.193
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	1	9	0.217
PERCENT OF RECOVERY	%	0.0	88.9	11.1	

Appendix Table 10.5.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 13-17 May 1986.

Master File Date : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	3	0	3	0.071
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	9	0	9	0.212
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 10.6.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 17-22 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8611F

1986 L.GRANITE TRANS CONTROL BELOW L.GOOSE
STEELHEAD

Brands Used: LAM 2
Wire Codes Used: 231906

NUMBER RELEASED: 4250

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	8	0	8	0.188
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 10.7.--Recoveries of adult steelhead released as juveniles below Little Goose Dam from 22-27 May 1986.

Master File Date : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	1	1	2	0.047
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	1	2	0.047
PERCENT OF RECOVERY	%	0.0	50.0	50.0	

Appendix Table 10.8.--Recoveries of adult steelhead released as juveniles below Little Goose Dam on 27 May 1986.

Master File Date : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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 11.0.--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 : 27 July 1988

RELEASE GROUPS INCLUDED: B613A B613B B613C B613D B613E B613F B613G

1986 L.GRANITE TRANS BARGE
STEELHEAD

BELOW BONNEVILLE

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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	10	2	12	0.039
MENARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	87	3	90	0.294
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	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0.000
SNAKE R.	0	2	0	2	0.007
CLEARWATER R.	0	1	0	1	0.003
RIVER COMMERCIAL	0	0	0	0	0.000
INDIAN FISHERY					
CLEARWATER INDIAN	0	1	0	1	0.003
HATCHERIES					
PAHSINERDI H.	0	2	0	2	0.007
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	103	5	108	0.352
PERCENT OF RECOVERY	%	0.0	95.4	4.6	

Appendix Table 11.1.--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 : 27 July 1988
 RELEASE GROUPS INCLUDED: 8613A

1986 L.GRANITE TRANS BARGE
 STEELHEAD

BELOW BONNEVILLE

Brands Used: RAL 1
 Wire Codes Used: 231910

NUMBER RELEASED: 4904

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	1	1	2	0.041
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	33	2	35	0.714
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					
CLEARWATER INDIAN	0	1	0	1	0.020
HATCHERIES	0	0	0	0	0.000
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	35	3	38	0.775
PERCENT OF RECOVERY	%	0.0	92.1	7.9	

Appendix Table 11.2.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 28-30 April 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 86138

1986 L.GRANITE TRANS BARGE BELOW BONNEVILLE
 STEELHEAD

Brands Used: RAL 2
 Wire Codes Used: 231911

NUMBER RELEASED: 4250

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	1	1	0.024
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					
PAHSINERDI H.	0	1	0	1	0.024
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	6	1	7	0.165
PERCENT OF RECOVERY	%	0.0	85.7	14.3	

Appendix Table 11.3.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 2-9 May 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8613C

1986 L.GRANITE TRANS BARGE
 STEELHEAD

BELOW BONNEVILLE

Brands Used: RAL 3
 Wire Codes Used: 231912

NUMBER RELEASED: 4247

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	Z RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	3	0	3	0.071
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	13	0	13	0.306
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	16	0	16	0.377
PERCENT OF RECOVERY	Z	0.0	100.0	0.0	

Appendix Table 11.4.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 9-14 May 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8613D

1986 L.GRANITE TRANS BARGE
 STEELHEAD

BELOW BONNEVILLE

Brands Used: RAL 4
 Wire Codes Used: 231913

NUMBER RELEASED: 4250

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	2	0	2	0.047
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					
PAHSINEROI H.	0	1	0	1	0.024
STREAM SURVEY	0	0	0	0	0.000
TOTALS	0	10	0	10	0.235
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 11.5.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 14-19 May 1986.

Master File Date : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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					
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	0	0	0	0.000
SNAKE R.	0	1	0	1	0.024
CLEARWATER R.	0	1	0	1	0.024
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	15	0	15	0.353
PERCENT OF RECOVERY	%	0.0	100.0		0.0

Appendix Table 11.6.--Recoveries of adult steelhead transported as juveniles from Lower Granite Dam to below Bonneville Dam from 19-23 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8613F

1986 L.GRANITE TRANS BARGE
STEELHEAD

BELOW BONNEVILLE

Brands Used: RAV 2
Wire Codes Used: 231916

NUMBER RELEASED: 4514

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	14	1	15	0.332
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	0	0	0	0.000
WENATCHEE R.	0	0	0	0	0.000
SNAKE R.	0	1	0	1	0.022
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	15	1	16	0.354
PERCENT OF RECOVERY	%	0.0	93.8	6.3	

Appendix Table 11.7.--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 : 27 July 1988
RELEASE GROUPS INCLUDED: 86136

1986 L.GRANITE TRANS BARGE
STEELHEAD

BELOW BONNEVILLE

Brands Used: RAV 3
Wire Codes Used: 231917

NUMBER RELEASED: 4250

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	1	0	1	0.024
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	6	0	6	0.141
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 12.0.--Summary of all recoveries of adult spring chinook salmon released as juveniles below McNary Dam in 1986.

Master File Date : 27 July 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 LA1V3 LA1D3 LA1M3 LA1F3 LA151 LA1V1 LA1D1 LA1M1 LA1F1
 Wire Codes Used: 231729 231845 231847 231849 231851 231853 231855 231857 231859 231919

NUMBER RELEASED: 50273

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	2	2	0.004
PRIEST RAPIDS TRAP	0	1	3	4	0.008
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
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	5	7	0.014
PERCENT OF RECOVERY	%	0.0	28.6	71.4	

Appendix Table 12.1.--Recoveries of adult spring chinook salmon released as juveniles below McNary Dam from 23 April to 5 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8602A

1986 MCNARY TRANS CONTROL BELOW MCNARY
SPRING CHINOOK

Brands Used: LA153
Wire Codes Used: 231729

NUMBER RELEASED: 5620

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	1	1	0.018
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	0	1	1	0.018
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 12.2.--Recoveries of adult spring chinook salmon released as juveniles below McNary Dam from 7-9 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8602C

1986 MCNARY TRANS CONTROL BELOW MCNARY
SPRING CHINOOK

Brands Used: LAID3
Wire Codes Used: 231847

NUMBER RELEASED: 5168

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	1	1	0.019
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	0	1	1	0.019
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 12.3.--Recoveries of adult spring chinook salmon released as juveniles below McNary Dam from 12-14 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8602F

1986 MCNARY TRANS CONTROL BELOW MCNARY
SPRING CHINOOK

Brands Used: LA151
Wire Codes Used: 231853

NUMBER RELEASED: 5158

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	1	1	0.019
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	0	1	1	0.019
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 12.4.--Recoveries of adult spring chinook salmon released as juveniles below McNary Dam from 14-17 May 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 86026

1986 MCNARY TRANS CONTROL BELOW MCNARY
 SPRING CHINOOK

Brands Used: LAIVI
 Wire Codes Used: 231855

NUMBER RELEASED: 5043

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	Z RETURN
		1987	1988		
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	0.020
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	0.020
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	0	0	0	0	0.000
TOTALS	0	2	0	2	0.040
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 12.5.--Recoveries of adult spring chinook salmon released as juveniles below McNary Dam from 20-24 May 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 86021

1986 MCNARY TRANS CONTROL BELOW MCNARY
 SPRING CHINOOK

Brands Used: LAIMI
 Wire Codes Used: 231859

NUMBER RELEASED: 5079

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	1	1	0.020
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	0	1	1	0.020
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 12.6.--Recoveries of adult spring chinook salmon released as juveniles below McNary Dam from 27 May to 6 June, 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8602J

1986 MCNARY TRANS CONTROL BELOW MCNARY
SPRING CHINOOK

Brands Used: LAIFI
Wire Codes Used: 231919

NUMBER RELEASED: 3472

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	0	0	0.000
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	1	1	0.029
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	0	1	1	0.029
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 13.0.--Summary of all recoveries of adult spring chinook salmon transported from McNary Dam to below Bonneville Dam in 1986.

Master File Date : 27 July 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	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	2	2	0.004
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	1	1	0.002
PRIEST RAPIDS TRAP	0	1	2	3	0.006
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	5	7	0.014
PERCENT OF RECOVERY	%	0.0	28.6	71.4	

Appendix Table 13.1.--Recoveries of adult spring chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 6-7 May 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8601B

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
 SPRING CHINOOK

Brands Used: RAIC3
 Wire Codes Used: 231848

NUMBER RELEASED: 4936

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	0.020
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 13.2.--Recoveries of adult spring chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 17-20 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8601H

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
SPRING CHINOOK

Brands Used: RAIF3
Wire Codes Used: 231860

NUMBER RELEASED: 5099

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	Z RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	1	1	0.020
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	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	0	1	1	0.020
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 13.3.--Recoveries of adult spring chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 20-24 May 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 86011

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
SPRING CHINOOK

Brands Used: RAID3
Wire Codes Used: 231861

NUMBER RELEASED: 5032

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	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	0.020
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 13.4.--Recoveries of adult spring chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 27 May to 6 June 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8601J

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
SPRING CHINOOK

Brands Used: RAIM3
Wire Codes Used: 231920

NUMBER RELEASED: 3513

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
RIVER SYSTEM TRAPS					
BONNEVILLE TRAP	0	0	1	1	0.028
MCNARY TRAP	0	0	0	0	0.000
LOWER GRANITE TRAP	0	0	1	1	0.028
PRIEST RAPIDS TRAP	0	0	2	2	0.057
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	0	4	4	0.114
PERCENT OF RECOVERY	%	0.0	0.0	100.0	

Appendix Table 14.0.--Summary of all recoveries of adult fall chinook salmon released as juveniles below McNary Dam in 1986.

Master File Date : 27 July 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			TOTAL	% RETURN
	1986	1987	1988		
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	1	0	1	0.001
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	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	3	0	3	0.003
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 14.1.--Recoveries of adult fall chinook salmon released as juveniles below McNary Dam from 15-19 July 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8615F

1986 MCNARY TRANS CONTROL BELOW MCNARY
 FALL CHINOOK

Brands Used: LA7H3
 Wire Codes Used: 231931

NUMBER RELEASED: 9949

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	1	0	1	0.010
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	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	0.010
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 14.2.--Recoveries of adult fall chinook salmon released as juveniles below McNary Dam from 19-21 July 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 86156

1986 MCNARY TRANS CONTROL BELOW MCNARY
FALL CHINOOK

Brands Used: LA103
Wire Codes Used: 231933

NUMBER RELEASED: 9968

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	Z RETURN
		1987	1988		
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	0.010
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	0.010
TOTALS	0	2	0	2	0.020
PERCENT OF RECOVERY	Z	0.0	100.0	0.0	

Appendix Table 15.0.--Summary of all recoveries of adult fall chinook salmon transported as juveniles from McNary Dam to below Bonneville Dam in 1986.

Master File Date : 27 July 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
Wire Codes Used: 231922 231924 231926 231928 231930 231932 231934 231936 231938 231940 231942 231832

NUMBER RELEASED: 114653

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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 15.1.--Recoveries of adult fall chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 9-15 July 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 8616E

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
FALL CHINOOK

Brands Used: RA3L1
Wire Codes Used: 231930

NUMBER RELEASED: 9959

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	0.010
WENATCHEE R.	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0.000
RIVER COMMERCIAL					
COMMERCIAL NET	0	1	0	1	0.010
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	0.020
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table. 15.2.--Recoveries of adult fall chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 15-19 July 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8616F

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
 FALL CHINOOK

Brands Used: RA7H1
 Wire Codes Used: 231932

NUMBER RELEASED: 9972

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	1	0	1	0.010
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	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	0.010
PERCENT OF RECOVERY	Z	0.0	100.0	0.0	

Appendix Table 15.3.--Recoveries of adult fall chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 19-21 July 1986.

Master File Date : 27 July 1988
RELEASE GROUPS INCLUDED: 86166

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
FALL CHINOOK

Brands Used: RA101
Wire Codes Used: 231934

NUMBER RELEASED: 9953

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	Z RETURN
		1987	1988		
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	0.010
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	0	0	0	0	0.000
TOTALS	0	1	0	1	0.010
PERCENT OF RECOVERY	Z	0.0	100.0	0.0	

Appendix Table 15.4.--Recoveries of adult fall chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 21-22 July 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8616H

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
 FALL CHINOOK

Brands Used: RA7H3
 Wire Codes Used: 231936

NUMBER RELEASED: 9840

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	1	0	1	0.010
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	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	0.010
PERCENT OF RECOVERY	2	0.0	100.0	0.0	

Appendix Table 15.5.--Recoveries of adult fall chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 23-28 July 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8616J

1986 MCNARY

TRANS BARGE

BELOW BONNEVILLE

FALL CHINOOK

Brands Used: RA173
 Wire Codes Used: 231940

NUMBER RELEASED: 9938

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	0.010
WENATCHEE R.	0	0	0	0	0.000
SNAKE R.	0	0	0	0	0.000
RIVER COMMERCIAL					
COMMERCIAL NET	0	1	0	1	0.010
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	0.020
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

Appendix Table 15.6.--Recoveries of adult fall chinook salmon transported as juveniles by barge from McNary Dam to below Bonneville Dam from 29 July to 1 August 1986.

Master File Date : 27 July 1988
 RELEASE GROUPS INCLUDED: 8616K

1986 MCNARY TRANS BARGE BELOW BONNEVILLE
 FALL CHINOOK

Brands Used: RA3J3
 Wire Codes Used: 231942

NUMBER RELEASED: 9887

RECOVERY AREA	1986	YEAR OF RETURN		TOTAL	% RETURN
		1987	1988		
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	0	0	0	0	0.000
RIVER COMMERCIAL					
COMMERCIAL NET	0	1	0	1	0.010
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	0.010
PERCENT OF RECOVERY	%	0.0	100.0	0.0	

