Migrational Characteristics of Juvenile Salmon and Steelhead in the Columbia River Basin—1983

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COASTAL ZONE AND ESTUARINE STUDIES

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INTRODUCTION

During 1983, the National Marine Fisheries Service (NMFS) monitored the seaward migration of juvenile salmonids in the Snake-Columbia River system. The purpose was to define the timing of migrations; estimate the population sizes of steelhead and yearling chinook salmon smolts at Lower Granite, McNary, and John Day Dams; and estimate survival and travel time through the Snake River system.

These data are necessary to: (1) assess the timing of the smolt migration so that daily spill and augmented river flows at dams can be utilized by management agencies concomitant with peak fish passage 1982, (2) ensure that spill allocated for fish passage by hydroelectric entities is judiciously used, (3) estimate the percentage of the total smolt migration that is being transported downstream from upstream collector dams (Basham et al. 1983), and (4) assess the success of the 1983 smolt outmigration. The data are used by the fishery agency/Indian tribal sponsored and Bonneville Power Administration funded smolt monitoring group (Water Budget Center) to formulate fish passage strategies, based upon which specific flows and/or dam operations are requested to expedite either collection and transportation or downstream migration of juvenile salmonids in the Snake-Columbia River system.

METHODS

Juvenile salmonid migrations were monitored at Lower Granite, McNary, and John Day Dams in 1983. Fish entering the fingerling collection system were sampled at Lower Granite and McNary Dams. An air-lift pump system was

used at John Day Dam to sample Turbine Intake Units 3B and 3C (Sims et al. 1982). Sampling schedules at the three sampling sites were as follows:

Lower Granite Dam	3 April - 30 July
McNary Dam	24 April - 31 August
John Day Dam	7 April - 30 September

Procedure for Generating Daily Population Estimates, by Either Species or Brand

Juvenile salmonids approaching a dam pass the facility over the spillway or through the powerhouse, relatively few are routed through the navigation locks or fish ladders. To make a valid population estimate it is necessary to account for fish passing both primary conduits (spillway and powerhouse). Of the fish entering the powerhouse, only a fraction end up in the collection facility which is physically associated with the powerhouse (Figure 1). This fraction varies between dams and species. The proportion of fish passing the dam (both spillway and powerhouse) that are actually collected is defined as collection efficiency. For each dam and species there is a direct relation between the percent of powerhouse discharge and collection efficiency; i.e., in general, the greater the discharge the higher the efficiency. Therefore, a unique collection efficiency must be calculated for each species at each dam.

To make a population estimate, fish guided into the powerhouse collection facility are routed through a sampler [see Page 17 in Basham et al. (1983)]. The procedure is controlled so that a systematic timed sample is taken each 24-h period. The sampled fish are examined, the species and brand types are identified and enumerated, and then the fish are

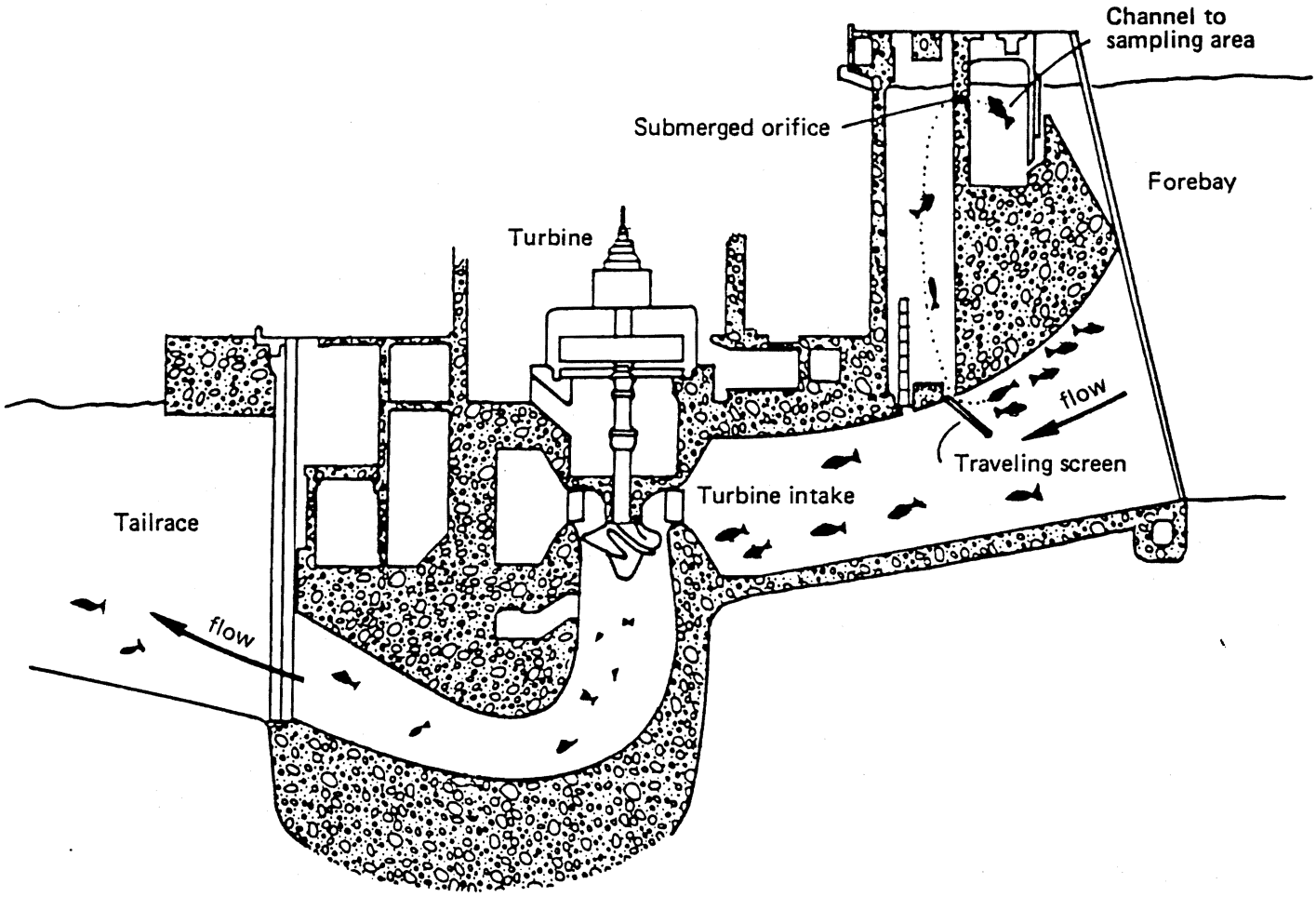


Figure 1.--Cross-section of a turbine unit and fish collection facility.

returned to the system. These data are used to generate daily population estimates:

DATA (daily)		REPORT
	MODEL	
•Enumerated mark-recaptures •Enumerated species		Daily population estimates

According to the relationship:

$$N_i = S_i \left[T_i \quad Y \right]^{-1} \qquad (1)$$

Where:

N_i = Daily (i) population estimate, by species or brand.

S_i = The number of a particular species or brand present in the sample on day i.

T_i = Fraction of each hour fish were being sampled

Y = Collection efficiency relationship for a particular species, from $Y = \alpha + BX_i$.[1/]

X_i = % of the combined spill and powerhouse flow discharged through the powerhouse during a 24-hour period, or subset thereof.[2/]

$\alpha = \beta$ parameters from sampling efficiency/powerhouse flow models.

1/ Error associated with Y is detailed later in this text.

2/ Since most juveniles enter the powerhouse from dusk to dawn, we used the powerhouse discharge levels from 2100-0600 h in our calculations. The sampling day is defined as noon to noon.

Collection Efficiency/Powerhouse Flow Models

The procedure for developing the models requires calibrating the collection efficiency of each sampling device (collector dam) for each species, over a broad range of powerhouse discharge levels. This is accomplished by capturing actively migrating (smolting) juveniles at a collector dam, freeze branding a known number, transporting that lot upstream, and releasing them at a standard station above the dam. Subsequently, the marked fish are recaptured at the same dam and enumerated. This process is repeated during the course of the migrations for several years.

The estimated collection efficiency for each release group is then plotted as a function of the proportion of water discharged through the powerhouse to produce the calibration curves illustrated in Figures 2 and 3. For McNary Dam, data collection efficiency-powerhouse discharge relationships were calculated separately for 1982 and 1983. No significant differences existed between interyear regressions for either species (steelhead or spring chinook salmon), thus multiple years of data were pooled to generate a single relationship for each species.

Collection efficiency (CE) for any marked efficiency release group is defined as:

$$CE = \sum C_i \left[R_t(1-M) \right]^{-1}$$

Where:

C_i = The estimated number of specific brand collected in the system on day i, or $S_i \cdot T_i^{-1}$

R_t = The total number of fish in the branded release lot.

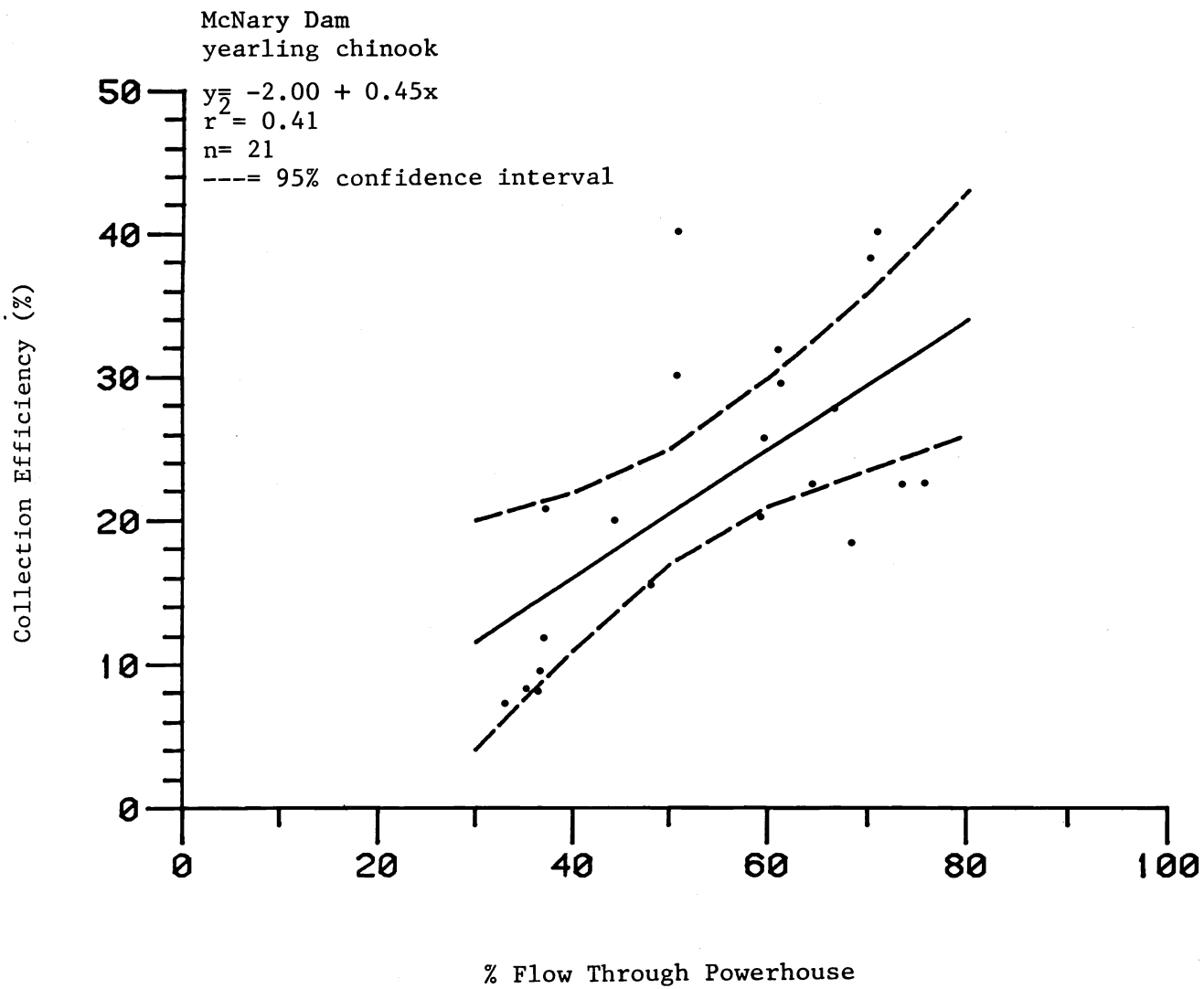


Figure 2.-- Flow/efficiency relationship for yearling chinook salmon at McNary Dam - 1982, 1983. Data are presented in Appendix J.

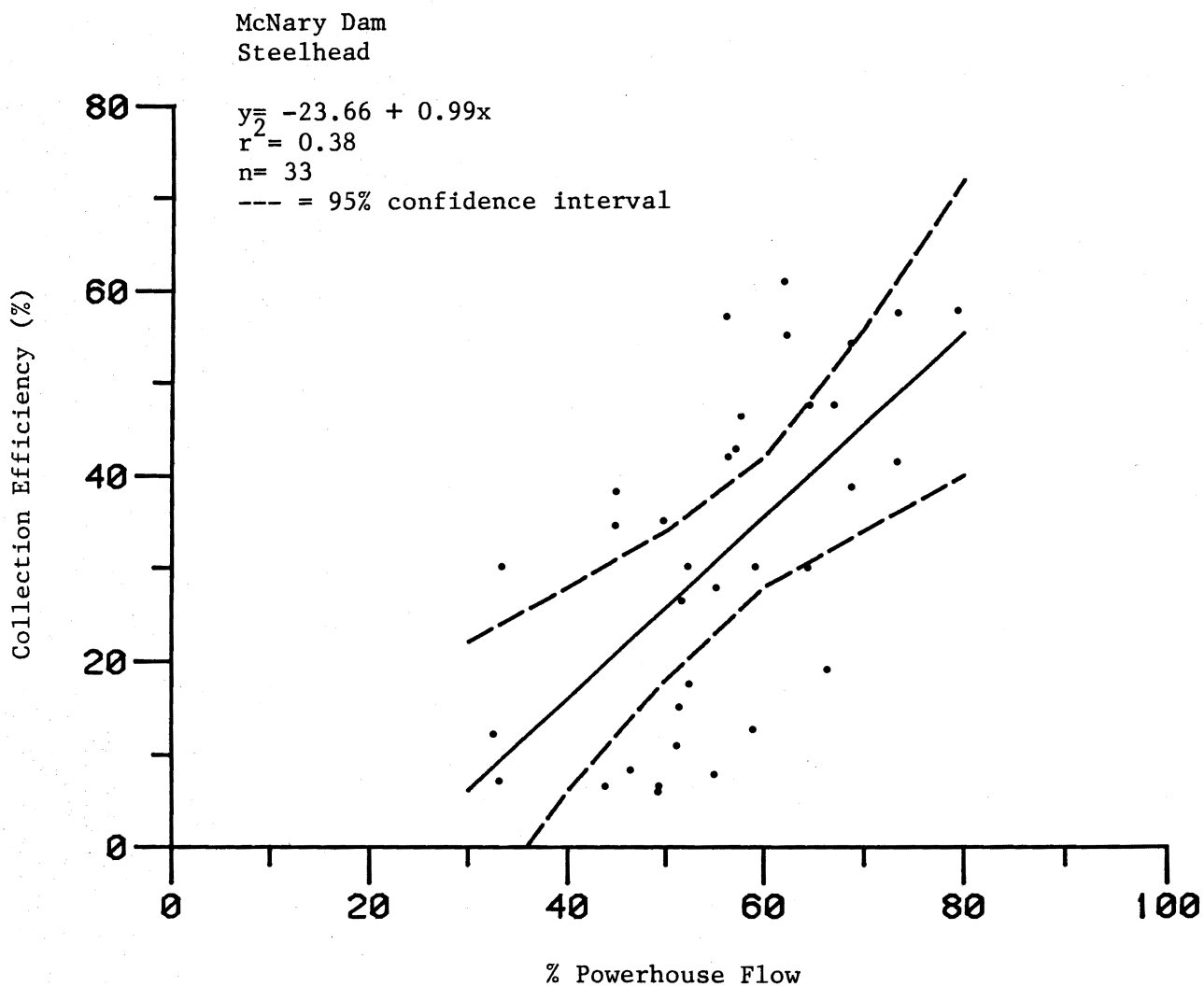


Figure 3.-- Flow / efficiency relationship for steelhead at McNary Dam 1982, 1983. Data are detailed in Appendix J.

M = An assumed post-handling, transport, and reservoir related mortality factor (0.1 for fish captured and marked at McNary Dam and transported upstream for release, 0.2 for fish captured and marked at Lower Granite Dam and transported either up or downstream.[3/]

We truncated the recovery period to the first 3 days during which a specific marked group was recaptured at the dam because: (1) typically, $\geq$80% of the total number of recaptures occurred during this period and (2) by restricting the recovery period, we often avoided having to average powerhouse discharge levels over widely fluctuating discharge conditions. The independent variable (% powerhouse flow) was estimated as the proportion of the total river flow discharged through the powerhouse from 2100 to 0600 h, averaged over the first 3 days of recovery for a specific efficiency brand.

To determine the upper and lower confidence interval (CI) for a given daily estimate of collection efficiency we used the standard error calculated from the formula (Zar 1974):

$$S_{\hat{y}i} = \sqrt{S^2_{yx} \left[\frac{1}{n} + \frac{(Xi-\bar{X})^2}{\Sigma x^2} \right]}$$

We applied the standard error defined above because our objective was to estimate a population parameter rather than the value of a random variable for an individual response, in which case the formula

$$S_{\hat{y}i} = \sqrt{S^2_{yx} \left[1 + \frac{1}{n} = \frac{(Xi-\bar{X})^2}{\Sigma x^2} \right]}$$

would be used.

3/ Since fish marked at Lower Granite Dam were trucked longer distances to the release sites than those at McNary Dam, we apply a larger mortality factor to them. The 10% mortality rate is estimated from delayed mortality data for spring chinook presented by Park et al. (1981, 1983). We know of no data to support the 20% rate.

Alternative Procedure for Estimating Population Size

Not all mark-release and sampling situations lend themselves to regression analysis. When the number of marked lots of efficiency releases is few, or sampling procedures have varied between years precluding the pooling of data, as have been the cases at John Day and Lower Granite Dams, respectively, another form of analysis must be applied.

The NMFS has devised a procedure whereby collection efficiencies estimated under such limiting conditions are adjusted to a standard discharge rate through the sampling unit (100% at Lower Granite and 10% at John Day Dam). For example, if six marked fish were collected on day i at a powerhouse discharge rate of 75% of the total river flow, then at 100% powerhouse discharge rate, eight marked fish would presumably have been taken in the collection system. Such an adjustment is made for the marks collected each day. This is based on the assumption that the number of fish discharged through the powerhouse is proportional to the amount of water passing through it. A mean collection efficiency at the standard flow and the confidence limits for that mean are then calculated for those adjusted estimates. Then, according to our procedure, the mean and confidence limits are projected to the origin based on the following assumptions:

1. With no water entering the sampling unit, there can be no marked fish in the unit, thus the estimated sampling efficiency is zero.

2. The variance is proportional to the flow through the sampling unit resulting in the estimate boundaries approaching zero at the origin (Snedecor and Cochran, 1967; see p. 153).

Figures 4 through 6 illustrate the application of this procedure to data collected at Lower Granite and John Day Dams.

Although the upper and lower boundaries are not, and should not be construed as confidence limits, they do provide tolerance limits around the projected mean estimator line, which considering the small variability around the actual data points from which they were derived, appears consistent and reproducible for several year's data. Henceforth, we will refer to these as the estimate boundaries (E.B.).

Daily population estimates were calculated in the same manner as was done at McNary Dam (Equation 1).

Survival Through the Snake-Columbia River System

An accurate assessment of smolt survival from Lower Granite Dam to John Day Dam was not possible because we did not sample at Little Goose Dam and have no way of determining how many marks were collected and transported. Estimates of overall survival have been made, however, based on assumptions regarding smolt survival at Lower Granite and Little Goose Dams, and through Little Goose pool (see Appendix I). These estimates are presented to provide a relative index of actual survival and have no statistical basis.

Survival estimates for specific sections of the overall Snake-Columbia River system were based either on ratios of actual and expected mark recovery rates at given dams or on estimated numbers of marks arriving at a given dam as determined from flow/efficiency curves. Confidence limits around these estimates were defined by the variance around the mean survival rates of mark release groups (Appendix I).

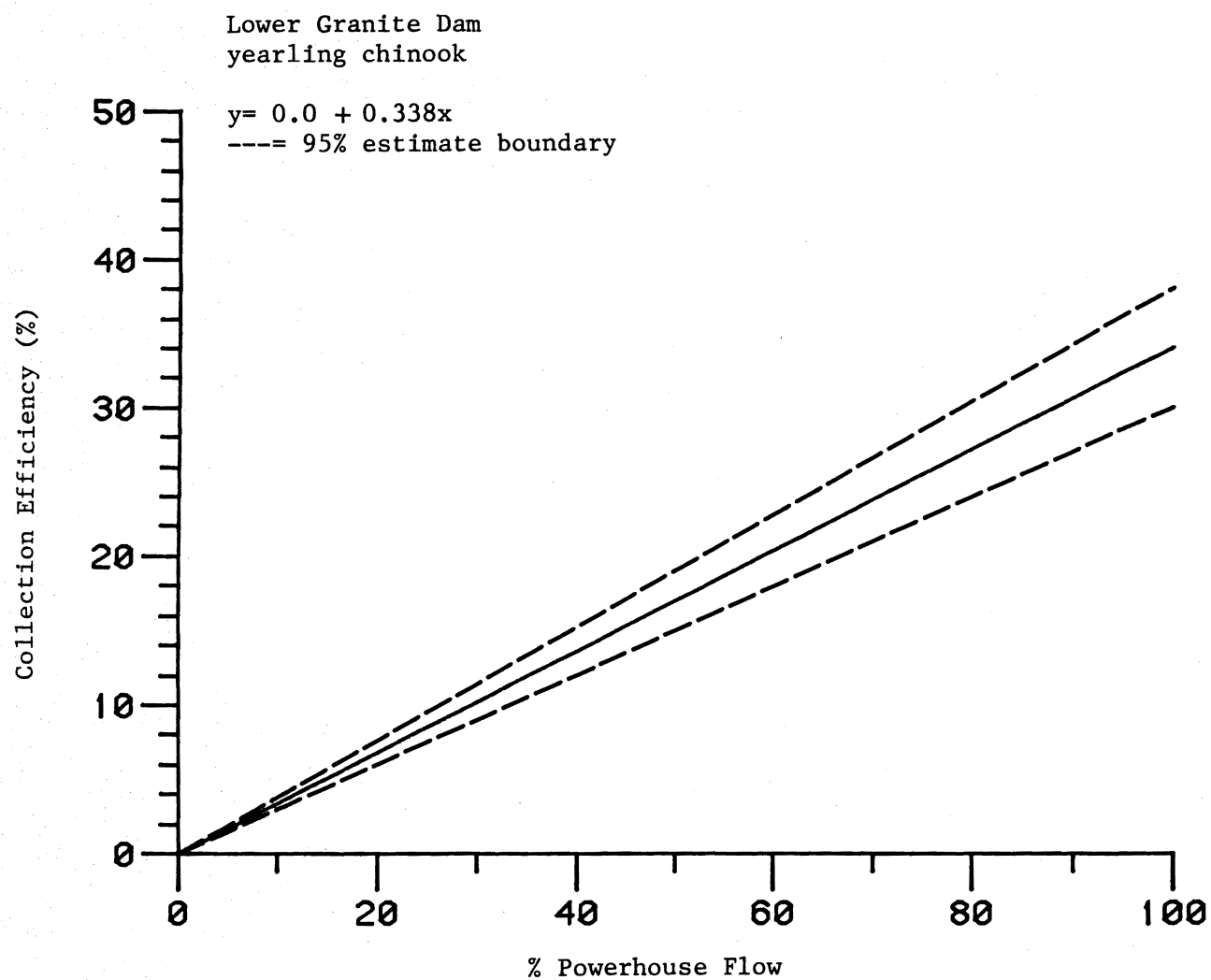


Figure 4.-- Flow/efficiency relationship for yearling chinook salmon at Lower Granite Dam 1983. Data are detailed in Appendix J.

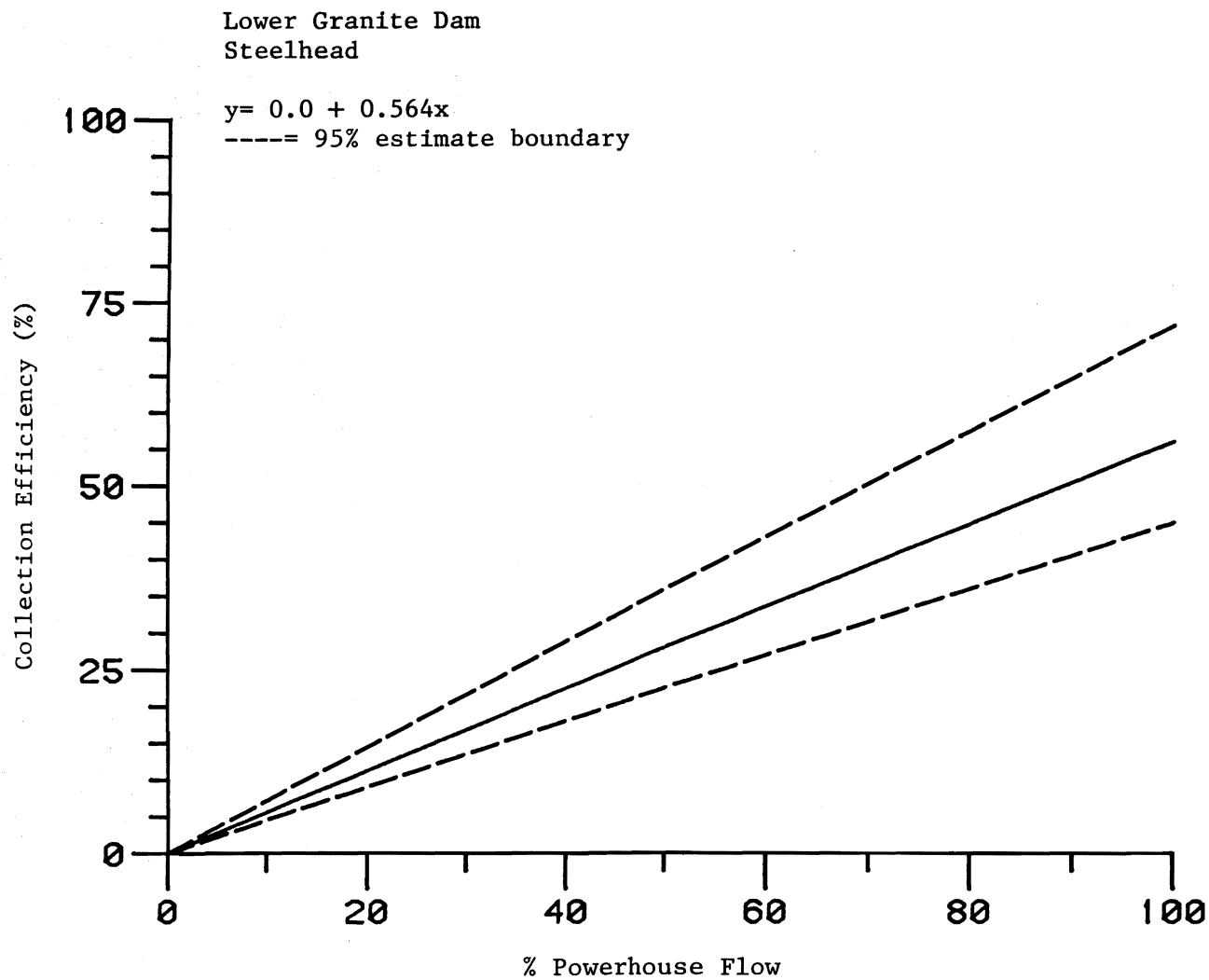


Figure 5.-- Flow/efficiency relationship for steelhead at Lower Granite Dam. Data from 1981 and 1982 are detailed in Appendix J.

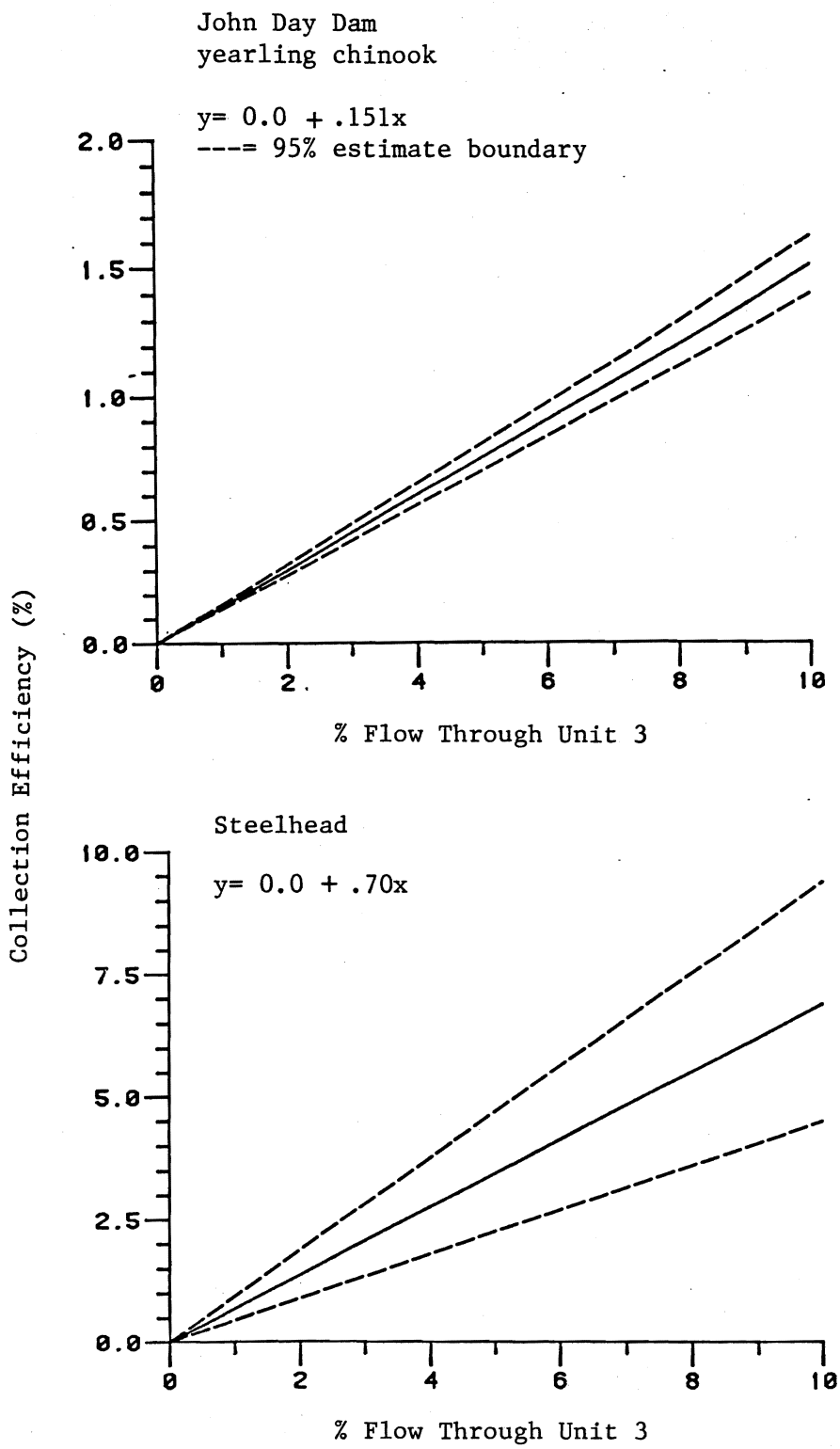


Figure 6.-- Flow/efficiency relationships for yearling chinook salmon and steelhead at John Day Dam, 1978-1981. Data are detailed in Sims et al (1982).

Travel Time

Travel times through specified sections of the Columbia River system were calculated from recoveries of marked fish released above Lower Granite Dam and subsequently recovered at McNary and John Day Dams; the difference between the median release date and the median recovery date provided a general measure of travel time. In addition, a more detailed and precise measure of travel time was calculated. The sampling program at John Day Dam permitted travel time from upriver release sites to be analyzed with hourly resolution, rather than daily. For selected marks, hourly travel time from point of release to John Day Dam was measured for the first 25 percentile of recoveries arriving at the dam. Based on the release site and species, the travel time of each fish was then regressed on the average daily flows detailed as follows:

Release site	Species	Average daily flow
Little Goose tailrace	Steelhead	$\left(\sum_{i=1}^{5} Xi\right) \div 5$
Port Kelly	Steelhead	$\left(\sum_{i=1}^{5} Yi\right) \div 5$
Port Kelly	Yearling chinook	$\left(\sum_{i=1}^{5} Yi\right) \div 5$

where: i = the first day after the release date.

Xi = daily average flow at Ice Harbor Dam on day i.

Yi = daily average flow at McNary dam on day i.

The reason different flow regimes were used for steelhead and yearling chinook salmon is that they migrate at different rates and encounter certain sections of the river for varying lengths of time.

RESULTS AND DISCUSSION

The juvenile salmonid outmigration was monitored and sampled at Lower Granite, McNary, and John Day Dams during 1983. The magnitude of migrations, migrational timing, smolt survival, and travel time were defined, and flow/survival and flow/travel time relationships were examined.

Timing of Migrations

Timing of the 1983 migrations is shown in Figures 7 through 11 and in Table 1. Smolts began to appear at Lower Granite Dam about 1 April, and sampling began on 3 April 1983. The yearling chinook salmon migration peaked on 26 April (Table 1), and by 30 May, 90% of the migration had passed Lower Granite Dam. The steelhead migration at Lower Granite Dam began about 25 April and peaked on 24 May, almost a month later than yearling chinook salmon. Sub-yearling chinook salmon began arriving at Lower Granite Dam in early June and, based on yearling chinook salmon efficiency expansions, peaked on 5 July. Total river flows at Lower Granite Dam during the peak of the yearling chinook salmon migration (median $\pm$ 7 days) averaged 90 kcfs, while spill averaged 23%. Total flow during the peak of the steelhead migration at Lower Granite Dam averaged 136 kcfs, while spill averaged 12%.

Sampling at McNary Dam began on 24 April 1983. The yearling chinook salmon migration began in late April (10th percentile of passage occurred on 28 April), peaked on 8 May, and was 90% over by 20 May. The steelhead migration began about the same time (10th percentile of passage occurred 3 May), peaked on 14 May, and was 90% over by 1 June. Sub-yearling chinook

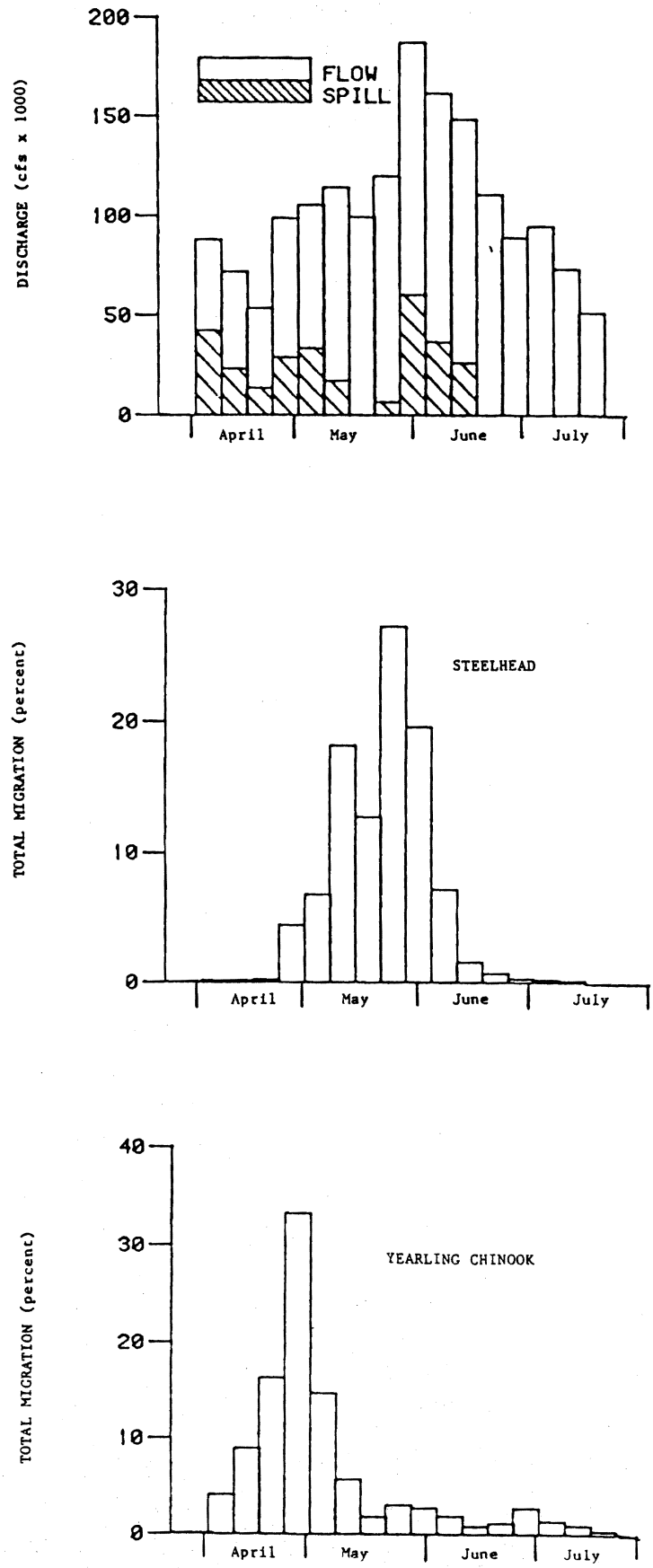


Figure 7.--Migration timing of steelhead and yearling chinook salmon and concomitant river conditions at Lower Granite Dam - 1983.

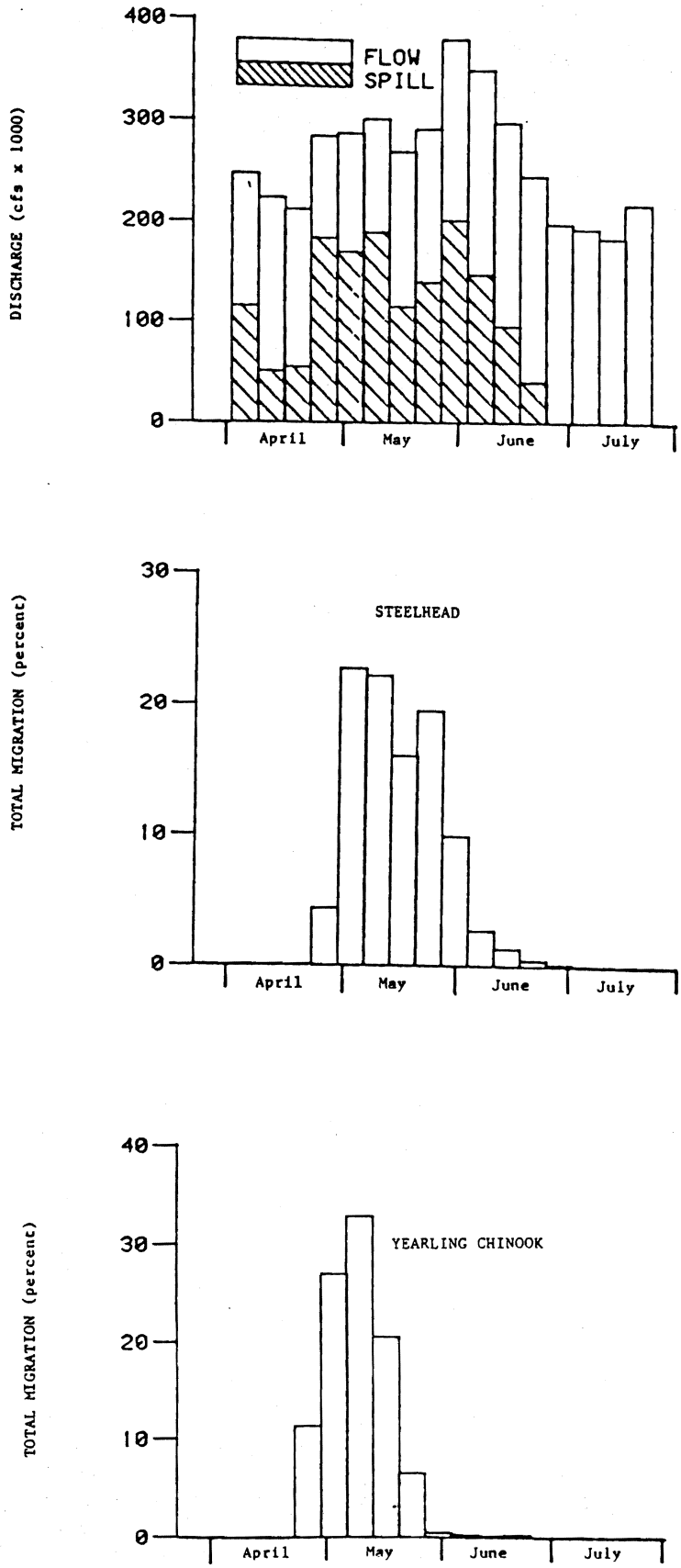


Figure 8.--Migration timing of steelhead and yearling chinook salmon and concomitant river conditions at McNary Dam - 1983.

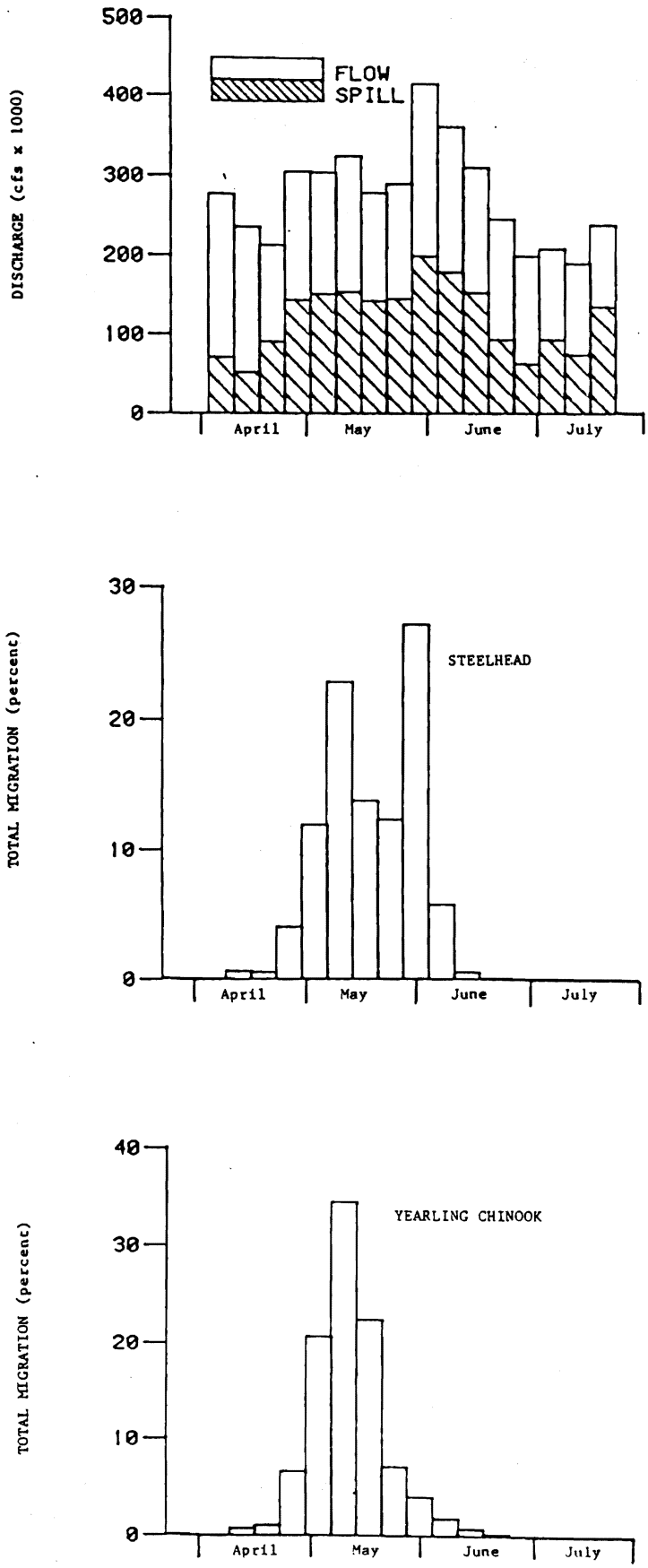
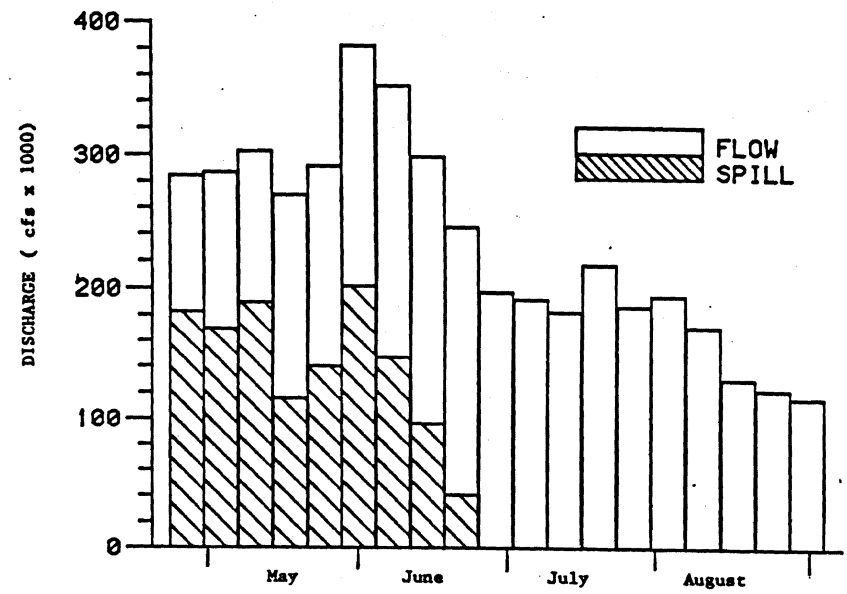


Figure 9.--Migration timing of steelhead and yearling chinook salmon and yearling chinook salmon and concomitant river conditions at John Day Dam - 1983.



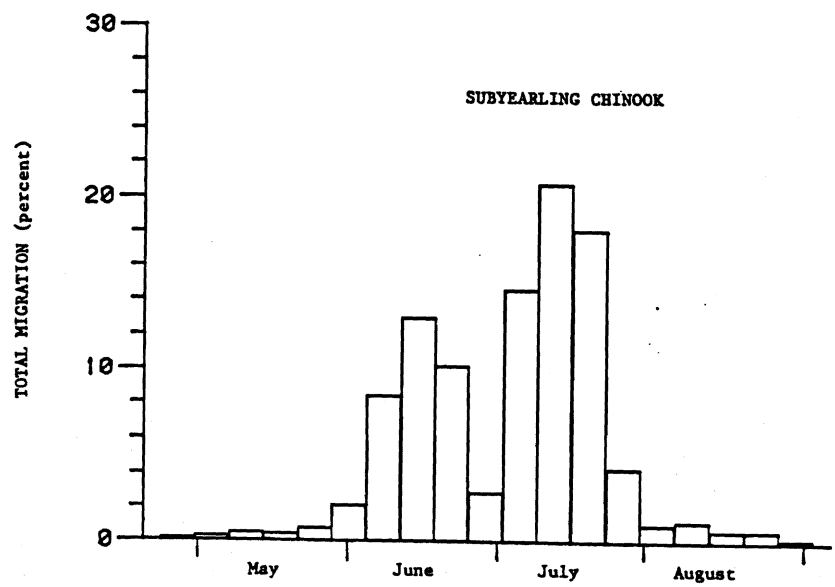


Figure 10.--Migration timing of subyearling chinook salmon and concomitant river conditions at McNary Dam - 1983.

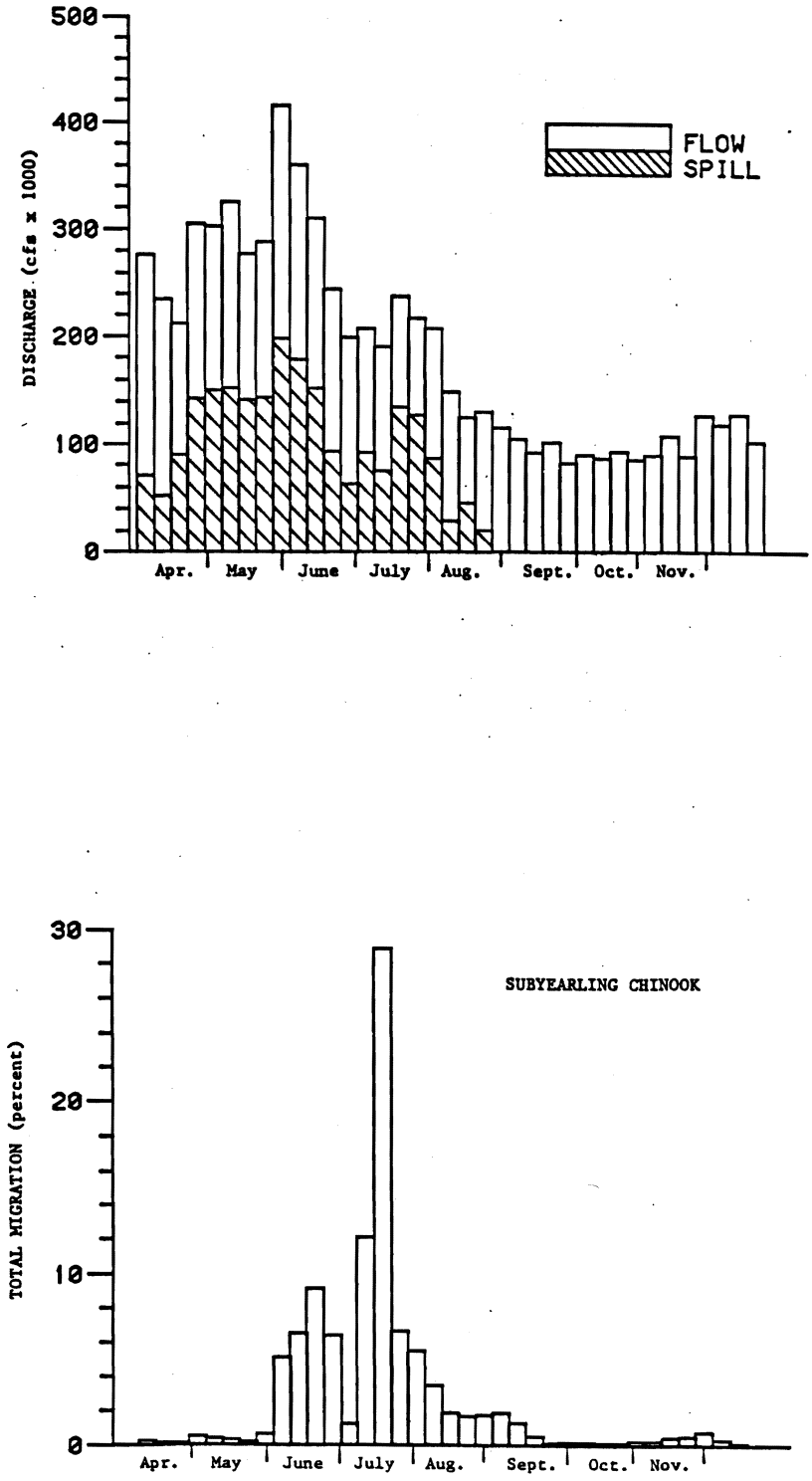


Figure 11.--Migration timing of subyearling chinook salmon and concomitant river conditions at John Day Dam - 1983.

Table 1.--Timing of the 1983 smolt migrations at Lower Granite, McNary, and John Day Dams.

Species and dam	Timing by percentile of migration		
	10	50	90
	(month/day)	(month/day)	(month/day)
Yearling chinook salmon			
Lower Granite Dam	4/13	4/26	5/30
McNary Dam	4/28	5/08	5/20
John Day Dam	5/01	5/10	5/24
Sub-yearling chinook salmon[a]			
Lower Granite Dam	6/30	7/05	7/12
McNary Dam	6/08	7/07	7/20
John Day Dam	6/12	7/16	7/31
Steelhead			
Lower Granite Dam	5/07	5/24	6/04
McNary Dam	5/03	5/14	6/01
John Day Dam	5/03	5/18	6/03

[a] Based on yearling chinook salmon efficiency expansions.

salmon migration began in mid-June and, based on yearling chinook salmon expansions, peaked 7 July and continued through September 1983.

Yearling chinook salmon began passing John Day Dam in early April, 1983 (10th percentile of passage occurred on 30 April); peaked on 10 May; and was 90% complete by 24 May. Steelhead migration at John Day Dam began on 25 April, peaked on 3 May, and was 90% complete by 18 May. Sub-yearling chinook salmon began to pass John Day Dam in late June and based on yearling chinook salmon expansions, peaked on 17 July and continued through mid-September.

Magnitude and Survival

Population and survival estimates of yearling chinook salmon and steelhead arriving at Lower Granite, McNary, and John Day Dams are shown in Table 2. Approximately 3.8 million yearling chinook salmon and 2.9 million steelhead are estimated to have arrived at Lower Granite Dam in 1983. This compares to 2.1 million yearling chinook salmon and 4.3 million steelhead in 1982. Approximately 1.0 million yearling chinook salmon (26% of the Snake River migration) and 2.0 million steelhead (69% of the Snake River migration) were collected at Lower Granite and Little Goose Dams and transported downstream.

Approximately 3.8 million yearling chinook salmon and 1.7 million steelhead were estimated to have arrived at McNary Dam in 1983. Confidence intervals of 95% are estimated[4/] to be 3.0 to 5.3 and 1.2 to 2.0

4/ See Appendix K for confidence interval estimation procedure.

Table 2.--Estimated smolt migrations (millions of fish) and survival at Lower Granite, McNary, and John Day Dams in 1983.

Location	Population estimate	
	yearling chinook	steelhead
	(M fish)	(M fish)
Lower Granite Dam	3.8	2.9
Transported L. Granite & L. Goose Dams	1.0	2.0
McNary Dam	3.8	1.7
Transported McNary Dam	0.017	0.055
John Day Dam	3.3	2.2

Area	Survival	
	yearling chinook	steelhead
	(%)	(%)
Lower Granite Dam to McNary Dam	69	57
McNary Dam to John Day Dam	90	84
Lower Granite Dam to John Day Dam	62	48

million, respectively. Only 10,000 yearling chinook salmon and 55,000 steelhead were collected and transported.

Survival of non-transported yearling chinook salmon smolts from Lower Granite Dam to John Day Dam was estimated at 62% in 1983; the best survival we have observed since the completion of the lower Snake River dams. Steelhead survival from Lower Granite Dam to John Day Dam was estimated at 48% in 1983; the highest survival we have estimated since 1968.

Flow/Survival Relationships

Research was conducted in 1982 and 1983 to determine if between-year flow/survival relationships could be further developed for salmonid smolts in sections of the Snake and Columbia Rivers. Analysis of the results indicated that the variance around our survival estimates was too great to permit adequate definition of between-year flow/survival relationships. We will make no further efforts in this area until the precision of our existing collection efficiency curves are substantially upgraded.

Flow/Travel Time Relationships

Travel time from Lower Granite Dam to John Day Dam was measured at 10 days for both yearling chinook salmon and steelhead in 1983 (Table 3). Flows in the Snake River during the period of peak yearling chinook salmon migration averaged about 109 kcfs, slightly higher than the 10-year average of 100 kcfs. Snake River flows during the peak of steelhead migration were considerably higher (165 kcfs).

Branded steelhead were released below Little Goose Dam and above McNary Dam (Port Kelly) in both 1982 and 1983 (Table 4). The purpose of these releases was to determine if a relationship between within-year river

Table 3.--Average river flows and average travel time from Lower Granite Dam to John Day Dam for yearling chinook salmon and steelhead smolts, 1973-83.

	Average river flow at Ice Harbor Dam (kcfs)[a]		Average river flow at John Day Dam (kcfs)[a]		Average travel time (days)	
Year	Chinook	Steelhead	Chinook	Steelhead	Chinook	Steelhead
1973	71	68	150	146	22	20
1974	158	103	351	317	12	14
1975	140	136	344	344	12	10
1976	110	167	363	339	15	17
1977	40	40	125	119	36	37
1978	106	106	268	273	11	10
1979	85	89	255	255	13	13
1980	110	99	261	249	12	10
1981	94	89	219	226	12	15
1982	120	126	360	385	14	9
1983	109	165	311	292	10	10

[a] At migration peak ± 7 days.

Table 4.--Rate of downstream movement and levels of river flow for branded groups of steelhead released into the Snake River[a] and Columbia River[b] in 1982 and 1983.

	Snake River			Columbia River	
Group brand 1982	Rate of downstream movement[c] (km/day)	Flow[d] (kcfs)	Group brand 1982	Rate of downstream movement (km/day)	Flow[e] (kcfs)
LA21	30.2	122	LA1S1	31.9	267
RA21	32.5	120	RA1S1	31.2	267
LA22	32.5	124	LA1S2	37.7	303
RA22	38.2	120	RA1S2	37.7	303
LA23	39.1	112	LA1S3	39.0	309
RA23	39.0	121	RA1S3	39.0	309
LA24	42.0	147	LA1S4	39.0	354
RA24	46.7	173	RA1S4	39.0	354
			LP1S1	39.0	379
			RP1S1	39.0	379
1983					
RA3L1	35.0	112	1983		
LA3L1	34.3	111			
RD3L1	34.3	106	LA3J1	35.5	273
RA3L2	30.8	97	RA3J1	39.0	273
LA3L2	33.6	95			
RD3L2	35.1	96	LA3J2	33.2	257
RA3L3	42.0	136			
LA3L3	42.0	156	RA3J2	31.2	256
RD3L3	38.2	187			
RD3L3	56.0	188	LA3J3	52.0	387
LA3L4	56.0	182	RA3J3	47.3	387
Rd3L4	52.5	171	LA3J4	45.9	340
LD3L4	56.0	166	RA3J4	43.3	340

a/ Little Goose tailrace to McNary Dam.

b/ Port Kelly to John Day Dam.

c/ Based on average of first 25% of recoveries.

d/ Average daily flow at Ice Harbor Dam for 3-day period following mark release.

e/ Average daily flow at McNary Dam for 3-day period following mark release.

flows and the rate of downstream smolt movement could be substantiated in the Snake River (between Little Goose Dam and McNary Dam) or the mainstream Columbia (between Port Kelly and John Day Dam).

The 1982 and 1983 data have been combined (the slopes of the two regressions for both areas were not significantly different at the $\alpha = 0.05$ level) and are shown in Figures 12 and 13. The correlation coefficients $R = 0.82$ (0.78 - 0.86 95% C.I.) and $R = 0.79$ (0.73 - 0.85 95% C.I.) both test significant at the $P = 0.05$ level and indicate a relatively strong correlation between within-year river flow and the rate of downstream movement of steelhead smolts in both areas examined.

Based on the regression lines developed, we can calculate the effects of increasing or decreasing flows on the rate of downstream movement of steelhead (within the range of flows included in our data base, i.e., 90 to 190 kcfs in the Snake River and 150 to 500 kcfs in the Columbia River). A change of 4.6 kcfs in the Snake River between Little Goose and McNary Dams and 11.1 kcfs in the Columbia River between Port Kelly and John Day Dam would result in a change of 1 km/day in the rate of downstream movement.

SUMMARY

The NMFS monitored the downstream migrations of juvenile salmon and steelhead at Lower Granite, McNary, and John Day Dams in 1983. The timing of migrations, smolt abundance, survival, and travel time were defined. Results of the 1983 research are summarized as follows:

1. During 1983, the yearling chinook migration peaked at Lower Granite, McNary, and John Day Dams on 26 April, 8 May, and 10 May, respectively. Steelhead peaked on 24, 14, and 3 May, respectively.

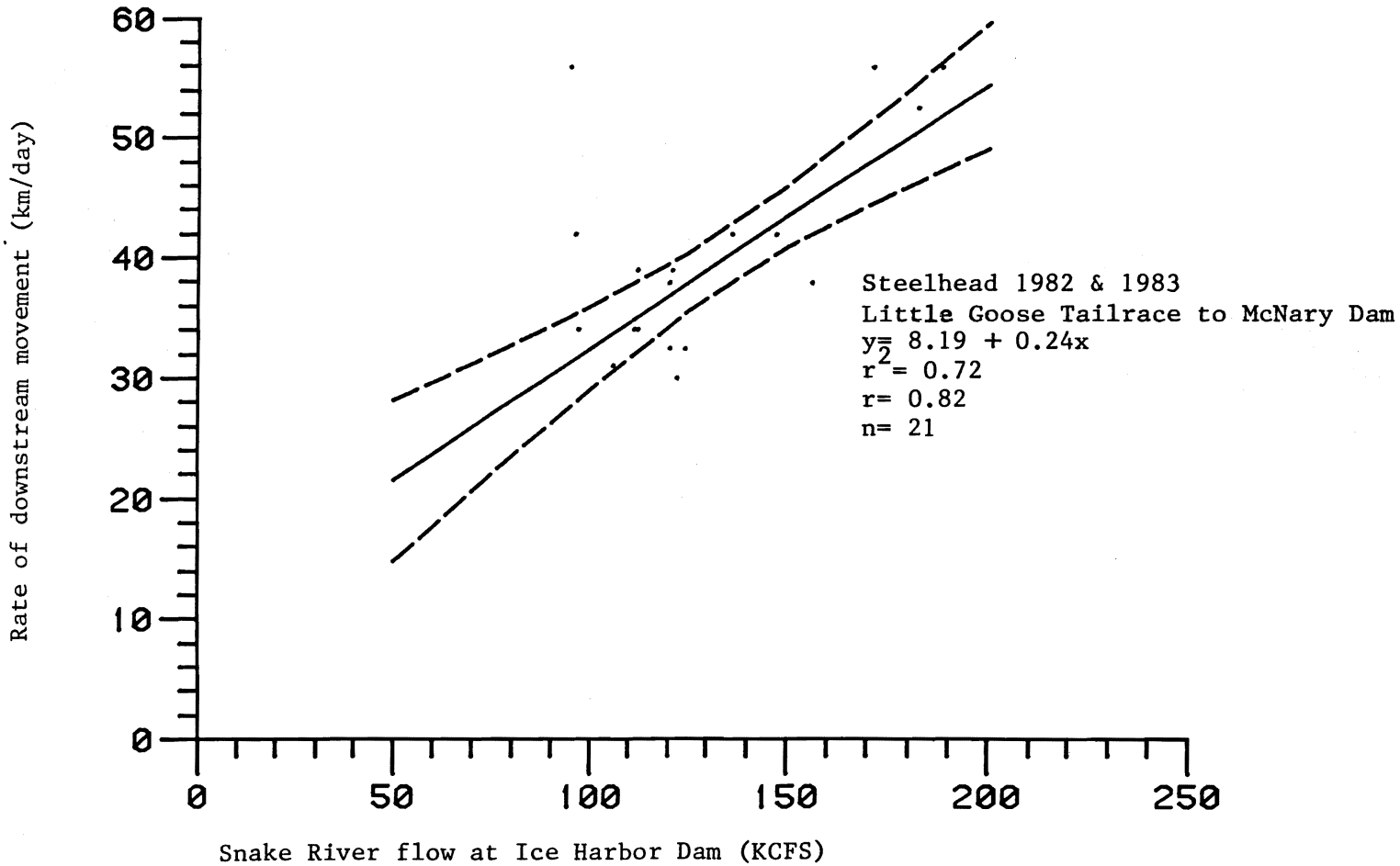


Figure 12.-- Rate of downstream movement of steelhead relative to Snake River flows.

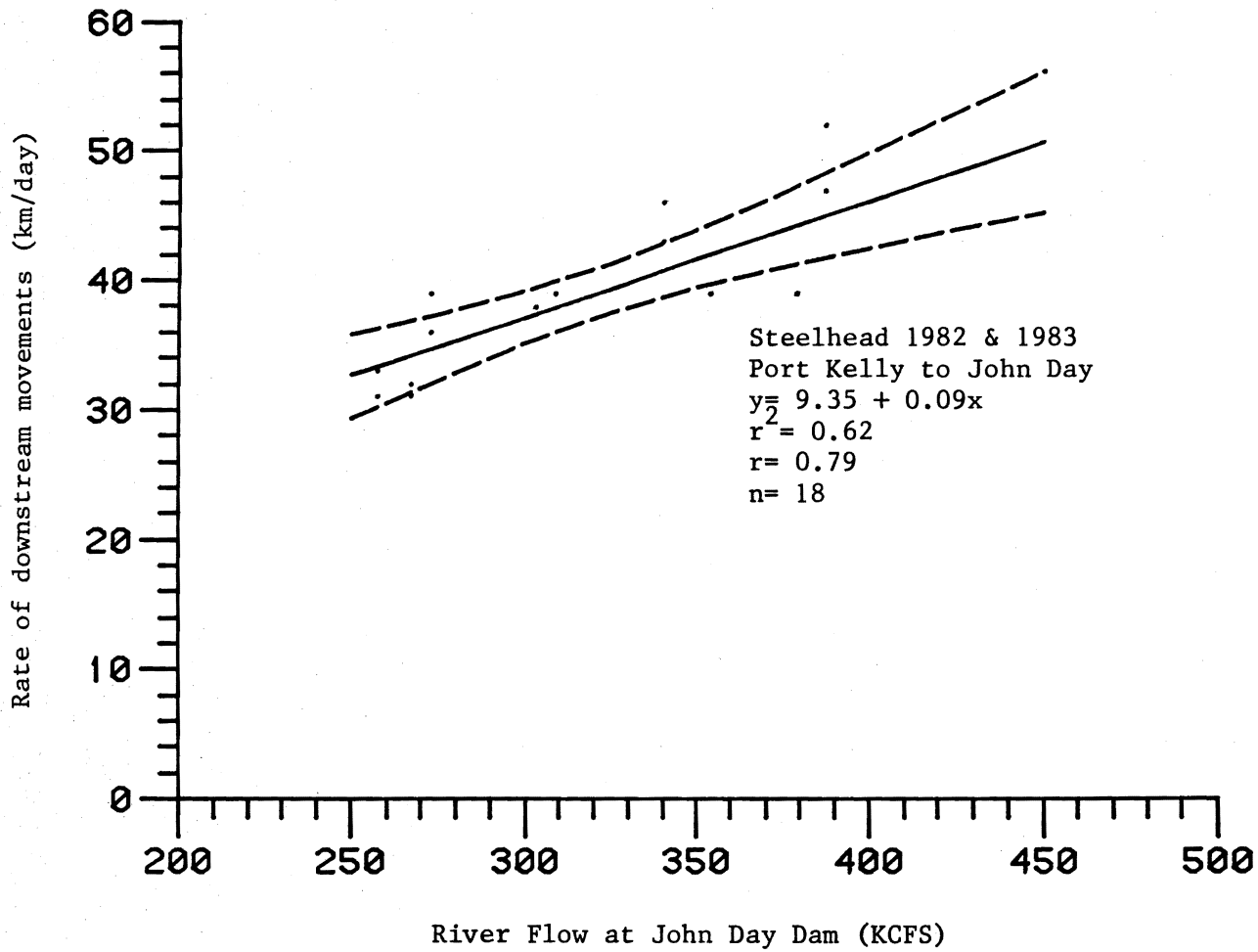


Figure 13.-- Rate of downstream movement of steelhead relative to Columbia River flows.

2. 1983 population estimates for yearling chinook salmon at Lower Granite, McNary, and John Dam Dams were 3.8, 3.8, and 3.3 million, respectively. Steelhead populations were estimated at 2.9, 1.7, and 2.2. million, respectively.

3. Survival of yearling chinook salmon and steelhead from Lower Granite Dam to John Day Dam was estimated at 62 and 48%, respectively.

4. Efforts to provide additional definition for between-year flow/survival relationships were not successful.

5. Travel time from Lower Granite Dam to John Day Dam in 1983 was measured at 10 days for both yearling chinook salmon and steelhead.

6. Within-year flow/travel time regressions have been developed for steelhead based on 1982 and 1983 data. Based on these regressions, we would estimate that changes of 4.6 kcfs in the Snake River and 11.1 kcfs in the Columbia River (between McNary and John Day Dams) would be required to change the rate of downstream movement of steelhead by 1 km/day.

LITERATURE CITED

Basham, L. R., M. R. Alarm, S. W. Pettit, J. B. Athearn, and 2Lt. J. V. Barker.
1983. Fish transportation oversight team annual report - FY 1982 transport operations on the Snake and Columbia Rivers. NOAA Tech. Memor. NMFS/F/NWR5. 34 p.

Park, D. L., J. R. Harmon, B. H. Monk, T. E. Ruehle, T. W. Newcomb, L. R. Basham, and T. A. Flagg.
1981. Transportation research on the Columbia and Snake Rivers, 1980. Natl. Mar. Fish. Serv., Report to U.S. Army Corps of Engineers, October 1981 (Contract DACW68-78-C-0051). 45 p. plus Appendix.

Park, D. L., G. M. Matthews, T. E. Ruehle, J. R. Smith, J. R. Harmon, B. H. Monk, and S. Achord.
1983. Evaluation of transportation and related research on Columbia and Snake Rivers, 1982. Natl. Mar. Fish. Serv., Report to U. S. Army Corps of Engineers, February 1983 (Contract DACW68-78-C-0051). 47 p. plus Appendix.

Sims, C. W., R. C. Johnsen, and D. A. Brege.
1982. Migrational characteristics of juvenile salmon and steelhead trout in the Columbia River system - 1981, Vol. 1 Assessment of the 1981 smolt migration. Natl. Mar. Fish. Serv., Report to U.S. Army Corps of Engineers, April 1982 (Contracts DACW68-78-C-0051 and DACW57-81-F-0342). 16 p. plus Appendixes.

Snedecor, G. W. and W. G. Cochran.
1967. Statistical Methods. 5th Edition. Iowa State University Press, Ames, Iowa. 534 p.

Zar, J. H.
1974. Biostatistical Analysis. Prentice-Hall Inc., New Jersey. 602 p.

APPENDIX A

Daily Catch and Passage Estimate Summary, Lower Granite Dam

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

SOCKEYE LOWER GRANITE DAM DATE OF REPORT: 2/29/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830403	43.05		2	6	
830404	47.29		0	8	
830405	40.44		0	0	
830406	41.65				
830407	64.19		1	10	
830408	78.34		2	40	
830409	100.00		5	100	
830410	62.33		1	20	
830411	69.37		0	0	
830412	67.11		0	0	
830413	60.09		0	0	
830414	61.59		0	0	
830415	57.78		0	0	
830416	62.13		0	0	
830417	63.14		1	4	
830418	59.68		2	8	
830419	81.66		1	4	
830420	81.67		0	0	
830421	88.38		3	16	
830422	88.02		0	0	
830423	81.56		2	9	
830424	79.62		0	0	
830425	80.33		3	14	
830426	78.58		1	10	
830427	60.09		0	0	
830428	59.87		1	8	
830429	59.14		1	7	
830430	59.34		1	7	
830501	64.38		0	0	
830502	65.56		0	0	
830503	72.33		2	8	
830504	74.69		1	4	
830505	73.42		3	12	
830506	66.55		4	15	
830507	65.80		1	7	
830508	69.72				
830509	80.67		3	20	
830510	86.23		2	14	
830511	95.94		2	20	
830512	100.00		0	0	
830513	100.00		2	14	
830514	100.00		2	20	
830515	100.00				
830516	100.00		5	50	
830517	100.00		0	0	
830518	100.00		2	10	
830519	100.00		7	35	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830520	100.00		3	20	
830521	100.00		6	41	
830522	100.00				
830523	100.00		8	54	
830524	100.00		11	110	
830525	100.00		16	109	
830526	88.34		19	380	
830527	79.87		17	332	
830528	69.81		9	300	
830529	65.44				
830530	66.04		23	767	
830531	64.94		21	105	
830601	66.72		36	180	
830602	70.92		35	175	
830603	70.66				
830604	74.97		132	660	
830605	75.25				
830606	77.71		24	800	
830607	82.60		4	133	
830608	77.63		3	100	
830609	75.50		5	83	
830610	77.16		3	50	
830611	71.86		4	67	
830612	74.98		3	50	
830613	77.16		0	0	
830614	83.19		1	17	
830615	87.15		2	33	
830616	89.95		4	40	
830617	96.51		3	30	
830618	100.00		3	36	
830619	100.00		0	0	
830620	100.00		0	0	
830621	100.00		1	10	
830622	100.00		1	10	
830623	100.00		0	0	
830624	100.00		3	32	
830625	100.00		1	10	
830626	100.00		2	19	
830627	100.00		2	20	
830628	100.00		3	30	
	TOTALS		471	5,295	

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

COHO LOWER GRANITE DAM DATE OF REPORT: 2/29/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830403	43.05		1	3	
830404	47.29		0	0	
830405	40.44		0	0	
830406	41.65				
830407	64.19		0	0	
830408	78.34		0	0	
830409	100.00		0	0	
830410	62.33		0	0	
830411	69.37		0	0	
830412	67.11		0	0	
830413	60.09		0	0	
830414	61.59		0	0	
830415	57.78		0	0	
830416	62.13		0	0	
830417	63.14		0	0	
830418	59.68		0	0	
830419	81.66		0	0	
830420	81.67		0	0	
830421	88.38		0	0	
830422	88.02		0	0	
830423	81.56		0	0	
830424	79.62		0	0	
830425	80.33		0	0	
830426	78.58		0	0	
830427	60.09		0	0	
830428	59.87		0	0	
830429	59.14		0	0	
830430	59.34		0	0	
830501	64.38		0	0	
830502	65.56		0	0	
830503	72.33		0	0	
830504	74.69		0	0	
830505	73.42		0	0	
830506	66.55		0	0	
830507	65.80		0	0	
830508	69.72				
830509	80.67		0	0	
830510	86.23		0	0	
830511	95.94		0	0	
830512	100.00		0	0	
830513	100.00		0	0	
830514	100.00		0	0	
830515	100.00				
830516	100.00		0	0	
830517	100.00		0	0	
830518	100.00		0	0	
830519	100.00		0	0	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830520	100.00		0	0	
830521	100.00		0	0	
830522	100.00				
830523	100.00		0	0	
830524	100.00		0	0	
830525	100.00		0	0	
830526	88.34		0	0	
830527	79.87		0	0	
830528	69.81		0	0	
830529	65.44				
830530	66.04		0	0	
830531	64.94		0	0	
830601	66.72		0	0	
830602	70.92		1	5	
	TOTALS		2	8	

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

CHINOOK 1'S LOWER GRANITE DAM DATE OF REPORT: 2/29/84

EFFICIENCY = 0.000 + 0.338(FLOW) WHEN FLOW < 45.0%
EFFICIENCY = 0.000 + 0.338(FLOW) WHEN FLOW >= 45.0%

DATE		TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE	
830403		43.05	14.55 %	837	2,400	16,491	
830404		47.29	15.98	462	4,620	28,904	
830405		40.44	13.67	173	1,730	12,657	
830406		41.65					
830407	2	64.19	17.89	1,463	14,630	81,791	
830408		78.34	26.48	445	8,900	33,612	
830409		100.00	33.80	562	11,240	33,254	
830410		62.33	21.07	533	10,660	50,599	
830411		69.37	23.45	368	7,360	31,390	
830412		67.11	22.68	683	13,660	60,221	
830413		60.09	20.31	530	10,600	52,190	-10%
830414		61.59	20.82	3,208	11,665	56,035	
830415		57.78	19.53	3,529	13,785	70,584	
830416		62.13	21.00	4,148	16,592	79,010	
830417		63.14	21.34	3,693	14,772	69,218	
830418		59.68	20.17	3,418	13,351	66,188	
830419		81.66	27.60	6,299	24,227	87,774	
830420		81.67	27.60	4,776	21,040	76,218	
830421		88.38	29.87	7,544	39,705	132,915	
830422		88.02	29.75	5,102	26,853	90,259	
830423		81.56	27.57	9,375	40,757	147,844	
830424		79.62	26.91	9,965	49,089	182,408	
830425		80.33	27.15	14,234	67,781	249,640	
830426		78.58	26.56	5,795	57,956	218,185	-50%
830427		60.09	20.31	4,690	39,083	192,430	
830428		59.87	20.24	3,910	32,583	161,015	
830429		59.14	19.99	3,408	23,183	115,979	
830430		59.34	20.06	2,992	20,354	101,479	
830501		64.38	21.76	2,997	20,388	93,693	
830502		65.56	22.16	2,980	20,272	91,484	
830503		72.33	24.45	4,803	18,473	75,562	
830504		74.69	25.25	4,776	18,370	72,764	
830505		73.42	24.82	4,416	16,984	68,442	
830506		66.55	22.49	4,019	15,458	68,719	
830507		65.80	22.24	2,086	14,191	63,805	
830508		69.72					
830509	2	80.67	25.42	2,398	16,313	64,184	
830510		86.23	29.15	782	5,320	18,252	
830511		95.94	32.43	1,056	10,560	32,565	
830512		100.00	33.80	689	4,687	13,867	
830513		100.00	33.80	845	5,748	17,007	
830514		100.00	33.80	283	2,830	8,373	
830515		100.00					
830516	2	100.00	33.80	670	6,700	19,822	
830517		100.00	33.80	410	2,789	8,252	
830518		100.00	33.80	562	2,810	8,314	
830519		100.00	33.80	516	2,580	7,633	

DATE		TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE	
830520		100.00	33.80 %	394	2,680	7,930	
830521		100.00	33.80	348	2,367	7,004	
830522		100.00					
830523	2	100.00	33.80	788	5,361	15,860	
830524		100.00	33.80	545	5,450	16,124	
830525		100.00	33.80	797	5,454	16,135	
830526		88.34	29.86	354	7,080	23,712	
830527		79.87	27.00	353	6,899	25,556	
830528		69.81	23.60	250	8,333	35,317	
830529		65.44					
830530	2	66.04	22.22	318	10,600	47,704	-90%
830531		64.94	21.95	242	1,210	5,513	
830601		66.72	22.55	416	2,080	9,223	
830602		70.92	23.97	440	2,200	9,178	
830603		70.66					
830604	2	74.97	24.61	1,282	6,410	25,045	
830605		75.25					
830606	2	77.71	25.85	168	5,600	21,663	
830607		82.60	27.92	39	1,300	4,656	
830608		77.63	26.24	75	2,500	9,528	
830609		75.50	25.52	59	983	3,854	
830610		77.16	26.08	66	1,100	4,218	
830611		71.86	24.29	103	1,717	7,068	
830612		74.98	25.34	81	1,350	5,327	
830613		77.16	26.08	66	1,100	4,217	
830614		83.19	28.12	54	900	3,201	
830615		87.15	29.46	60	1,000	3,394	
830616		89.95	30.40	117	1,170	3,848	
830617		96.51	32.62	138	1,380	4,230	
830618		100.00	33.80	148	1,769	5,235	
830619		100.00	33.80	192	2,247	6,649	
830620		100.00	33.80	187	2,277	6,737	
830621		100.00	33.80	115	1,150	3,402	
830622		100.00	33.80	180	1,800	5,325	
830623		100.00	33.80	175	1,750	5,178	
830624		100.00	33.80	215	2,295	6,789	
830625		100.00	33.80	230	2,239	6,625	
830626		100.00	33.80	177	1,677	4,963	
830627		100.00	33.80	283	2,874	8,504	
830628		100.00	33.80	524	5,240	15,50[illegible]	
830629		100.00	33.80	469	12,182	36,040	
830630		100.00	33.80	58	2,900	8,580	
830701		100.00	33.80	118	3,933	11,637	
830702		100.00	33.80	76	2,533	7,495	
830703		100.00					
830704	2	100.00	33.80	148	7,400	21,893	
830705		100.00	33.80	35	1,750	5,178	
830706		100.00	33.80	23	1,150	3,402	
830707		100.00	33.80	27	1,350	3,994	
830708		100.00	33.80	22	1,100	3,254	
830709		100.00					
830710	2	100.00	33.80	96	4,800	14,201	
830711		100.00					
830712	2	100.00	33.80	59	2,950	8,728	
830713		100.00					

DATE		TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830714	2	100.00	33.80 %	56	1,867	5,523
830715		100.00	33.80	17	567	1,676
830716		100.00	33.80	35	700	2,071
830717		100.00				
830718	2	100.00	33.80	56	1,120	3,314
830719		100.00				
830720	2	100.00	33.80	74	1,369	4,050
830721		100.00				
830722	2	100.00	33.80	122	1,307	3,866
830723		100.00				
830724	2	100.00	33.80	101	952	2,816
830725		100.00	33.80	59	576	1,703
830726		100.00	33.80	85	878	2,596
830727		100.00	33.80	68	671	1,984
830728		100.00	33.80	32	307	907
830729		100.00				
830730	2	100.00	33.80	74	726	2,148
		TOTALS		148,319	947,673	3,783,499

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

STEELHEAD LOWER GRANITE DAM DATE OF REPORT: 2/29/84

EFFICIENCY = 0.000 + 0.564(FLOW) WHEN FLOW < 45.0%
EFFICIENCY = 0.000 + 0.564(FLOW) WHEN FLOW >= 45.0%

DATE		TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE	
830403		43.05	24.28 %	76	218	897	
830404		47.29	26.67	48	480	1,800	
830405		40.44	22.81	6	60	263	
830406		41.65					
830407	2	64.19	29.85	29	290	972	
830408		78.34	44.18	9	180	407	
830409		100.00	56.40	28	560	993	
830410		62.33	35.15	6	120	341	
830411		69.37	39.12	2	40	102	
830412		67.11	37.85	15	300	793	
830413		60.09	33.89	6	120	354	
830414		61.59	34.74	99	360	1,036	
830415		57.78	32.59	62	242	743	
830416		62.13	35.04	33	132	377	
830417		63.14	35.61	45	180	505	
830418		59.68	33.66	97	379	1,126	
830419		81.66	46.06	139	535	1,161	
830420		81.67	46.06	112	493	1,071	
830421		88.38	49.85	183	963	1,932	
830422		88.02	49.64	99	521	1,050	
830423		81.56	46.00	243	1,056	2,297	
830424		79.62	44.91	403	1,985	4,421	
830425		80.33	45.31	997	4,748	10,479	
830426		78.58	44.32	583	5,830	13,155	
830427		60.09	33.89	1,028	8,567	25,277	
830428		59.87	33.77	1,424	11,867	35,143	
830429		59.14	33.35	1,329	9,041	27,105	
830430		59.34	33.47	1,441	9,803	29,290	
830501		64.38	36.31	1,232	8,381	23,082	
830502		65.56	36.98	1,243	8,456	22,868	
830503		72.33	40.79	2,480	9,538	23,382	
830504		74.69	42.13	3,065	11,789	27,985	
830505		73.42	41.41	3,119	11,996	28,970	
830506		66.55	37.53	3,085	11,865	31,612	-10%
830507		65.80	37.11	3,408	23,184	62,471	
830508		69.72					
830509	2	80.67	42.41	9,797	66,647	157,148	
830510		86.23	48.63	3,726	25,347	52,118	
830511		95.94	54.11	7,548	75,480	139,493	
830512		100.00	56.40	4,734	32,204	57,099	
830513		100.00	56.40	6,395	43,503	77,133	
830514		100.00	56.40	1,736	17,360	30,780	
830515		100.00					
830516	2	100.00	56.40	5,648	56,480	100,142	
830517		100.00	56.40	4,196	28,544	50,610	
830518		100.00	56.40	6,485	32,425	57,491	
830519		100.00	56.40	8,941	44,705	79,264	

DATE		TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE	
830520		100.00	56.40 %	6,664	45,333	80,378	
830521		100.00	56.40	4,946	33,646	59,656	
830522		100.00					
830523	2	100.00	56.40	11,711	79,667	141,254	
830524		100.00	56.40	5,507	55,070	97,642	-50%
830525		100.00	56.40	9,782	66,937	118,682	
830526		88.34	49.82	3,953	79,060	158,679	
830527		79.87	45.05	5,960	116,483	258,582	
830528		69.81	39.37	1,939	64,634	164,158	
830529		65.44					
830530	2	66.04	37.08	3,017	100,566	271,234	
830531		64.94	36.63	2,010	10,050	27,439	
830601		66.72	37.63	2,965	14,825	39,397	
830602		70.92	40.00	3,135	15,675	39,189	
830603		70.66					
830604	2	74.97	41.07	5,395	26,975	65,684	-90%
830605		75.25					
830606	2	77.71	43.13	1,028	34,267	79,442	
830607		82.60	46.59	196	6,533	14,024	
830608		77.63	43.78	289	9,633	22,002	
830609		75.50	42.58	267	4,450	10,451	
830610		77.16	43.52	393	6,550	15,051	
830611		71.86	40.53	268	4,467	11,021	
830612		74.98	42.29	220	3,667	8,671	
830613		77.16	43.52	227	3,783	8,693	
830614		83.19	46.92	190	3,166	6,749	
830615		87.15	49.15	141	2,350	4,781	
830616		89.95	50.73	176	1,760	3,469	
830617		96.51	54.43	188	1,880	3,454	
830618		100.00	56.40	141	1,686	2,989	
830619		100.00	56.40	160	1,873	3,320	
830620		100.00	56.40	162	1,973	3,498	
830621		100.00	56.40	222	2,220	3,936	
830622		100.00	56.40	195	1,950	3,457	
830623		100.00	56.40	146	1,460	2,589	
830624		100.00	56.40	105	1,121	1,987	
830625		100.00	56.40	105	1,022	1,812	
830626		100.00	56.40	84	796	1,411	
830627		100.00	56.40	70	711	1,261	
830628		100.00	56.40	75	750	1,330	
830629		100.00	56.40	47	1,221	2,164	
830630		100.00	56.40	13	650	1,152	
830701		100.00	56.40	18	600	1,064	
830702		100.00	56.40	19	633	1,123	
830703		100.00					
830704	2	100.00	56.40	33	1,650	2,926	
830705		100.00	56.40	13	650	1,152	
830706		100.00	56.40	9	450	798	
830707		100.00	56.40	10	500	887	
830708		100.00	56.40	5	250	443	
830709		100.00					
830710	2	100.00	56.40	15	750	1,330	
830711		100.00					
830712	2	100.00	56.40	13	650	1,152	
830713		100.00					

DATE		TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830714	2	100.00	56.40 %	18	600	1,064
830715		100.00	56.40	2	67	118
830716		100.00	56.40	8	160	284
830717		100.00				
830718	2	100.00	56.40	17	340	603
830719		100.00				
830720	2	100.00	56.40	16	296	525
830721		100.00				
830722	2	100.00	56.40	18	193	342
830723		100.00				
830724	2	100.00	56.40	13	122	217
830725		100.00	56.40	8	78	138
830726		100.00	56.40	2	21	37
830727		100.00	56.40	2	20	35
830728		100.00	56.40	3	29	51
830729		100.00				
830730	2	100.00	56.40	5	49	87
		TOTALS		157,719	1,383,942	2,939,802

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

CHINOOK O*S LOWER GRANITE DAM DATE OF REPORT: 2/29/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830416	62.13		7	28	
830417	63.14		3	12	
830418	59.68		0	0	
830419	81.66		1	4	
830420	81.67		0	0	
830421	88.38		0	0	
830422	88.02		1	5	
830423	81.56		1	4	
830424	79.62		0	0	
830425	80.33		0	0	
830426	78.58		0	0	
830427	60.09		0	0	
830428	59.87		0	0	
830429	59.14		0	0	
830430	59.34		0	0	
830501	64.38		0	0	
830502	65.56		0	0	
830503	72.33		1	4	
830504	74.69		0	0	
830505	73.42		0	0	
830506	66.55		2	8	
830507	65.80		1	7	
830508	69.72				
830509	80.67		0	0	
830510	86.23		0	0	
830511	95.94		1	10	
830512	100.00		0	0	
830513	100.00		0	0	
830514	100.00		0	0	
830515	100.00				
830516	100.00		2	20	
830517	100.00		0	0	
830518	100.00		0	0	
830519	100.00		1	5	
830520	100.00		0	0	
830521	100.00		0	0	
830522	100.00				
830523	100.00		0	0	
830524	100.00		0	0	
830525	100.00		0	0	
830526	88.34		0	0	
830527	79.87		0	0	
830528	69.81		0	0	
830529	65.44				
830530	66.04		0	0	
830531	64.94		2	10	
830601	66.72		0	0	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830602	70.92		1	5	
830603	70.66				
830604	74.97		6	30	
830605	75.25				
830606	77.71		3	100	
830607	82.60		1	33	
830608	77.63		2	67	
830609	75.50		0	0	
830610	77.16		3	50	
830611	71.86		0	0	
830612	74.98		9	150	
830613	77.16		3	50	
830614	83.19		0	0	
830615	87.15		0	0	
830616	89.95		4	40	
830617	96.51		3	30	
830618	100.00		0	0	
830619	100.00		0	0	
830620	100.00		0	0	
830621	100.00		12	120	
830622	100.00		10	100	
830623	100.00		9	90	
830624	100.00		19	203	
830625	100.00		19	185	
830626	100.00		14	133	
830627	100.00		16	163	
830628	100.00		370	3,700	
830629	100.00		353	9,169	
830630	100.00		266	13,300	
830701	100.00		315	10,500	
830702	100.00		296	9,866	
830703	100.00				
830704	100.00		1,177	58,850	
830705	100.00		816	40,800	
830706	100.00		413	20,650	
830707	100.00		181	9,050	
830708	100.00		315	15,750	
830709	100.00				
830710	100.00		472	23,600	
830711	100.00				
830712	100.00		213	10,650	
830713	100.00				
830714	100.00		280	9,333	
830715	100.00		72	2,400	
830716	100.00		142	2,840	
830717	100.00				
830718	100.00		136	2,720	
830719	100.00				
830720	100.00		104	1,924	
830721	100.00				
830722	100.00		82	878	
830723	100.00				
830724	100.00		47	443	
830725	100.00		15	146	
830726	100.00		15	155	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830727	100.00		17	168	
830728	100.00		18	173	
830729	100.00				
830730	100.00		16	157	
	TOTALS		6,288	248,888	

APPENDIX B

Daily Catch and Passage Estimate Summary, McNary Dam

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

SOCKEYE MCNARY DAM DATE OF REPORT: 3/20/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	27.62		72	217	
830425	23.47		248	417	
830426	33.02		2,556	3,277	
830427	24.07		1,356	2,825	
830428	25.37		3,928	5,036	
830429	51.09		5,520	9,279	
830430	34.38		3,457	11,336	
830501	30.95		3,474	7,236	
830502	37.87		3,714	7,736	
830503	38.55		5,772	14,320	
830504	48.64		6,918	17,164	
830505	34.59		1,689	6,197	
830506	56.68		1,597	5,909	
830507	43.74		2,770	10,162	
830508	33.82		1,676	5,496	
830509	38.23		3,466	7,216	
330510	45.81		3,752	12,294	
830511	27.61		1,835	7,491	
830512	20.45		897	2,188	
830513	48.97		4,694	12,797	
830514	30.17		1,340	5,469	
830515	39.95		1,202	3,434	
830516	41.58		1,183	3,380	
830517	71.91		3,144	9,586	
830518	79.94		1,899	9,263	
830519	73.86		1,237	7,029	
830520	66.39		1,666	8,127	
830521	72.27		1,234	5,533	
830522	69.03		1,263	6,682	
830523	50.29		1,042	5,191	
830524	30.99		1,145	3,754	
830525	73.98		1,187	2,473	
830526	37.52		410	1,949	
830527	38.84		401	995	
830528	50.06		175	430	
830529	50.37		180	590	
830530	47.94		199	653	
830531	50.63		454	1,297	
830601	52.69		303	1,114	
830602	36.18		369	1,210	
830603	37.37		379	940	
830604	55.15		283	702	
830605	55.60		280	1,029	
830606	56.37		139	511	
830607	63.11		116	426	
830608	57.39		72	294	
830609	56.33		67	246	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830610	60.24		97	357	
830611	61.64		81	298	
830612	64.83		63	282	
830613	68.65		47	211	
830614	60.76		20	98	
830615	69.84		18	75	
830616	76.00		33	161	
830617	72.59		36	218	
830618	72.54		5	100	
830619	89.48		3	72	
830620	76.40		3	60	
830621	77.86		8	160	
830622	74.73		46	283	
830623	95.77		3	47	
830624	100.00		1	50	
830625	100.00		2	100	
830626	100.00		1	50	
830627	100.00		1	50	
830628	100.00		0	0	
830629	100.00		26	58	
830630	100.00		26	62	
830701	100.00		5	100	
830702	100.00		1	20	
830703	100.00		0	0	
830704	100.00		4	80	
830705	100.00		0	0	
830706	99.99		1	50	
830707	100.00		23	256	
830708	100.00		43	430	
830709	100.00		8	400	
830710	100.00		278	401	
830711	100.00		280	728	
830712	100.00		103	1,564	
830713	100.00		49	1,249	
830714	100.00		29	580	
830715	100.00		36	431	
830716	100.00		136	880	
830717	51.59		17	942	
830718	100.00		206	2,405	
830719	98.52		302	2,128	
830720	100.00		576	1,750	
830721	100.00		518	1,609	
830722	100.00		495	1,610	
830723	100.00		624	2,608	
830724	100.00		15	750	
830725	100.00		425	755	
830726	100.00		230	888	
830727	100.00				
830728	100.00		299	591	
830729	100.00		285	408	
830730	100.00		160	320	
830731	100.00		0		
830801	100.00		323	396	
830802	100.00		191	224	
830803	100.00		41	91	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830804	100.00		0		
830805	100.00		208	297	
830806	100.00		40	317	
830807	100.00		5	100	
830808	100.00		2	40	
830809	100.00		1	21	
830810	100.00		49	63	
830811	100.00		43	53	
830812	100.00		18	29	
830813	100.00		0	0	
830814	100.00		4	80	
830815	100.00		2	40	
830816	100.00		1	20	
830817	100.00		18	20	
830818	100.00		31	34	
830819	100.00		24	42	
830820	100.00		0		
830821	100.00		1	11	
830822	100.00		0	0	
830823	100.00		0		
830824	100.00		29	32	
830825	100.00		8	16	
	TOTALS		87,467	259,571	

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

COHO MCNARY DAM DATE OF REPORT: 3/20/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	27.62		2	6	
830425	23.47		1	2	
830426	33.02		0	0	
830427	24.07		0	0	
830428	25.37		1	1	
830429	51.09		1	2	
830430	34.38		0	0	
830501	30.95		2	4	
830502	37.87		11	23	
830503	38.55		110	273	
830504	48.64		156	387	
830505	34.59		91	334	
830506	56.68		41	152	
830507	43.74		35	129	
830508	33.82		13	43	
830509	38.23		63	131	
830510	45.81		127	416	
830511	27.61		81	331	
830512	20.45		161	393	
830513	48.97		1,864	5,082	
830514	30.17		2,162	8,824	
830515	39.95		2,659	7,597	
830516	41.58		1,718	4,508	
830517	71.91		4,110	12,532	
830518	79.94		2,362	11,522	
830519	73.86		1,646	9,352	
830520	66.39		1,446	7,054	
830521	72.27		996	4,466	
830522	69.03		846	4,476	
830523	50.29		456	2,272	
830524	30.99		625	2,049	
830525	73.98		492	1,025	
830526	37.52		54	257	
830527	38.84		58	144	
830528	50.06		73	179	
830529	50.37		33	108	
830530	47.94		49	161	
830531	50.63		118	337	
830601	52.69		21	77	
830602	36.18		29	95	
830603	37.37		21	52	
830604	55.15		26	65	
830605	55.60		37	136	
830606	56.37		11	40	
830607	63.11		5	18	
830608	57.39		7	29	
830609	56.33		25	92	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
8306 10	60.24		12	44	
8306 11	61.64		7	26	
8306 12	64.83		36	161	
8306 13	68.65		16	72	
8306 14	60.76		11	54	
8306 15	69.84		10	41	
8306 16	76.00		25	122	
8306 17	72.59		9	55	
8306 18	72.54		2	40	
8306 19	89.48		1	24	
8306 20	76.40		4	80	
8306 21	77.86		0	0	
8306 22	74.73		11	68	
8306 23	95.77		0	0	
8306 24	100.00		1	50	
8306 25	100.00		0	0	
8306 26	100.00		0	0	
8306 27	100.00		0	0	
8306 28	100.00		0	0	
8306 29	100.00		0	0	
8306 30	100.00		0	0	
8307 01	100.00		0	0	
8307 02	100.00		0	0	
8307 03	100.00		0	0	
8307 04	100.00		2	40	
8307 05	100.00		0	0	
8307 06	99.99		0	0	
8307 07	100.00		2	22	
8307 08	100.00		2	20	
8307 09	100.00		0	0	
8307 10	100.00		4	6	
8307 11	100.00		3	8	
8307 12	100.00		3	46	
8307 13	100.00		0	0	
8307 14	100.00		0	0	
8307 15	100.00		4	48	
8307 16	100.00		5	32	
8307 17	51.59		0	0	
8307 18	100.00		2	23	
8307 19	98.52		1	7	
8307 20	100.00		8	24	
8307 21	100.00		7	22	
8307 22	100.00		7	23	
8307 23	100.00		0	0	
8307 24	100.00		0	0	
8307 25	100.00		5	9	
8307 26	100.00		19	73	
8307 27	100.00				
8307 28	100.00		2	4	
8307 29	100.00		5	7	
8307 30	100.00		0	0	
8307 31	100.00		0		
8308 01	100.00		6	7	
8308 02	100.00		0	0	
8308 03	100.00		0	0	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830304	100.00		0		
830805	100.00		2	3	
	TOTALS		23,079	86,237	

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

CHINOOK 1+S MCNARY DAM DATE OF REPORT: 3/20/84

EFFICIENCY = 0.000 + 0.420(FLOW) WHEN FLOW < 25.0%
EFFICIENCY = -2.000 + 0.450(FLOW) WHEN FLOW >= 25.0%

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE	
830424	27.62	10.43 %	981	2,961	28,389	
830425	23.47	9.86	3,328	5,595	56,755	
830426	33.02	12.86	10,370	13,294	103,385	
830427	24.07	10.11	5,666	11,802	115,745	
830428	25.37	9.42	7,966	9,059	95,200	-10%
830429	51.09	20.99	5,464	9,185	43,758	
830430	34.38	13.47	3,635	11,919	88,481	
830501	30.95	11.93	5,580	11,623	97,448	
830502	37.87	15.04	6,183	12,879	85,623	
830503	38.55	15.35	9,672	23,996	156,353	
830504	48.64	19.89	18,551	46,273	232,670	
830505	34.59	13.57	9,859	36,175	266,670	
830506	56.68	23.51	7,109	26,304	111,902	
830507	43.74	17.68	10,948	40,245	227,590	
830508	33.82	13.22	9,458	31,012	234,605	-50%
830509	38.23	15.20	7,964	16,581	109,059	
830510	45.81	18.61	9,916	32,492	174,552	
830511	27.61	10.42	7,138	29,138	279,510	
830512	20.45	8.59	4,526	11,042	128,558	
830513	48.97	20.04	8,801	23,593	117,747	
830514	30.17	11.58	5,261	21,473	185,485	
830515	39.95	15.98	7,972	20,205	126,458	
830516	41.58	16.71	5,880	16,799	100,525	
830517	71.91	30.36	7,828	23,868	78,617	
830518	79.94	33.97	6,758	32,965	97,034	
830519	73.86	31.24	5,573	31,666	101,372	
830520	66.39	27.88	4,838	23,600	84,662	-90%
830521	72.27	30.52	3,136	14,062	46,072	
830522	69.03	29.06	3,420	18,095	62,260	
830523	50.29	20.63	2,261	11,264	54,597	
830524	30.99	11.95	2,030	6,656	55,722	
830525	73.98	31.29	1,968	4,099	13,101	
830526	37.52	14.88	430	2,044	13,731	
830527	38.84	15.48	333	826	5,338	
830528	50.06	20.53	351	863	4,202	
830529	50.37	20.67	46	151	730	
830530	47.94	19.57	131	430	2,195	
830531	50.63	20.78	335	957	4,605	
830601	52.69	21.71	200	735	3,386	
830602	36.18	14.28	116	380	2,663	
830603	37.37	14.82	175	434	2,930	
830604	55.15	22.82	146	362	1,587	
830605	55.60	23.02	263	967	4,200	
830606	56.37	23.37	148	544	2,328	
830607	63.11	26.40	76	279	1,058	
830608	57.39	23.83	43	176	737	
830609	56.33	23.35	39	143	614	

DATE		TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
8306 10		60.24	25.11 %	77	283	1,127
8306 11		61.64	25.74	101	371	1,443
8306 12		64.83	27.17	144	646	2,376
8306 13		68.65	28.89	66	296	1,024
8306 14		60.76	25.34	53	259	1,020
8306 15		69.84	29.43	29	120	409
8306 16		76.00	32.20	22	107	333
8306 17		72.59	30.67	65	294	1,285
8306 18		72.54	30.64	16	320	1,044
8306 19		89.48	38.27	33	797	2,082
8306 20		76.40	32.38	52	1,040	3,212
8306 21		77.86	33.04	38	760	2,300
8306 22		74.73	31.63	31	191	604
8306 23		95.77	41.10	7	110	267
8306 24		100.00	43.00	1	50	116
8306 25		100.00	43.00	4	200	465
8306 26		100.00	43.00	3	150	349
8306 27		100.00	43.00	2	100	233
8306 28		100.00	43.00	2	100	233
8306 29		100.00	43.00	2	4	10
8306 30		100.00	43.00	4	10	22
8307 01		100.00	43.00	6	120	279
8307 02		100.00	43.00	14	278	647
8307 03		100.00	43.00	7	140	326
8307 04		100.00	43.00	7	140	326
8307 05		100.00	43.00	3	150	349
8307 06		99.99	43.00	0	0	0
8307 07		100.00	43.00	2	22	52
8307 08		100.00	43.00	1	10	23
8307 09		100.00	43.00	0	0	0
8307 10		100.00	43.00	5	7	17
8307 11		100.00	43.00	3	8	18
8307 12		100.00	43.00	8	121	282
8307 13		100.00	43.00	3	76	178
8307 14		100.00	43.00	0	0	0
8307 15		100.00	43.00	0	0	0
8307 16		100.00	43.00	0	0	0
8307 17		51.59	21.22	0	0	0
8307 18		100.00	43.00	0	0	0
8307 19		98.52	42.33	0	0	0
8307 20		100.00	43.00	0	0	0
8307 21		100.00	43.00	0	0	0
8307 22		100.00	43.00	0	0	0
8307 23		100.00	43.00	0	0	0
8307 24		100.00	43.00	0	0	0
8307 25		100.00	43.00	1	2	4
8307 26		100.00	43.00	1	4	9
8307 27		100.00				
8307 28	2	100.00	43.00	0	0	0
8307 29		100.00	43.00	0	0	0
8307 30		100.00	43.00	0	0	0
8307 31		100.00	43.00	0		
8308 01		100.00	43.00	1	1	3
		TOTALS		211,986	646,998	3,836,676

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

STEELHEAD MCNARY DAM DATE OF REPORT: 3/20/84

EFFICIENCY = 0.000 + 0.290(FLOW) WHEN FLOW < 35.0%
EFFICIENCY = -23.660 + 0.990(FLOW) WHEN FLOW >= 35.0%

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE	
830424	27.62	8.01 %	118	356	4,446	
830425	23.47	6.81	374	629	9,237	
830426	33.02	9.58	1,151	1,476	15,409	
830427	24.07	6.98	633	1,319	18,889	
830428	25.37	7.36	1,354	1,736	23,593	
830429	51.09	26.92	913	1,535	5,701	
830430	34.38	9.97	749	2,456	24,633	
830501	30.95	8.98	1,702	3,545	39,499	
830502	37.87	13.83	1,718	3,579	25,873	
830503	38.55	14.50	3,831	9,505	65,529	-10%
830504	48.64	24.49	5,782	14,345	58,567	
830505	34.59	10.03	4,005	14,695	146,498	
830506	56.68	32.45	2,570	9,509	29,301	
830507	43.74	19.64	2,354	8,653	44,054	
830508	33.82	9.81	1,661	5,446	55,531	
830509	38.23	14.19	2,196	4,572	32,225	
830510	45.81	21.69	2,878	9,430	43,474	
830511	27.61	8.01	1,825	7,450	93,041	
830512	20.45	5.93	1,573	3,838	64,709	
830513	48.97	24.82	4,483	12,221	49,240	
830514	30.17	8.75	2,049	8,363	95,584	-50%
830515	39.95	15.89	2,906	8,303	52,248	
830516	41.58	17.50	2,775	7,928	45,292	
830517	71.91	47.53	2,521	7,687	16,172	
830518	79.94	55.48	1,972	9,619	17,338	
830519	73.86	49.46	1,642	9,330	18,863	
830520	66.39	42.07	2,731	13,322	31,669	
830521	72.27	47.89	2,120	9,506	19,851	
830522	69.03	44.68	2,420	12,804	28,658	
830523	50.29	26.13	2,320	11,558	44,236	
830524	30.99	8.99	3,596	11,791	131,200	
830525	73.98	49.58	4,568	9,515	19,191	
830526	37.52	13.48	1,540	7,319	54,277	
830527	38.84	14.79	2,227	5,525	37,354	
830528	50.06	25.90	2,734	6,719	25,942	
830529	50.37	26.21	821	2,692	10,273	
830530	47.94	23.80	1,331	4,364	18,337	
830531	50.63	26.46	2,013	5,751	21,733	
830601	52.69	28.50	1,421	5,224	18,326	-90%
830602	36.18	12.16	1,649	5,407	44,473	
830603	37.37	13.34	1,508	3,741	28,053	
830604	55.15	30.94	1,238	3,067	9,912	
830605	55.60	31.38	864	3,176	10,120	
830606	56.37	32.15	797	2,930	9,114	
830607	63.11	38.82	373	1,371	3,532	
830608	57.39	33.16	365	1,490	4,494	
830609	56.33	32.11	424	1,559	4,855	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830610	60.24	35.98 %	579	2,128	5,916
830611	61.64	37.36	376	1,382	3,699
830612	64.83	40.52	510	2,287	5,643
830613	68.65	44.30	457	2,049	4,625
830614	60.76	36.49	267	1,302	3,569
830615	69.84	45.48	182	755	1,659
830616	76.00	51.58	198	966	1,872
830617	72.59	48.20	200	1,212	2,515
830618	72.54	48.15	27	540	1,121
830619	89.48	64.93	26	628	967
830620	76.40	51.98	23	460	885
830621	77.86	53.42	30	600	1,123
830622	74.73	50.32	189	1,165	2,315
830623	95.77	71.15	30	470	660
830624	100.00	75.34	14	700	929
830625	100.00	75.34	1	50	66
830626	100.00	75.34	6	300	398
830627	100.00	75.34	7	350	465
830628	100.00	75.34	5	250	332
830629	100.00	75.34	52	116	154
830630	100.00	75.34	110	262	348
830701	100.00	75.34	14	280	372
830702	100.00	75.34	12	239	317
830703	100.00	75.34	5	100	133
830704	100.00	75.34	6	120	159
830705	100.00	75.34	5	250	332
830706	99.99	75.33	5	250	332
830707	100.00	75.34	19	211	281
830708	100.00	75.34	32	320	425
830709	100.00	75.34	3	150	199
830710	100.00	75.34	115	166	220
830711	100.00	75.34	42	109	145
830712	100.00	75.34	18	273	363
830713	100.00	75.34	1	25	34
830714	100.00	75.34	1	20	27
830715	100.00	75.34	7	84	111
830716	100.00	75.34	4	26	34
830717	51.59	27.41	3	166	606
830718	100.00	75.34	6	70	93
830719	98.52	73.87	5	35	48
830720	100.00	75.34	25	76	101
830721	100.00	75.34	19	59	78
830722	100.00	75.34	18	59	78
830723	100.00	75.34	13	54	72
830724	100.00	75.34	1	50	66
830725	100.00	75.34	23	41	54
830726	100.00	75.34	11	42	56
830727	100.00				
830728 2	100.00	75.34	14	28	37
830729	100.00	75.34	10	14	19
830730	100.00	75.34	2	4	5
830731	100.00	75.34	0		
830801	100.00	75.34	11	13	18
830802	100.00	75.34	5	6	8
830803	100.00	75.34	3	7	9

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
8303 04	100.00	75.34 %	0		
8303 05	100.00	75.34	2	3	4
8303 06	100.00	75.34	3	24	32
8303 07	100.00	75.34	0	0	0
8303 08	100.00	75.34	0	0	0
8303 09	100.00	75.34	2	41	55
8303 10	100.00	75.34	3	4	5
8303 11	100.00	75.34	3	4	5
8303 12	100.00	75.34	0	0	0
8303 13	100.00	75.34	0	0	0
8303 14	100.00	75.34	0	0	0
8303 15	100.00	75.34	1	20	27
8303 16	100.00	75.34	0	0	0
8303 17	100.00	75.34	3	3	4
8303 18	100.00	75.34	3	3	4
8303 19	100.00	75.34	3	5	7
8303 20	100.00	75.34	0		
8303 21	100.00	75.34	0	0	0
8303 22	100.00	75.34	2	40	53
8303 23	100.00	75.34	0		
8303 24	100.00	75.34	3	3	4
8303 25	100.00	75.34	0	0	0
8303 26	100.00	75.34	2	40	53
8303 27	100.00	75.34	0	0	0
8303 28	100.00	75.34	0	0	0
8303 29	100.00	75.34	1	14	18
	TOTALS		96,571	317,879	1,716,910

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

CHINOOK O'S MCNARY DAM DATE OF REPORT: 3/20/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	27.62		106	320	
830425	23.47		53	89	
830426	33.02		122	156	
830427	24.07		190	396	
830428	25.37		484	620	
830429	51.09		444	746	
830430	34.38		431	1,413	
830501	30.95		268	558	
830502	37.87		209	435	
830503	38.55		191	474	
830504	48.64		141	350	
830505	34.59		150	550	
830506	56.68		152	562	
830507	43.74		198	728	
830508	33.82		197	646	
830509	38.23		366	762	
830510	45.81		406	1,330	
830511	27.61		312	1,274	
830512	20.45		340	829	
830513	48.97		661	1,802	
830514	30.17		418	1,706	
830515	39.95		303	866	
830516	41.58		271	774	
830517	71.91		548	1,671	
830518	79.94		295	1,439	
830519	73.86		193	1,097	
830520	66.39		255	1,244	
830521	72.27		195	874	
830522	69.03		434	2,296	
830523	50.29		270	1,345	
830524	30.99		860	2,820	
830525	73.98		1,327	2,764	
830526	37.52		631	2,999	
830527	38.84		964	2,392	
830528	50.06		1,325	3,258	
830529	50.37		754	2,472	
830530	47.94		1,273	4,174	
830531	50.63		2,739	7,825	
830601	52.69		2,190	8,050	
830602	36.18		2,560	8,394	
830603	37.37		3,943	9,782	
830604	55.15		11,579	28,728	
830605	55.60		9,080	33,378	
830606	56.37		10,340	38,010	
830607	63.11		10,155	37,330	
830608	57.39		12,231	49,927	
830609	56.33		7,933	29,162	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
8306 10	60.24		5,751	21,141	
8306 11	61.64		7,500	27,570	
8306 12	64.83		13,041	58,476	
8306 13	68.65		16,345	75,533	
8306 14	60.76		16,797	81,936	
8306 15	69.84		19,604	81,285	
8306 16	76.00		6,629	32,336	
8306 17	72.59		12,302	74,562	
8306 18	72.54		1,443	28,860	
8306 19	89.48		539	13,011	
8306 20	76.40		714	14,280	
8306 21	77.86		2,354	47,080	
8306 22	74.73		31,055	191,388	
8306 23	95.77		4,346	68,018	
8306 24	100.00		1,007	50,350	
8306 25	100.00		376	18,800	
8306 26	100.00		273	13,650	
8306 27	100.00		273	13,650	
8306 28	100.00		837	41,850	
8306 29	100.00		6,239	13,878	
8306 30	100.00		7,194	17,155	
8307 01	100.00		1,239	24,780	
8307 02	100.00		4,034	80,183	
8307 03	100.00		1,428	28,580	
8307 04	100.00		2,404	48,080	
8307 05	100.00		4,156	207,800	
8307 06	99.99		3,153	157,650	
8307 07	100.00		9,943	110,617	
8307 08	100.00		10,904	109,040	
8307 09	100.00		989	44,450	
8307 10	100.00		10,937	15,764	
8307 11	100.00		15,077	39,222	
8307 12	100.00		16,296	247,394	
8307 13	100.00		11,650	296,865	
8307 14	100.00		12,618	252,360	
8307 15	100.00		13,290	159,021	
8307 16	100.00		14,778	95,645	
8307 17	51.59		3,217	178,242	
8307 18	100.00		15,041	175,577	
8307 19	98.52		20,688	145,807	
8307 20	100.00		18,003	54,686	
8307 21	100.00		14,458	44,902	
8307 22	100.00		11,839	38,511	
8307 23	100.00		14,135	59,071	
8307 24	100.00		636	31,800	
8307 25	100.00		13,704	24,338	
8307 26	100.00		14,551	56,150	
8307 27	100.00				
8307 28	100.00		12,331	24,363	
8307 29	100.00		15,179	21,737	
8307 30	100.00		6,056	12,112	
8307 31	100.00		0		
8308 01	100.00		8,982	11,006	
8308 02	100.00		10,470	12,304	
8308 03	100.00		1,100	2,429	

DATE	TURBINE FLOW (%)	SAMPLING EFFICIENCY	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830304	100.00		0		
830305	100.00		8,993	12,847	
830306	100.00		2,091	16,596	
830307	100.00		335	6,700	
830308	100.00		375	7,500	
830309	100.00		528	10,938	
830310	100.00		8,212	10,554	
830311	100.00		3,146	3,887	
830312	100.00		1,978	3,190	
830313	100.00		224	4,480	
830314	100.00		195	3,900	
830315	100.00		259	5,180	
830816	100.00		218	4,360	
830317	100.00		3,644	4,049	
830318	100.00		4,210	4,677	
830319	100.00		3,945	6,865	
830320	100.00		0		
830821	100.00		450	4,971	
830322	100.00		81	1,620	
830323	100.00		0		
830824	100.00		10,904	12,084	
830325	100.00		5,281	10,562	
830326	100.00		225	4,500	
830327	100.00		169	3,380	
830328	100.00		134	2,680	
830329	100.00		201	2,756	
830330	100.00		61	610	
830331	100.00		123	1,230	
		TOTALS	612,774	4,244,224	

APPENDIX C

Daily Catch and Passage Estimate Summary, John Day Dam

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

SOCKEYE JOHN DAY DAM DATE OF REPORT: 1/16/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830407		5.29		2	
830408		7.32		7	
830409		8.41			
830410		6.09			
830411	3	6.71		3	
830412		6.21		2	
830413		5.48		0	
830414		5.57		3	
830415		6.77		1	
830416		5.89			
830417		6.20			
830418	3	6.77		4	
830419		6.12		8	
830420		6.46		6	
830421		9.05		6	
830422		7.91		5	
830423		6.35			
830424		6.27			
830425	3	5.46		23	
830426		4.60		15	
830427		4.90		3	
830428		4.95		37	
830429		4.52		103	
830430		4.63		210	
830501		5.54		563	
830502		5.55		880	
830503		4.67		742	
830504		4.94		764	
830505		5.72		775	
830506		4.40		527	
830507		4.85		654	
830508		5.01		796	
830509		5.08		616	
830510		4.85		541	
830511		4.91		804	
830512		4.70		447	
830513		4.93		282	
830514		5.41		228	
830515		5.12		218	
830516		5.32		266	
830517		5.61		356	
830518		5.59		221	
830519		5.69		241	
830520		5.72		227	
830521		5.52		373	
830522		5.94		360	
830523		5.09		132	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830524		5.49		323	
830525		5.50		259	
830526		4.95		529	
830527		4.82		280	
830528		3.84		448	
830529		4.32		423	
830530		4.34		102	
830531		4.51		40	
830601		3.48		28	
830602		4.04		46	
830603		3.50		90	
830604		4.27		41	
830605		4.05		24	
830606		4.31		27	
830607		4.08		18	
830608		4.37		30	
830609		4.74		6	
830610		4.73		23	
830611		4.88		6	
830612		4.99		5	
830613		5.00		3	
830614		5.01		2	
830615		5.52		7	
830616		5.57		10	
830617		5.03		7	
830618		6.35			
830619		6.63			
830620	3	6.51		9	
830621		5.57		1	
830622		5.55		0	
830623		5.94		0	
830624		6.33			
830625	2	6.28		1	
830626		7.76		0	
830627		6.34		2	
830628		6.18		1	
830629		7.57		2	
830630		8.03		0	
830701		8.79		1	
830702		5.44		0	
830703		6.79		0	
830704		7.20		0	
830705		7.05		0	
830706		6.85		0	
830707		5.98		0	
830708		5.80		0	
830709		7.08		0	
830710		6.21		0	
830711		8.48		0	
830712		7.22		0	
830713		6.79		1	
830714		7.70		1	
830715		8.53		4	
830716		5.78		0	
830717		7.09		0	

DATE	% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830718	3.17		3	
830719	5.57		2	
830720	6.59		0	
830721	5.73		3	
830722	6.26		2	
830723	6.37		4	
830724	6.77		2	
830725	7.29		0	
830726	7.43		4	
830727	5.92		3	
830728	6.75		0	
830729	6.06		3	
830730	5.82		4	
830731	5.80		6	
830801	6.30		0	
830802	8.60		0	
830803	9.04		2	
830804	7.52		2	
830805	8.95		1	
830806	9.26		1	
830807	8.32		2	
830808	3.81		0	
830809	9.97		0	
830810	10.31		1	
830811	10.82		3	
830812	11.65		2	
830813	9.23		2	
830814	9.29		1	
830815	11.22		0	
830816	14.44			
830817 2	9.13		0	
830818	10.33		0	
830819	10.38		0	
830820	8.39		0	
830821	8.91		0	
830822	9.47		0	
830823	13.24		1	
830824	10.10		1	
830825	14.06		0	
830826	13.04		1	
830827	12.16		0	
830828	5.52		0	
830829	14.75		0	
830830	14.09		1	
830831	11.11		0	
830901	9.89		0	
830902	11.39		2	
830903	12.16		1	
830904	11.59		0	
830905	13.85		0	
830906	15.25		0	
830907	12.68		0	
830908	12.16		1	
830909	17.31		0	
830910	15.52		0	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
8309 11		12.33		2	
8309 12		16.98		1	
8309 13		16.07		3	
8309 14		15.25		1	
8309 15		15.25		0	
8309 16		7.76		0	
8309 17		14.29		1	
8309 18		13.04		3	
8309 19		16.07		1	
8309 20		13.64		0	
8309 21		16.07		2	
8309 22		12.00		4	
8309 23		14.29		1	
8309 24		16.67			
8309 25		17.65			
8309 26	3	16.67		0	
8309 27		16.36		0	
8309 28		14.52			
8309 29		14.29			
8309 30	3	13.85		1	
8310 01		13.64			
8310 02		15.00			
8310 03	3	17.31		0	
8310 04		13.35		0	
8310 05		14.06		1	
8310 06		13.35		0	
8310 07		15.52		0	
8310 08		15.79			
8310 09		19.57			
8310 10	3	21.95		3	
8310 11		13.64		1	
8310 12		11.54		1	
8310 13		12.86		0	
8310 14		18.75		0	
8310 15		13.24			
8310 16		17.31			
8310 17	3	20.00		0	
8310 18		13.64		0	
8310 19		12.86		0	
8310 20		15.25		1	
8310 21		13.64		0	
8310 22		14.06			
8310 23		21.43			
8310 24	3	18.75		2	
8310 25		15.25		0	
8310 26		15.79		0	
8310 27		15.25		0	
8310 28		16.67		1	
8310 29		14.75			
8310 30		13.04			
8310 31	3	15.52		2	
8311 01		16.07			
8311 02	2	16.36		1	
8311 03		16.36			
8311 04	2	15.00		1	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
831105		12.16			
831106		16.07			
831107	3	14.06		2	
831108		12.50			
831109		12.33			
831110		10.71			
831111	4	13.64		0	
831112		16.07			
831113		16.36			
831114	3	16.36		0	
831115		17.65			
831116	2	17.65		1	
831117		12.16			
831118	2	12.16		0	
831119		10.59			
831120		13.04			
831121	3	13.85		0	
831122		8.82			
831123	2	12.00		0	
831124		12.16			
831125		11.69			
831126		11.39			
831127		14.52			
831128	3	15.52		0	
831129		12.68			
831130	2	11.39		0	
831201		11.54			
831202	2	10.59		1	
831203		11.54			
831204		11.69			
831205	3	11.54		2	
831206		9.47			
831207	2	11.69		1	
831208		11.39			
831209	2	12.50		0	
831210		12.68			
831211		15.00			
831212	3	16.00		1	
831213		12.50			
831214	2	13.24		1	
			TOTALS	14,355	

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

COHO JOHN DAY DAM DATE OF REPORT: 1/16/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE	% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830430	4.63		14	
830501	5.54		1	
830502	5.55		0	
830503	4.67		0	
830504	4.94		0	
830505	5.72		1	
830506	4.40		7	
830507	4.85		7	
830508	5.01		20	
830509	5.08		7	
830510	4.85		13	
830511	4.91		13	
830512	4.70		4	
830513	4.93		4	
830514	5.41		23	
830515	5.12		25	
830516	5.32		136	
830517	5.61		377	
830518	5.59		271	
830519	5.69		344	
830520	5.72		317	
830521	5.52		448	
830522	5.94		181	
830523	6.09		93	
830524	5.49		74	
830525	5.50		82	
830526	4.95		89	
830527	4.32		59	
830528	3.84		40	
830529	4.32		14	
830530	4.34		27	
830531	4.51		9	
830601	3.48		7	
830602	4.04		6	
830603	3.50		2	
830604	4.27		1	
830605	4.05		2	
830606	4.31		1	
830607	4.08		1	
830608	4.37		4	
830609	4.74		0	
830610	4.73		1	
830611	4.88		3	
830612	4.99		0	
830613	5.00		1	
830614	5.01		1	
830615	5.52		0	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830616		5.57		0	
830617		5.03		0	
830618		6.35			
830619		6.63			
830620	3	6.51		0	
830621		5.57		0	
830622		5.55		0	
830623		5.94		1	
830624		6.36			
830625	2	6.28		0	
830626		7.76		0	
830627		6.84		0	
830628		6.18		0	
830629		7.57		0	
830630		8.03		0	
830701		6.79		0	
830702		5.44		0	
830703		6.79		0	
830704		7.20		0	
830705		7.05		0	
830706		6.35		0	
830707		5.98		0	
830708		6.80		0	
830709		7.08		1	
830710		8.21		0	
830711		8.48		0	
830712		7.22		1	
830713		6.79		0	
830714		7.70		1	
830715		8.53		0	
830716		5.76		0	
830717		7.09		0	
830718		8.17		0	
830719		5.57		0	
830720		6.59		0	
830721		5.73		0	
830722		6.26		0	
830723		6.57		0	
830724		6.77		0	
830725		7.29		0	
830726		7.43		0	
830727		5.92		0	
830728		6.75		0	
830729		6.06		0	
830730		5.82		0	
830731		5.80		0	
830801		6.30		0	
830802		8.60		0	
830803		9.04		0	
830804		7.52		0	
830805		8.95		0	
830806		9.26		0	
830807		8.32		0	
830808		8.61		0	
830809		9.97		0	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830810		10.31		0	
830811		10.82		0	
830812		11.65		0	
830813		9.23		0	
830814		9.29		0	
830815		11.22		0	
830816		14.44			
830817	2	9.13		0	
830818		10.33		0	
830819		10.32		0	
830820		8.39		0	
830821		8.91		0	
830822		9.47		0	
830823		13.24		0	
830824		10.10		0	
830825		14.06		0	
830826		13.04		0	
830827		12.16		0	
830828		5.52		0	
830829		14.75		0	
830830		14.06		0	
830831		11.11		0	
830901		9.69		0	
830902		11.39		0	
830903		12.16		0	
830904		11.39		0	
830905		13.65		0	
830906		15.25		0	
830907		12.58		0	
830908		12.16		0	
830909		17.31		0	
830910		15.52		0	
830911		12.33		0	
830912		15.99		0	
830913		15.07		0	
830914		15.25		0	
830915		15.25		0	
830916		7.76		0	
830917		14.29		0	
830918		15.04		0	
830919		16.07		0	
830920		13.64		0	
830921		16.07		0	
830922		12.00		0	
830923		14.29		0	
830924		16.67			
830925		17.05			
830926	3	16.67		0	
830927		16.36		0	
830928		14.52			
830929		14.29			
830930	3	13.85		0	
831001		13.64			
831002		15.00			
831003	3	17.31		0	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
831004		13.85		0	
831005		14.06		0	
831006		13.85		0	
831007		15.52		0	
831008		15.79			
831009		19.57			
831010	3	21.95		0	
831011		13.64		0	
831012		11.54		0	
831013		12.86		0	
831014		16.75		0	
831015		13.24			
831016		17.31			
831017	3	20.00		0	
831018		13.64		0	
831019		12.86		0	
831020		15.25		0	
831021		13.64		0	
831022		14.06			
831023		21.43			
831024	3	16.75		0	
831025		15.25		0	
831026		15.79		0	
831027		15.25		0	
831028		16.67		0	
831029		14.75			
831030		15.04			
831031	3	15.52		0	
811101		16.07			
811102	2	16.36		0	
811103		16.36			
811104	2	15.00		0	
811105		12.16			
811106		16.07			
811107	3	14.06		0	
811108		12.50			
811109		12.33			
811110		10.71			
811111	4	13.64		0	
811112		16.07			
811113		16.36			
811114	3	16.36		0	
811115		17.65			
811116	2	17.65		1	
			TOTALS	2,735	

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

CHINOOK 1'S JOHN DAY DAM DATE OF REPORT: 1/16/84

EFFICIENCY = 0.000 + 0.151(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.151(FLOW) WHEN FLOW >= 0.0%

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE	
830407		5.29	0.80 %	27	3,380	
830408		7.32	1.11	41	3,709	
830409		3.41				
830410		6.09				
830411	3	6.71	1.07	153	14,332	
830412		6.21	0.94	80	3,531	
830413		5.48	0.83	46	5,559	
830414		5.57	0.84	57	6,777	
830415		6.77	1.02	29	2,837	
830416		5.89				
830417		6.20				
830418	3	6.77	0.95	128	13,484	
830419		6.12	0.92	79	8,549	
830420		6.46	0.98	84	8,611	
830421		9.05	1.37	107	7,830	
830422		7.91	1.19	67	5,609	
830423		6.35				
830424		6.27				
830425	3	5.46	0.91	408	44,834	
830426		4.60	0.69	334	48,085	
830427		4.80	0.72	111	15,315	
830428		4.95	0.75	271	36,257	
830429		4.32	0.68	511	74,870	
830430		4.63	0.70	242	34,614	-10%
830501		5.54	0.84	766	91,568	
830502		5.55	0.84	538	64,197	
830503		4.67	0.71	708	100,401	
830504		4.94	0.75	597	80,033	
830505		5.72	0.86	1,295	149,933	
830506		4.40	0.66	1,081	162,703	
830507		4.85	0.73	890	121,527	
830508		5.01	0.76	793	104,823	
830509		5.08	0.77	1,197	156,046	
830510		4.85	0.73	2,420	330,443	-50%
830511		4.91	0.74	1,922	259,236	
830512		4.70	0.71	819	115,401	
830513		4.93	0.74	419	56,285	
830514		5.41	0.82	638	78,099	
830515		5.12	0.77	603	77,996	
830516		5.32	0.80	994	111,288	
830517		5.61	0.85	1,369	161,608	
830518		5.59	0.84	1,211	143,468	
830519		5.69	0.86	863	100,443	
830520		5.72	0.86	606	70,162	
830521		5.52	0.83	775	92,979	
830522		6.94	1.05	194	18,513	
830523		6.09	0.92	107	11,636	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830524		5.49	0.83 %	127	15,320 -90%
830525		5.50	0.83	139	15,737
830526		4.95	0.75	421	55,325
830527		4.82	0.73	160	21,983
830528		3.84	0.58	228	39,321
830529		4.32	0.65	164	25,141
830530		4.34	0.66	161	24,567
830531		4.51	0.68	49	7,195
830601		3.48	0.53	58	11,038
830602		4.04	0.61	85	13,934
830603		3.50	0.53	50	9,461
830604		4.27	0.64	65	10,081
830605		4.05	0.61	72	11,773
830606		4.31	0.65	89	13,675
830607		4.08	0.62	23	3,733
830608		4.37	0.66	35	5,304
830609		4.74	0.72	34	4,750
830610		4.73	0.71	62	8,681
830611		4.38	0.74	30	4,071
830612		4.99	0.75	19	2,522
830613		5.00	0.76	40	5,298
830614		5.01	0.76	21	2,776
830615		5.52	0.83	26	3,119
830616		5.57	0.84	29	3,448
830617		5.03	0.76	9	1,185
830618		6.35			
830619		6.63			
830620	3	6.51	0.98	39	3,976
830621		5.57	0.84	8	951
830622		5.55	0.84	4	477
830623		5.94	0.90	6	669
830624		6.36			
830625	2	6.28	0.95	2	210
830626		7.76	1.17	6	512
830627		6.84	1.03	2	194
830628		6.18	0.93	1	107
830629		7.57	1.14	2	175
830630		8.03	1.21	1	82
830701		8.79	1.33	3	226
830702		5.44	0.82	6	730
830703		6.79	1.03	4	390
830704		7.20	1.09	1	92
830705		7.05	1.06	1	94
830706		6.85	1.03	0	0
830707		5.98	0.90	0	0
830708		5.80	0.88	0	0
830709		7.08	1.07	0	0
830710		8.21	1.24	1	81
830711		8.48	1.28	0	0
830712		7.22	1.09	0	0
830713		6.79	1.03	2	195
830714		7.70	1.16	6	516
830715		8.53	1.29	11	854
830716		5.76	0.87	3	345
830717		7.09	1.07	1	93

DATE	% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830718	3.17	0.48 %	1	209
830719	5.57	0.84	0	0
830720	6.59	1.00	0	0
830721	5.73	0.87	0	0
830722	6.26	0.95	2	212
830723	6.37	0.96	1	104
830724	6.77	1.02	0	0
830725	7.29	1.10	0	0
830726	7.43	1.12	0	0
830727	5.92	0.89	0	0
830728	6.75	1.02	0	0
830729	6.06	0.92	0	0
830730	5.82	0.88	1	114
830731	5.80	0.88	0	0
830801	6.30	0.95	1	105
830802	8.60	1.30	1	77
830803	9.04	1.37	2	147
830804	7.52	1.14	2	176
830805	8.95	1.35	3	222
830806	9.26	1.40	0	0
830807	8.32	1.26	0	0
830808	8.81	1.33	1	75
830809	9.97	1.51	0	0
830810	10.31	1.56	1	64
830811	10.82	1.63	0	0
830812	11.65	1.76	3	171
830813	9.23	1.39	0	0
830814	9.29	1.40	1	71
830815	11.22	1.69	0	0
830816	14.44			
830817 ?	9.13	1.78	0	0
830818	10.33	1.56	1	64
830819	10.38	1.57	0	0
830820	8.39	1.27	0	0
830821	8.91	1.35	0	0
830822	9.47	1.43	0	0
830823	13.24	2.00	0	0
830824	10.10	1.53	0	0
830825	14.06	2.12	0	0
830826	13.04	1.97	0	0
830827	12.16	1.84	0	0
830828	5.52	0.83	0	0
830829	14.75	2.23	1	45
830830	14.06	2.12	0	0
830831	11.11	1.68	0	0
830901	9.89	1.49	1	67
	TOTALS		25,809	3,335,301

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

STEELHEAD JOHN DAY DAM DATE OF REPORT: 1/16/84

EFFICIENCY = 0.000 + 0.700(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.700(FLOW) WHEN FLOW >= 0.0%

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE	
830407		5.29	3.70 %	153	4,132	
830408		7.32	5.12	136	2,654	
830409		8.41				
830410		6.09				
830411	3	6.71	4.95	391	7,901	
830412		6.21	4.35	238	5,475	
830413		5.40	3.84	138	3,597	
830414		5.57	3.90	70	1,795	
830415		6.77	4.74	81	1,709	
830416		5.89				
830417		6.20				
830418	3	6.77	4.40	131	2,977	
830419		6.12	4.28	159	3,711	
830420		6.46	4.52	141	3,118	
830421		9.05	6.34	126	1,989	
830422		7.91	5.54	139	2,510	
830423		6.35				
830424		6.27				
830425	3	5.46	4.22	1,440	34,134	
830426		4.60	3.22	529	16,429	
830427		4.80	3.36	449	13,363	
830428		4.95	3.47	479	13,824	
830429		4.52	3.16	344	10,872	
830430		4.63	3.24	438	13,514	
830501		5.54	3.88	785	20,242	
830502		5.55	3.88	1,067	27,465	
830503		4.67	3.27	1,902	58,183	-10%
830504		4.94	3.46	1,601	46,298	
830505		5.72	4.00	1,753	43,781	
830506		4.40	3.08	1,669	54,188	
830507		4.85	3.40	2,984	87,894	
830508		5.01	3.51	3,659	104,334	
830509		5.08	3.56	3,171	89,173	
830510		4.85	3.40	2,788	82,121	
830511		4.91	3.44	1,732	50,393	
830512		4.70	3.29	1,753	53,283	
830513		4.93	3.45	1,194	34,599	
830514		5.41	3.79	1,393	36,784	
830515		5.12	3.58	1,078	30,078	
830516		5.32	3.72	2,855	76,665	
830517		5.61	3.93	2,574	65,546	
830518		5.59	3.91	1,360	34,756	-50%
830519		5.69	3.98	1,478	37,108	
830520		5.72	4.00	919	22,952	
830521		5.52	3.86	928	24,017	
830522		6.94	4.86	367	7,555	
830523		6.09	4.26	615	14,426	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE	
830524		5.49	3.84 %	401	10,435	
830525		5.50	3.85	1,131	29,377	
830526		4.95	3.47	1,832	52,872	
830527		4.82	3.37	4,533	134,351	
830528		3.84	2.69	3,189	118,638	
830529		4.32	3.02	1,550	51,257	
830530		4.34	3.04	4,078	134,233	
830531		4.51	3.16	2,308	73,107	
830601		3.48	2.44	1,475	60,550	
830602		4.04	2.83	1,250	44,201	
830603		3.50	2.45	2,890	117,959	-90%
830604		4.27	2.99	1,275	42,656	
830605		4.05	2.84	684	24,127	
830606		4.31	3.02	621	20,583	
830607		4.08	2.86	461	15,141	
830608		4.37	3.06	353	11,540	
830609		4.74	3.32	168	5,063	
830610		4.73	3.31	209	6,312	
830611		4.88	3.42	108	3,162	
830612		4.99	3.49	71	2,033	
830613		5.00	3.50	80	2,286	
830614		5.01	3.51	53	1,511	
830615		5.52	3.86	59	1,527	
830616		5.57	3.90	35	898	
830617		5.03	3.52	29	824	
830618		6.35				
830619		6.63				
830620	3	6.51	4.55	51	1,121	
830621		5.57	3.90	18	462	
830622		5.55	3.88	14	360	
830623		5.94	4.16	12	289	
830624		6.36				
830625	2	6.28	4.42	2	45	
830626		7.76	5.43	3	55	
830627		6.84	4.79	0	0	
830628		6.18	4.33	3	69	
830629		7.57	5.30	2	38	
830630		8.03	5.62	2	36	
830701		8.79	6.15	10	163	
830702		5.44	3.81	3	79	
830703		6.79	4.75	1	21	
830704		7.20	5.04	1	20	
830705		7.05	4.94	0	0	
830706		6.85	4.80	1	21	
830707		5.98	4.19	3	72	
830708		5.80	4.06	2	49	
830709		7.08	4.96	1	20	
830710		8.21	5.75	0	0	
830711		8.48	5.94	0	0	
830712		7.22	5.05	0	0	
830713		6.79	4.75	1	21	
830714		7.70	5.39	0	0	
830715		8.53	5.97	2	33	
830716		5.76	4.03	5	124	
830717		7.09	4.96	1	20	

DATE	% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830718	3.17	2.22 %	2	90
830719	5.57	3.90	0	0
830720	6.59	4.61	0	0
830721	5.73	4.01	0	0
830722	6.26	4.38	0	0
830723	6.37	4.46	0	0
830724	6.77	4.74	0	0
830725	7.29	5.10	0	0
830726	7.43	5.20	1	19
830727	5.92	4.14	1	24
830728	6.75	4.73	1	21
830729	6.06	4.24	1	24
830730	5.82	4.07	0	0
830731	5.80	4.06	0	0
830801	6.30	4.41	0	0
830802	8.60	6.02	0	0
830803	9.04	6.33	0	0
830804	7.52	5.26	1	19
830805	8.95	6.26	1	16
830806	9.26	6.48	0	0
830807	8.32	5.82	0	0
830808	8.81	6.17	0	0
830809	9.97	6.99	0	0
830810	10.31	7.22	1	14
830811	10.82	7.57	0	0
830812	11.65	8.16	2	25
830813	9.23	6.46	2	31
830814	9.29	6.50	0	0
830815	11.22	7.85	0	0
830816	14.44			
830817 2	9.13	9.25	0	0
830818	10.33	7.23	0	0
830819	10.39	7.27	0	0
830820	8.39	5.87	0	0
830821	8.91	6.24	0	0
830822	9.47	6.63	1	15
830823	13.24	9.27	0	0
830824	10.10	7.07	0	0
830825	14.06	9.84	0	0
830826	13.04	9.13	0	0
830827	12.16	8.51	0	0
830828	5.52	3.86	0	0
830829	14.75	10.32	0	0
830830	14.06	9.84	0	0
830831	11.11	7.78	0	0
830901	9.89	6.92	0	0
830902	11.39	7.97	1	13
830903	12.16	8.51	0	0
830904	11.69	8.18	0	0
830905	13.85	9.69	0	0
830906	15.25	10.68	0	0
830907	12.68	8.88	0	0
830908	12.16	8.51	0	0
830909	17.31	12.12	0	0
830910	15.52	10.86	0	0

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830911		12.33	8.63 %	0	0
830912		16.98	11.89	0	0
830913		16.07	11.25	0	0
830914		15.25	10.68	0	0
830915		15.25	10.68	0	0
830916		7.76	5.43	0	0
830917		14.29	10.00	0	0
830918		13.04	9.13	0	0
830919		16.07	11.25	0	0
830920		13.64	9.55	0	0
830921		16.07	11.25	0	0
830922		12.00	8.40	0	0
830923		14.29	10.00	0	0
830924		16.67			
830925		17.65			
830926	3	16.67	11.90	0	0
830927		16.36	11.45	0	0
830928		14.52			
830929		14.29			
830930	3	13.65	9.95	0	0
831001		13.64			
831002		15.00			
831003	3	17.31	10.72	0	0
831004		13.65	9.69	0	0
831005		14.06	9.84	1	10
831006		13.65	9.69	0	0
831007		15.52	10.86	0	0
831008		15.79			
831009		19.57			
831010	3	21.95	13.37	0	0
831011		13.64	9.55	0	0
831012		11.54	8.08	0	0
831013		12.86	9.00	0	0
831014		18.75	13.13	0	0
831015		13.24			
831016		17.31			
831017	3	20.00	11.80	1	8
831018		13.64	9.55	0	0
831019		12.86	9.00	0	0
831020		15.25	10.68	0	0
831021		13.64	9.55	0	0
831022		14.06			
831023		21.43			
831024	3	18.75	12.66	0	0
831025		15.25	10.68	0	0
831026		15.79	11.05	0	0
831027		15.25	10.68	0	0
831028		16.67	11.67	0	0
831029		14.75			
831030		13.04			
831031	3	15.52	10.11	0	0
831101		16.07			
831102	2	16.36	11.35	0	0
831103		16.36			
831104	2	15.00	10.98	0	0

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
831105		12.16			
831106		16.07			
831107	3	14.06	9.87 %	1	10
831108		12.50			
831109		12.33			
831110		10.71			
831111	4	13.64	8.61	0	0
831112		16.07			
831113		16.36			
831114	3	16.36	11.38	0	0
831115		17.65			
831116	2	17.65	12.36	1	8
831117		12.16			
831118	2	12.16	8.51	0	0
831119		10.59			
831120		13.04			
831121	3	13.85	8.75	0	0
831122		8.82			
831123	2	12.00	7.29	0	0
831124		12.16			
831125		11.69			
831126		11.59			
831127		14.52			
831128	5	15.52	9.14	0	0
831129		12.63			
831130	2	11.39	9.42	0	0
831201		11.84			
831202	2	10.59	7.85	0	0
831203		11.54			
831204		11.69			
831205	3	11.54	3.11	0	0
831206		9.47			
831207	2	11.69	7.41	0	0
831208		11.39			
831209	2	12.50	8.36	0	0
831210		12.68			
831211		15.00			
831212	3	15.00	10.66	0	0
831213		12.50			
831214	2	13.24	9.01	2	22
		TOTALS		74,209	2,214,675

DAILY SAMPLE CATCH AND PASSAGE ESTIMATE SUMMARY 1983

CHINOOK O'S JOHN DAY DAM DATE OF REPORT: 1/16/84

EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW < 0.0%
EFFICIENCY = 0.000 + 0.000(FLOW) WHEN FLOW >= 0.0%

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830403		7.32		1	
830409		8.41			
830410		6.09			
830411	3	6.71		2	
830412		6.21		2	
830413		5.48		0	
830414		5.57		10	
830415		6.77		7	
830416		5.89			
830417		6.20			
830418	3	6.77		6	
830419		6.12		41	
830420		6.46		46	
830421		9.05		24	
830422		7.91		18	
830423		6.35			
830424		6.27			
830425	3	5.46		11	
830426		4.60		15	
830427		4.80		19	
830428		4.95		10	
830429		4.52		18	
830430		4.83		70	
830501		5.54		48	
830502		5.55		20	
830503		4.67		41	
830504		4.94		81	
830505		5.72		47	
830506		4.40		20	
830507		4.85		36	
830508		5.01		68	
830509		5.08		26	
830510		4.85		19	
830511		4.91		29	
830512		4.70		33	
830513		4.93		41	
830514		5.41		38	
830515		5.12		31	
830516		5.32		28	
830517		5.61		39	
830518		5.59		24	
830519		5.69		38	
830520		5.72		26	
830521		5.52		18	
830522		6.94		14	
830523		6.09		23	
830524		5.49		22	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830525		5.50		15	
830526		4.95		24	
830527		4.82		14	
830528		3.84		23	
830529		4.32		28	
830530		4.34		39	
830531		4.51		19	
830601		3.48		16	
830602		4.04		47	
830603		3.50		125	
830604		4.27		139	
830605		4.05		180	
830606		4.31		334	
830607		4.08		439	
830608		4.37		442	
830609		4.74		265	
830610		4.73		954	
830611		4.88		667	
830612		4.99		740	
830613		5.00		356	
830614		5.01		544	
830615		5.52		247	
830616		5.57		1,016	
830617		5.03		523	
830618		6.35			
830619		6.63			
830620	3	6.51		3,001	
830621		5.57		574	
830622		5.55		2,399	
830623		5.94		682	
830624		6.36			
830625	2	6.28		624	
830626		7.76		991	
830627		6.84		1,490	
830628		6.18		778	
830629		7.57		1,014	
830630		8.03		204	
830701		8.79		461	
830702		5.44		385	
830703		6.79		78	
830704		7.20		86	
830705		7.05		185	
830706		6.35		20	
830707		5.98		17	
830708		5.80		130	
830709		7.08		1,506	
830710		8.21		1,443	
830711		8.48		927	
830712		7.22		1,581	
830713		6.79		2,801	
830714		7.70		1,239	
830715		8.53		1,558	
830716		5.76		2,871	
830717		7.09		6,189	
830718		3.17		2,473	

DATE	% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830719	5.57		2,768	
830720	6.59		1,465	
830721	5.73		1,907	
830722	6.26		1,998	
830723	6.37		1,894	
830724	6.77		623	
830725	7.29		767	
830726	7.43		525	
830727	5.92		511	
830728	6.75		503	
830729	6.06		513	
830730	5.82		1,411	
830731	5.30		1,399	
830801	6.30		425	
830802	8.60		194	
830803	9.04		255	
830804	7.52		280	
830805	8.95		237	
830806	9.26		385	
830807	8.32		225	
830808	8.81		1,737	
830809	9.97		255	
830810	10.31		324	
830811	10.82		503	
830812	11.65		579	
830813	9.23		716	
830814	9.29		648	
830815	11.22		192	
830816	14.44			
830817 2	9.13		166	
830818	10.33		146	
830819	10.39		435	
830820	8.39		204	
830821	8.91		254	
830822	9.47		176	
830823	13.24		199	
830824	10.10		1,074	
830825	14.08		97	
830826	13.04		69	
830827	12.16		45	
830828	5.52		267	
830829	14.75		245	
830830	14.06		404	
830831	11.11		250	
830901	9.89		324	
830902	11.39		738	
830903	12.16		721	
830904	11.69		255	
830905	13.85		590	
830906	15.25		253	
830907	12.68		138	
830908	12.16		478	
830909	17.31		634	
830910	15.52		476	
830911	12.33		1,330	

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
830912		16.98		93	
830913		16.07		49	
830914		15.25		33	
830915		15.25		25	
830916		7.76		71	
830917		14.29		185	
830918		13.04		147	
830919		16.07		126	
830920		13.64		154	
830921		16.07		93	
830922		12.00		70	
830923		14.29		86	
830924		16.67			
830925		17.65			
830926	3	16.67		113	
830927		16.36		52	
830928		14.52			
830929		14.29			
830930	3	13.85		125	
831001		13.64			
831002		15.00			
831003	3	17.31		219	
831004		13.85		42	
831005		14.06		38	
831006		13.85		45	
831007		15.52		38	
831008		15.79			
831009		19.57			
831010	3	21.95		152	
831011		13.64		47	
831012		11.54		82	
831013		12.86		77	
831014		18.75		37	
831015		13.24			
831016		17.31			
831017	3	20.00		102	
831018		13.64		36	
831019		12.96		59	
831020		15.25		30	
831021		13.64		43	
831022		14.06			
831023		21.43			
831024	3	18.75		92	
831025		15.25		54	
831026		15.79		44	
831027		15.25		24	
831028		16.67		32	
831029		14.75			
831030		13.04			
831031	3	15.52		224	
831101		16.07			
831102	2	16.36		147	
831103		16.36			
831104	2	15.00		79	
831105		12.16			

DATE		% FLOW UNIT 3	SAMPLING EFFICIENCY	NUMBER COLLECTED	ESTIMATED PASSAGE
831106		16.07			
831107	3	14.06		250	
831108		12.50			
831109		12.33			
831110		10.71			
831111	4	13.64		191	
831112		16.07			
831113		16.36			
831114	3	16.36		376	
831115		17.65			
831116	2	17.65		309	
831117		12.16			
831118	2	12.16		179	
831119		10.59			
831120		13.04			
831121	3	13.85		315	
831122		8.82			
831123	2	12.00		359	
831124		12.16			
831125		11.69			
831126		11.39			
831127		14.52			
831128	5	15.52		324	
831129		12.68			
831130	2	11.39		203	
831201		11.24			
831202	2	10.59		172	
831203		11.54			
831204		11.69			
831205	3	11.54		206	
831206		9.47			
831207	2	11.69		148	
831208		11.39			
831209	2	12.50		107	
831210		12.68			
831211		15.00			
831212	3	18.00		70	
831213		12.50			
831214	2	13.24		62	
831215		12.68			
831216	2	14.06		88	
			TOTALS	84,244	

APPENDIX D

Mark Recapture Summary, Lower Granite Dam

BRAND RECAPTURE SUMMARY LOWER GRANITE DAM PAGE 1

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LD R 1 MARKED CHINOOK 1° S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	2	10	35
830426	3	30	113
830427	2	17	82
830428	2	17	82
830429	1	7	34
830501	1	7	31
830503	1	4	16
830504	3	12	46
830505	1	4	15
TOTALS	16	108	454

LD R 2 MARKED CHINOOK 1° S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	10	38
830427	1	8	41
830428	1	8	41
830429	2	14	68
830430	4	27	136
830501	2	14	63
830502	3	20	92
830503	2	8	31
830504	5	19	76
830506	1	4	17
830509	1	7	25
830627	1	10	30
TOTALS	24	149	658

LD R 3 MARKED CHINOOK 1° S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	1	7	31
830503	3	12	47
830504	2	8	30
830505	4	15	62
830506	1	4	17
830509	1	7	25
TOTALS	12	53	212

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LD R 4 MARKED CHINOOK 1* S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830504	1	4	15
830505	1	4	15
830506	8	31	137
830507	1	7	31
830509	1	7	25
830511	1	10	31
830627	1	10	30
TOTALS	14	73	284

RA R 1 MARKED CHINOOK 1* S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	2	14	50
830511	2	20	62
830518	2	10	30
TOTALS	6	44	142

RA R 2 MARKED CHINOOK 1* S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	2	14	50
830510	1	7	23
830511	1	10	31
830513	1	7	20
830525	1	7	20
TOTALS	6	45	144

RA R 3 MARKED CHINOOK 1* S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	1	10	30
830518	1	5	15
830523	1	7	20
TOTALS	3	22	65

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RA R 4 MARKED CHINOOK 1°S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830518	2	10	30
830519	1	5	15
830521	1	7	20
830524	1	10	30
TOTALS	5	32	95

RD R 1 MARKED CHINOOK 1°S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830413	1	20	98
830415	8	31	160
830416	7	28	133
830417	5	20	94
830418	5	20	97
830419	12	46	167
830420	12	53	192
830421	2	11	35
830422	3	16	53
830423	5	22	79
830424	6	30	110
830425	9	43	158
830426	6	60	226
830429	1	7	34
830430	1	7	34
TOTALS	83	414	1,670

RD R 2 MARKED CHINOOK 1°S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830416	1	4	19
830417	6	24	112
830418	2	8	39
830419	11	42	153
830420	8	35	128
830421	8	42	141
830422	8	42	142
830423	15	65	237
830424	15	74	275

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD R 2 MARKED CHINOOK 1*S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	15	71	263
830426	5	50	188
830428	6	50	247
830429	1	7	34
830430	2	14	68
830501	1	7	31
830502	5	34	153
830503	6	23	94
830504	3	12	46
830505	4	15	62
830506	1	4	17
830509	1	7	25
830513	2	14	40
TOTALS	126	644	2,514

RD R 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830420	1	4	16
830421	3	16	53
830422	1	5	18
830423	1	4	16
830424	8	39	146
830425	9	43	158
830426	8	80	301
830427	5	42	205
830428	8	67	329
830429	3	20	102
830430	2	14	68
830501	2	14	63
830503	4	15	63
830504	1	4	15
830505	1	4	15
830506	2	8	34
830507	2	14	61
830509	1	7	25
830510	1	7	23
TOTALS	63	407	1,711

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD R 4 MARKED CHINOOK 1. S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830423	3	13	47
830424	6	30	110
830425	13	62	228
830426	9	90	339
830427	7	58	287
830428	3	25	124
830429	5	34	170
830430	1	7	34
830501	1	7	31
830502	2	14	61
830504	1	4	15
830505	1	4	15
830506	1	4	17
830509	1	7	25
TOTALS	54	359	1,503

LD SU 3 MARKED CHINOOK 1. S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830403	7	20	138
830404	4	40	250
830407	6	60	277
830409	1	20	59
830410	2	40	190
830411	2	40	171
830412	1	20	88
830413	2	40	197
830414	6	22	105
830415	7	27	140
830417	3	12	56
830418	5	20	97
830419	7	27	98
830420	3	13	48
830421	5	26	88
830422	1	5	18
830423	8	35	126
830424	2	10	37
830425	2	10	35
830426	1	10	38
830427	1	8	41
830428	1	8	41
830430	1	7	34

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LD SU 3 MARKED CHINOOK 1*S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	3	20	94
830502	3	20	92
830503	2	8	31
830505	3	12	46
830506	1	4	17
TOTALS	90	584	2,652

RD SU 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830404	1	10	63
830405	2	20	146
830407	8	80	369
830408	5	100	378
830409	2	40	118
830410	2	40	190
830411	1	20	85
830412	4	80	353
830413	2	40	197
830414	6	22	105
830415	13	51	260
830416	14	56	267
830417	9	36	169
830418	4	16	77
830419	10	38	139
830420	15	66	239
830421	34	179	599
830422	27	142	478
830423	34	148	536
830424	33	163	604
830425	20	95	351
830426	6	60	226
830427	5	42	205
830428	4	33	165
830429	6	41	204
830430	4	27	136
830501	6	41	188
830502	2	14	61
830503	7	27	110
830504	9	35	137
830505	9	35	139
830506	7	27	120

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD SU 3 MARKED CHINOOK 1* S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830507	4	27	122
830509	5	34	125
830510	1	7	23
830511	1	10	31
830512	4	27	81
830521	1	7	20
830523	1	7	20
830528	4	133	565
830531	1	5	23
830606	1	33	127
830608	1	33	127
TOTALS	335	2,147	8,678

LD T 1 MARKED CHINOOK 1* S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830620	1	12	36
830621	1	10	30
830622	1	10	30
830623	6	60	178
830626	1	9	28
830627	1	10	30
830628	4	40	118
830629	1	26	77
830704	4	200	592
830712	1	50	148
830714	5	167	493
830718	1	20	59
830722	1	11	32
830724	1	9	28
TOTALS	29	634	1,879

LD T 4 MARKED CHINOOK 1* S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830407	1	10	46
830409	2	40	118
830410	1	20	95

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LD T 4 MARKED CHINOOK 1*S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830411	1	20	85
	830412	1	20	88
	830413	2	40	197
	830414	15	55	262
	830415	19	74	380
	830416	23	92	438
	830417	25	100	469
	830418	23	90	445
	830419	47	181	655
	830420	23	101	367
	830421	33	174	581
	830422	16	84	283
	830423	27	117	426
	830424	11	54	201
	830425	29	138	509
	830426	11	110	414
	830427	16	133	656
	830428	7	58	288
	830429	6	41	204
	830430	7	48	237
	830501	10	68	313
	830502	2	14	61
	830503	11	42	173
	830504	8	31	122
	830505	6	23	93
	830506	4	15	68
	830509	2	14	50
	830510	1	7	23
	830511	1	10	31
	830512	2	14	40
	830516	1	10	30
TOTALS		394	2,048	8,448

RA T 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830414	2	7	35
830415	1	4	20
830416	1	4	19
830418	4	16	77
830419	6	23	84
830420	3	13	48

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RA T 1 MARKED CHINOOK 1*S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830421	12	63	211
830422	8	42	142
830423	10	43	158
830424	26	128	476
830425	15	71	263
830426	5	50	188
830427	9	75	369
830428	4	33	165
830429	8	54	272
830430	5	34	170
830501	7	48	219
830502	7	48	215
830503	8	31	126
830504	11	42	168
830505	7	27	108
830506	6	23	103
830507	1	7	31
830509	3	20	75
830510	1	7	23
830511	2	20	62
830512	1	7	20
830518	2	10	30
830527	1	20	72
TOTALS	176	970	3,949

RA T 2 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830420	3	13	48
830421	4	21	70
830422	3	16	53
830423	7	30	110
830424	5	25	92
830425	17	81	298
830426	7	70	264
830427	6	50	246
830428	6	50	247
830429	6	41	204
830430	2	14	68
830501	3	20	94
830502	4	27	123
830503	9	35	142

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RA T 2 MARKED CHINOOK 1*S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830504	5	19	76
830505	7	27	108
830506	3	12	51
830507	3	20	92
830511	1	10	31
830524	1	10	30
830530	1	33	149
830601	1	5	22
TOTALS	104	629	2,618

RD T 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830423	2	9	32
830424	10	49	183
830425	10	48	175
830426	8	80	301
830427	7	58	287
830428	10	83	412
830429	12	82	408
830430	13	88	441
830501	12	82	375
830502	24	163	737
830503	30	115	472
830504	38	146	579
830505	38	146	589
830506	43	165	735
830507	21	143	642
830509	28	190	699
830510	13	88	303
830511	11	110	339
830512	9	61	181
830513	11	75	221
830514	3	30	89
830516	14	140	414
830517	2	14	40
830518	4	20	59
830519	3	15	44
830521	4	27	81
830523	11	75	221
830524	10	100	296
830525	16	109	324

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD T 1 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830526	3	60	201
	830527	6	117	434
	830528	2	67	283
	830530	2	67	299
	830531	3	15	68
	830601	4	20	89
	830602	3	15	63
	830604	3	15	59
	830609	1	17	65
TOTALS		444	2,904	11,240

RD T 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830409	2	40	118
830413	1	20	98
830414	3	11	52
830416	1	4	19
830420	2	9	32
830421	2	11	35
830422	1	5	18
830423	3	13	47
830425	1	5	18
830426	1	10	38
830427	6	50	246
830428	5	42	206
830429	7	48	238
830430	2	14	68
830501	2	14	63
830502	6	41	184
830503	22	85	346
830504	18	69	274
830505	21	81	325
830506	21	81	359
830507	13	88	398
830509	18	122	449
830510	5	34	117
830511	4	40	123
830512	2	14	40
830513	4	27	81
830516	2	20	59
830517	1	7	20

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD T 2 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830523	3	20	60
830524	1	10	30
830525	1	7	20
830602	1	5	21
TOTALS	182	1,047	4,202

RD T 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830403	110	315	2,167
830404	18	180	1,126
830405	8	80	585
830407	62	620	2,858
830408	20	400	1,511
830409	22	440	1,302
830410	25	500	2,373
830411	10	200	853
830412	20	400	1,763
830413	17	340	1,674
830414	91	331	1,590
830415	70	273	1,400
830416	78	312	1,486
830417	63	252	1,181
830418	52	203	1,007
830419	83	319	1,157
830420	48	211	766
830421	78	411	1,374
830422	60	316	1,061
830423	64	278	1,009
830424	42	207	769
830425	31	148	544
830426	13	130	489
830427	8	67	328
830428	7	58	288
830429	6	41	204
830501	4	27	125
830502	1	7	31
830503	4	15	63
830504	3	12	46
830507	1	7	31
830509	1	7	25
830628	1	10	30

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD T 3 MARKED CHINOOK 1*S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830704	2	100	296
TOTALS		1,123	7,217	31,512

RD 12 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830407	2	20	92
830408	1	20	76
830409	3	60	178
830410	3	60	285
830411	1	20	85
830412	4	80	353
830413	3	60	295
830414	26	95	454
830415	30	117	608
830416	35	140	667
830417	28	112	525
830418	21	82	407
830419	50	192	697
830420	31	137	495
830421	55	289	969
830422	35	184	619
830423	60	261	946
830424	30	148	549
830425	58	276	1,017
830426	23	230	866
830427	13	108	533
830428	9	75	371
830429	10	68	340
830430	8	54	271
830501	9	61	281
830502	6	41	184
830503	11	42	173
830504	7	27	107
830505	12	46	186
830506	6	23	103
830507	4	27	122
830509	8	54	200
830510	3	20	70
830511	3	30	93
830512	2	14	40
830513	1	7	20

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD 12 1 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830514	1	10	30
	830524	1	10	30
	830525	2	14	40
	830526	1	20	67
	830527	1	20	72
TOTALS		617	3,354	13,508

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RA F 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830506	60	231	615
830507	141	959	2,585
830509	189	1,286	2,826
830510	76	517	1,063
830511	111	1,110	2,051
830512	49	333	591
830513	56	381	675
830514	15	150	266
830516	46	460	816
830517	31	211	374
830518	31	155	275
830519	31	155	275
830520	34	231	410
830521	19	129	229
830523	16	109	193
830524	5	50	89
830525	15	103	182
830526	5	100	201
830527	4	78	174
830530	4	133	358
830531	3	15	41
830601	1	5	13
830602	1	5	13
830604	9	45	106
830606	3	100	228
830607	1	33	72
TOTALS	956	7,084	14,721

RA F 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	22	430	954
830528	19	633	1,609
830530	65	2,167	5,817
830531	33	165	450
830601	89	445	1,183
830602	62	310	775
830604	103	515	1,218
830606	15	500	1,141
830607	5	167	358
830608	4	133	305
830609	3	50	117

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RA F 4 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830610	5	83	191
830611	1	17	41
830612	1	17	39
830613	2	33	77
830616	2	20	39
830619	2	23	42
830623	1	10	18
830626	1	9	17
TOTALS	435	5,727	14,391

LA R 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830518	2	10	18
830524	1	10	18
TOTALS	3	20	36

LA R 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830521	3	20	36
830523	4	27	48
830527	2	39	87
830528	1	33	85
TOTALS	10	119	256

LA R 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830524	1	10	18
830525	3	21	36
830620	1	12	22
830625	1	10	17
TOTALS	6	53	93

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LA R 4 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830531	1	5	14
	830601	1	5	13
TOTALS		2	10	27

LD R 3 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830428	1	8	25
	830430	1	7	20
	830502	1	7	18
	830504	1	4	9
	830505	2	8	19
TOTALS		6	34	91

LD R 4 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830502	2	14	37
	830503	3	12	28
	830504	1	4	9
	830505	1	4	9
	830511	1	10	18
	830518	1	5	9
	830519	1	5	9
TOTALS		10	54	119

RA R 1 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830505	1	4	9
	830509	2	14	30
	830510	1	7	14
TOTALS		4	25	53

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RA R 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	1	7	15
830511	1	10	18
830523	1	7	12
TOTALS	3	24	45

RA R 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	3	20	36
830514	1	10	18
830523	1	7	12
830604	1	5	12
TOTALS	6	42	78

RA R 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	2	14	24
830514	1	10	18
830518	2	10	18
TOTALS	5	34	60

RD R 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830427	1	8	25
TOTALS	1	8	25

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LD S 2 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830628	1	10	18
TOTALS		1	10	18

RA S 1 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830509	23	156	344
	830510	42	286	587
	830511	107	1,070	1,977
	830512	80	544	965
	830513	105	714	1,266
	830514	28	280	496
	830516	82	820	1,454
	830517	43	293	519
	830518	65	325	576
	830519	60	300	532
	830520	36	245	434
	830521	29	197	350
	830523	62	422	748
	830524	32	320	567
	830525	61	417	740
	830526	20	400	803
	830527	29	567	1,258
	830528	7	233	593
	830530	9	300	805
	830531	2	10	27
	830601	2	10	27
	830602	5	25	63
	830604	7	35	83
	830606	1	33	76
	830607	1	33	72
	830609	2	33	78
	830610	2	33	77
	830612	1	17	39
	830618	1	12	21
	830620	1	12	22
	830724	1	9	17
TOTALS		946	8,151	15,616

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RA S 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	9	61	135
830510	12	82	168
830511	58	580	1,072
830512	35	238	422
830513	59	401	712
830514	17	170	301
830516	60	600	1,064
830517	27	184	326
830518	33	165	293
830519	33	165	293
830520	18	122	217
830521	23	156	277
830523	46	313	555
830524	27	270	479
830525	44	301	534
830526	9	180	361
830527	35	684	1,519
830528	10	333	847
830530	12	400	1,074
830531	14	70	191
830601	16	80	213
830602	13	65	163
830604	16	80	189
830606	5	167	380
830607	3	100	215
830608	2	67	152
830609	2	33	78
830610	3	50	115
830611	2	33	82
830612	6	100	236
830613	1	17	38
830614	2	33	71
830615	1	17	34
830618	2	24	42
830619	1	12	21
830620	2	24	43
830621	3	30	53
830622	1	10	18
830624	1	11	19
830625	1	10	17
830626	2	19	34
830705	2	100	177
TOTALS	668	6,557	13,230

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LA W 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	24	114	252
830426	30	300	677
830427	42	350	1,033
830428	57	475	1,407
830429	27	184	551
830430	26	177	528
830501	39	265	731
830502	24	163	442
830503	46	177	434
830504	105	404	959
830505	38	146	353
830506	45	173	461
830507	54	367	990
830509	74	503	1,106
830510	26	177	364
830511	33	330	610
830512	22	150	265
830513	17	116	205
830514	9	90	160
830516	21	210	372
830517	8	54	96
830518	22	110	195
830519	11	55	98
830520	12	82	145
830521	2	14	24
830523	9	61	109
830525	10	68	121
830526	3	60	120
830527	5	98	217
830531	2	10	27
830601	2	10	27
830602	1	5	13
830604	4	20	47
830606	1	33	76
830609	1	17	39
TOTALS	852	5,568	13,254

LA W 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830506	143	550	1,465
830507	183	1,245	3,355

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LA W 2 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	166	1,129	2,482
830510	40	272	560
830511	76	760	1,405
830512	19	129	229
830513	45	306	543
830514	12	120	213
830516	22	220	390
830517	13	88	157
830518	22	110	195
830519	19	95	168
830520	11	75	133
830521	4	27	48
830523	9	61	109
830524	5	50	89
830525	3	21	36
830526	2	40	80
830527	4	78	174
830531	2	10	27
830604	2	10	24
830606	1	33	76
830607	2	67	143
830613	1	17	38
TOTALS	806	5,513	12,139

LD 12 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	7	18
830503	6	23	57
830504	2	8	18
830505	9	35	84
830506	4	15	41
830507	5	34	92
830509	9	61	135
830510	6	41	84
830511	8	80	148
830512	6	41	72
830513	13	88	157
830514	6	60	106
830516	25	250	443
830517	10	68	121
830518	22	110	195

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LD 12 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830519	15	75	133
830520	15	102	181
830521	13	88	157
830523	25	170	302
830524	5	50	89
830525	24	164	291
830526	6	120	241
830527	15	293	651
830528	6	200	508
830530	9	300	805
830531	7	35	96
830601	5	25	66
830602	10	50	125
830604	25	125	296
830606	7	233	532
830608	1	33	76
830609	1	17	39
830610	4	67	153
830612	1	17	39
830615	1	17	34
830616	1	10	20
830624	1	11	19
830625	1	10	17
830629	1	26	46
830701	2	67	118
TOTALS	333	3,226	6,805

LD 12 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	2	14	37
830503	1	4	9
830504	1	4	9
830505	2	8	19
830506	2	8	20
830509	2	14	30
830511	1	10	18
830513	2	14	24
830521	2	14	24
830523	1	7	12
830525	2	14	24
830610	1	17	38
TOTALS	19	128	264

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD 12 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830430	1	7	20
830501	1	7	19
830503	1	4	9
830509	1	7	15
830510	5	34	70
830511	7	70	129
830512	1	7	12
830513	9	61	109
830514	3	30	53
830516	12	120	213
830517	5	34	60
830518	9	45	80
830519	6	30	53
830520	4	27	48
830521	2	14	24
830523	2	14	24
830524	5	50	89
830525	5	34	61
830526	2	40	80
830527	4	78	174
830528	2	67	169
830530	4	133	358
830531	5	25	68
830601	6	30	80
830602	6	30	75
830604	14	70	166
830606	4	133	304
830607	1	33	72
830608	5	167	381
830609	6	100	235
830610	6	100	230
830611	6	100	247
830612	3	50	118
830613	1	17	38
830614	2	33	71
830615	3	50	102
830616	3	30	59
830617	1	10	18
830618	1	12	21
830619	3	35	62
830620	1	12	22
830621	2	20	35
830622	3	30	53
830623	5	50	89
830624	3	32	57
830625	3	29	52

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD 12 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830626	1	9	17
TOTALS	185	2,120	4,541

RD 12 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	7	18
830504	1	4	9
830505	5	19	46
830506	2	8	20
830507	1	7	18
830509	7	48	105
830510	4	27	56
830512	3	20	36
830513	3	20	36
830514	2	20	35
830516	2	20	35
830517	2	14	24
830518	3	15	27
830519	3	15	27
830520	3	20	36
830523	5	34	60
830525	5	34	61
830526	2	40	80
830527	5	98	217
830528	3	100	254
830530	4	133	358
830601	3	15	40
830602	5	25	63
830604	14	70	166
830606	3	100	228
830608	4	133	305
830609	5	83	196
830610	5	83	191
830611	6	100	247
830612	3	50	118
830613	2	33	77
830614	1	17	36
830615	3	50	102
830616	6	60	118
830617	4	40	73
830618	3	36	64

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD 12 3 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830620	2	24	43
830621	6	60	106
830622	5	50	89
830623	5	50	89
830624	3	32	57
830625	5	49	86
830626	3	28	50
830627	2	20	36
830628	1	10	18
830629	1	26	46
830630	1	50	89
830702	1	33	59
830704	1	50	89
830712	3	150	266
TOTALS	172	2,230	4,705

RD 12 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	5	11
830426	2	20	45
830427	6	50	148
830429	2	14	41
830430	1	7	20
830501	1	7	19
830502	4	27	74
830503	4	15	38
830504	2	8	18
830505	3	12	28
830506	3	12	31
830507	2	14	37
830509	1	7	15
830510	2	14	28
830511	1	10	18
830512	1	7	12
830513	1	7	12
830516	1	10	18
830517	1	7	12
830518	1	5	9
TOTALS	40	258	634

EFFICIENCY BRAND RECAPTURE SUMMARY LOWER GRANITE DAM PAGE 1

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LA 3C 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830418	33	129
830419	106	408
830420	73	322
830421	54	284
830422	22	116
830423	12	52
830424	1	5
830425	1	5
830426	1	10
830501	2	14
830502	1	7
TOTALS	306	1,352

LA 3C 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830423	15	65
830424	44	217
830425	70	333
830426	4	40
830427	7	58
830502	1	7
TOTALS	141	720

LD 3C 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830429	26	177
830430	28	190
830501	25	170
830502	19	129
830503	10	38
830504	3	12
830505	1	4
830506	1	4
830507	1	7
830513	1	7
TOTALS	115	738

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

LD 3C 3 MARKED CHINOOK 1•S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830503	49	188
830504	64	246
830505	45	173
830506	20	77
830507	3	20
830509	1	7
TOTALS	182	711

RA 3C 1 MARKED CHINOOK 1•S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830416	36	144
830417	43	172
830418	63	246
830419	64	246
830420	20	88
830421	14	74
830422	4	21
830423	2	9
830424	3	15
830504	1	4
TOTALS	250	1,019

RA 3C 3 MARKED CHINOOK 1•S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830422	34	179
830423	54	235
830424	26	128
830425	11	52
830427	1	8
830428	1	8
830504	1	4
830505	2	8
TOTALS	130	622

EFFICIENCY BRAND RECAPTURE SUMMARY LOWER GRANITE DAM PAGE 3

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RD 3C 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830425	41	195
830426	28	280
830427	20	167
830428	6	50
830429	3	20
830430	1	7
830501	1	7
TOTALS	100	726

RD 3C 3 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830501	13	88
830502	44	299
830503	81	312
830504	35	135
830505	13	50
830506	3	12
830507	1	7
830510	1	7
TOTALS	191	910

LA 3L 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830506	9	35
830507	54	367
830509	29	197
830510	6	41
830511	1	10
TOTALS	99	650

EFFICIENCY BRAND RECAPTURE SUMMARY LOWER GRANITE DAM PAGE 4

EFFECTIVE DATES: 4/1/83 THRU 7/31/83

RA 3L 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830504	1	4
830505	51	196
830506	69	265
830507	11	75
830509	3	20
830511	1	10
TOTALS	136	570

RD 3L 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830509	38	259
830510	23	156
830511	17	170
830512	4	27
830513	1	7
830514	1	10
830521	1	7
TOTALS	85	636

EFFICIENCY BRAND RECAPTURE SUMMARY LOWER GRANITE DAM PAGE 1

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 3C 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830418	33	129
830419	106	408
830420	73	322
830421	54	284
830422	22	116
830423	12	52
830424	1	5
830425	1	5
830426	1	10
830501	2	14
830502	1	7
TOTALS	306	1,352

LA 3C 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830423	15	65
830424	44	217
830425	70	333
830426	4	40
830427	7	58
830502	1	7
TOTALS	141	720

LC 3C 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830429	26	177
830430	28	190
830501	25	170
830502	19	129
830503	10	38
830504	3	12
830505	1	4
830506	1	4
830507	1	7
830513	1	7
TOTALS	115	738

EFFECTIVE DATES: 4/1/33 THRU 8/31/83

LD 3C 3 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830503	49	188
830504	64	246
830505	45	173
830506	20	77
830507	3	20
830509	1	7
TOTALS	182	711

RA 3C 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830416	36	144
830417	43	172
830418	63	246
830419	64	246
830420	20	88
830421	14	74
830422	4	21
830423	2	9
830424	3	15
830504	1	4
TOTALS	250	1,019

RA 3C 3 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830422	34	179
830423	54	235
830424	26	128
830425	11	52
830427	1	8
830428	1	8
830504	1	4
830505	2	8
TOTALS	130	622

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 3C 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830425	41	195
830426	28	280
830427	20	167
830428	6	50
830429	3	20
830430	1	7
830501	1	7
TOTALS	100	726

RD 3C 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830501	13	88
830502	44	299
830503	81	312
830504	35	135
830505	13	50
830506	3	12
830507	1	7
830510	1	7
TOTALS	191	910

LA 3L 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830506	9	35
830507	54	367
830509	29	197
830510	6	41
830511	1	10
TOTALS	99	650

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 3L 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830504	1	4
830505	51	196
830506	69	265
830507	11	75
830509	3	20
830511	1	10
TOTALS	136	570

RD 3L 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830509	38	259
830510	23	156
830511	17	170
830512	4	27
830513	1	7
830514	1	10
830521	1	7
TOTALS	85	636

APPENDIX E

Mark Recapture Summary, McNary Dam

BRAND RECAPTURE SUMMARY MCNARY DAM PAGE 1

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA G 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	1	2	17
TOTALS	1	2	17

RA G 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
830506	1	4	16
TOTALS	2	5	26

RD G 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	1	4	27
TOTALS	1	4	27

RD G 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	1	3	29
830426	1	1	10
830430	1	3	24
830502	1	2	14
TOTALS	4	9	77

LA IC 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	2	17
TOTALS	1	2	17

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IC 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	1	3	29
830427	1	2	21
TOTALS	2	5	50

RA IC 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	1	3	29
830428	1	1	14
TOTALS	2	4	43

LA IF 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
TOTALS	1	1	10

LA IF 2 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	2	17
TOTALS	1	2	17

LA IF 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	2	6	58
830425	3	5	51
830501	1	2	17
830502	1	2	14
TOTALS	7	15	140

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RC IF 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
830508	1	3	25
TOTALS	2	4	35

LA IH 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830522	29	153	528
830523	20	100	483
830524	10	33	274
830525	3	6	20
830526	1	5	32
TOTALS	63	297	1,337

LA IH 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830524	2	7	55
830525	98	204	652
830526	27	128	862
830527	1	2	16
830528	3	7	36
830530	1	3	17
TOTALS	132	351	1,638

LA IH 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	1	2	16
830528	65	160	778
830529	1	3	16
830530	3	10	50
830531	1	3	14
830602	1	3	23
TOTALS	72	181	897

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IK 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	3	10	74
830509	7	15	96
830510	12	39	211
830511	23	94	901
830512	28	68	795
830513	31	85	422
830514	13	53	458
830515	27	77	483
830516	30	86	513
830517	47	143	472
830518	41	200	589
830519	28	159	509
830520	48	234	840
830521	12	54	176
830522	18	95	328
830523	16	80	386
830524	11	36	302
830525	16	33	107
830526	2	10	64
830527	1	2	16
830530	1	3	17
830531	1	3	14
TOTALS	416	1,579	7,773

LA IK 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	2	6	20
830518	3	15	43
830519	10	57	182
830520	36	176	630
830521	54	242	793
830522	51	270	928
830523	49	244	1,183
830524	47	154	1,290
830525	46	96	306
830526	19	90	607
830527	6	15	96
830528	11	27	132
830530	3	10	50
830531	5	14	69
830601	2	7	34

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IK 2 MARKED CHINOOK 1*S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830602	1	3	23
	830603	1	2	17
TOTALS		346	1,428	6,403

LA IL 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830430	1	3	24
830501	2	4	35
830502	2	4	28
830503	5	12	81
830504	20	50	249
830505	10	37	270
830506	6	22	94
830507	23	85	478
830508	33	108	819
830509	23	48	315
830510	41	134	722
830511	43	176	1,684
830512	24	59	682
830513	70	191	952
830514	52	212	1,833
830515	47	134	840
830516	45	129	769
830517	82	250	824
830518	93	454	1,335
830519	84	477	1,528
830520	78	380	1,365
830521	53	238	779
830522	56	296	1,019
830523	29	144	700
830524	47	154	1,290
830525	40	83	266
830526	8	38	255
830527	2	5	32
830528	7	17	84
830529	1	3	16
830530	1	3	17
830531	3	9	41
830601	2	7	34
830602	1	3	23
830603	2	5	33

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA TL 1 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830606	1	4	16
	830610	1	4	15
	830614	1	5	19
	830617	2	12	40
	830725	1	2	4
TOTALS		1,042	4,001	19,610

LA TL 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830503	3	7	48
830504	3	7	37
830505	5	18	135
830506	5	19	79
830507	10	37	208
830508	9	30	223
830509	17	35	233
830510	23	75	405
830511	28	114	1,096
830512	21	51	596
830513	66	180	898
830514	48	196	1,692
830515	51	146	912
830516	53	151	906
830517	93	284	934
830518	88	429	1,264
830519	84	477	1,528
830520	77	376	1,347
830521	62	278	911
830522	55	291	1,001
830523	58	289	1,401
830524	45	148	1,235
830525	46	96	306
830526	5	24	160
830527	11	27	176
830528	4	10	48
830529	1	3	16
830530	2	7	34
830531	5	14	69
830601	2	7	34
830602	1	3	23
830603	1	2	17

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IL 2 MARKED CHINOOK 1*S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830604	1	2	11
830605	2	7	32
830606	1	4	16
830608	1	4	17
830609	2	7	31
830611	1	4	14
830612	1	4	17
830613	1	4	16
TOTALS	992	3,867	18,126

LA IM 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	24	98	846
830515	19	54	340
830516	12	34	205
830517	5	15	50
830518	1	5	14
TOTALS	61	206	1,455

LA IM 2 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	11	31	188
830517	21	64	211
830518	15	73	215
830520	1	5	17
830523	1	5	24
TOTALS	49	178	655

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IN 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830518	1	5	14
830519	12	68	218
830520	26	127	455
830521	18	81	264
830522	2	11	36
830523	1	5	24
830524	1	3	27
TOTALS	61	300	1,038

LA IN 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	1	4	39
830512	4	10	114
830513	26	71	354
830514	15	61	529
830515	34	97	608
830516	34	97	581
830517	54	165	542
830518	37	180	531
830519	41	233	746
830520	47	229	822
830521	30	135	441
830522	33	175	601
830523	26	130	628
830524	16	52	439
830525	25	52	166
830526	3	14	96
830527	4	10	64
830528	1	2	12
830530	1	3	17
830603	1	2	17
TOTALS	433	1,722	7,347

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IN 2 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830519	1	6	18
830520	5	24	87
830521	12	54	176
830522	46	243	837
830523	61	304	1,473
830524	53	174	1,455
830525	53	110	353
830526	17	81	543
830527	12	30	192
830528	8	20	96
830529	2	7	32
830530	6	20	101
830531	13	37	179
830601	2	7	34
830602	3	10	69
830603	2	5	33
830604	1	2	11
830605	1	4	16
TOTALS	298	1,138	5,705

LA IR 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	3	6	41
830510	8	26	141
830511	11	45	431
830512	28	68	795
830513	28	76	381
830514	13	53	458
830515	37	106	662
830516	28	80	479
830517	36	110	362
830518	37	180	531
830519	37	210	673
830520	38	185	665
830521	10	45	147
830522	22	116	401
830523	16	80	386
830524	8	26	220
830525	14	29	93
830526	3	14	96
830527	1	2	16

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IR 1 MARKED CHINOOK 1*S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830528	1	2	12
830529	1	3	16
830531	1	3	14
TOTALS	381	1,465	7,020

LA IR 2 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	7	19	95
830514	13	53	458
830515	22	63	393
830516	26	74	444
830517	52	159	522
830518	43	210	617
830519	29	165	528
830520	43	210	752
830521	36	161	529
830522	15	79	273
830523	23	115	555
830524	25	82	686
830525	28	58	186
830526	7	33	224
830527	2	5	32
830528	3	7	36
830529	1	3	16
830530	1	3	17
830531	4	11	55
TOTALS	380	1,510	6,418

LA IS 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830506	12	44	189
830507	25	92	520
830508	27	89	670
830509	13	27	178
830510	4	13	70
830511	3	12	117

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IS 1 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830512	3	7	85
830513	1	3	14
830515	2	6	36
830516	2	6	34
TOTALS	92	299	1,913

LA IS 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	9	30	223
830509	27	56	370
830510	10	33	176
830511	7	29	274
830512	1	2	28
830513	4	11	54
830517	1	3	10
830518	2	10	29
830519	1	6	18
830520	1	5	17
TOTALS	63	185	1,199

LA IT 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830510	31	102	546
830511	49	200	1,919
830512	37	90	1,051
830513	15	41	204
830514	3	12	106
830516	2	6	34
830517	1	3	10
830523	1	5	24
830602	1	3	23
TOTALS	140	462	3,917

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA TT 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830512	13	32	369
830513	26	71	354
830514	3	12	106
830515	5	14	89
830516	3	9	51
830517	1	3	10
830518	1	5	14
830521	1	4	15
830525	1	2	7
TOTALS	54	152	1,015

LA TU 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	2	14
830503	11	27	178
830504	24	60	299
830505	9	33	243
830506	12	44	189
830507	29	107	603
830508	22	72	546
830509	18	37	246
830510	35	115	616
830511	37	151	1,449
830512	20	49	568
830513	43	117	585
830514	26	106	917
830515	17	49	304
830516	18	51	308
830517	39	119	392
830518	39	190	560
830519	26	148	473
830520	19	93	332
830521	4	18	59
830522	9	48	164
830523	9	45	217
830524	5	20	165
830525	1	2	7
830526	1	5	32
830528	2	5	24
830531	1	3	14
830602	1	3	23

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IU 1 MARKED CHINOOK 1*S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830610	1	4	15
TOTALS		480	1,723	9,542

LA IV 1 MARKED CHINOOK 1*S

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830509	12	25	184
	830510	13	43	229
	830511	8	33	313
	830512	16	39	454
	830513	34	93	463
	830514	29	118	1,022
	830515	37	106	662
	830516	69	197	1,180
	830517	102	311	1,024
	830518	91	444	1,307
	830519	114	648	2,074
	830520	89	434	1,557
	830521	71	318	1,043
	830522	62	328	1,129
	830523	58	289	1,401
	830524	27	89	741
	830525	23	48	153
	830526	2	10	64
	830527	3	7	48
	830528	2	5	24
	830529	2	7	32
	830531	2	6	27
	830601	2	7	34
	830609	1	4	16
	830611	1	4	14
	830613	2	9	31
	830619	1	24	63
TOTALS		873	3,646	15,269

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IV 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	2	5	27
830514	8	33	282
830515	16	46	286
830516	22	63	376
830517	60	183	603
830518	58	283	833
830519	73	415	1,328
830520	109	532	1,907
830521	69	309	1,014
830522	79	418	1,438
830523	86	428	2,077
830524	67	220	1,839
830525	39	81	260
830526	29	138	926
830527	10	25	160
830528	15	37	180
830530	6	20	101
830531	2	6	27
830601	3	11	51
830603	1	2	17
830610	1	4	15
830613	1	4	16
TOTALS	756	3,263	13,763

LA IX 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	1	4	35
830515	5	14	89
830516	20	57	342
830517	39	119	392
830518	58	283	833
830519	52	295	946
830520	57	278	997
830521	33	148	485
830522	24	127	437
830523	30	149	724
830524	33	108	906
830525	22	46	146
830526	8	38	255
830527	7	17	112
830528	3	7	36

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IX 1 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830530	3	10	50
830531	2	6	27
830602	1	3	23
830605	2	7	32
TOTALS	400	1,716	6,867

LA IX 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	1	3	17
830517	13	40	131
830518	44	215	632
830519	38	216	691
830520	65	317	1,137
830521	43	193	632
830522	32	169	583
830523	33	164	797
830524	34	111	933
830525	31	65	206
830526	6	29	192
830527	9	22	144
830528	4	10	48
830529	2	7	32
830530	2	7	34
830531	4	11	55
830603	1	2	17
TOTALS	362	1,581	6,281

LA IY 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830430	1	3	24
830502	2	4	28
830503	1	2	16
830504	1	2	12
830505	2	7	54
830506	3	11	47
830507	11	40	229

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA TY 1 MARKED CHINOOK 1'S

(CONTINUED) DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	14	46	347
830509	26	54	356
830510	24	79	422
830511	41	167	1,605
830512	49	120	1,392
830513	62	169	844
830514	39	159	1,375
830515	60	171	1,073
830516	65	186	1,111
830517	90	274	904
830518	65	317	933
830519	92	523	1,673
830520	83	405	1,452
830521	47	211	690
830522	34	180	619
830523	27	135	652
830524	26	85	714
830525	27	56	180
830526	4	19	128
830527	1	2	16
830528	2	5	24
830531	5	14	69
830604	1	2	11
830613	1	4	16
TOTALS	906	3,452	17,016

LA TY 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	2	4	27
830512	1	2	28
830513	7	19	95
830514	11	45	388
830515	25	71	447
830516	49	140	838
830517	65	198	653
830518	81	395	1,163
830519	81	460	1,473
830520	114	556	1,995
830521	66	296	970
830522	82	434	1,493
830523	64	319	1,545

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IY 2 MARKED CHINOOK 1'S

(CONTINUED) DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830524	59	193	1,620
830525	59	123	393
830526	9	43	287
830527	8	20	128
830528	4	10	48
830530	1	3	17
830531	4	11	55
830601	2	7	34
830605	1	4	16
830606	1	4	16
830612	1	4	17
830616	1	5	15
TOTALS	798	3,366	13,761

LA IZ 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	1	3	25
830509	2	4	27
830510	8	26	141
830511	10	41	392
830512	5	12	142
830513	26	71	354
830514	26	106	917
830515	35	100	626
830516	45	129	769
830517	81	247	813
830518	85	415	1,220
830519	74	420	1,346
830520	71	346	1,242
830521	78	350	1,146
830522	82	434	1,493
830523	69	344	1,666
830524	44	144	1,208
830525	72	150	479
830526	17	81	543
830527	12	30	192
830529	2	7	32
830530	2	7	34
830531	12	34	165
830601	5	18	85
830602	3	10	69

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA IZ 1 MARKED CHINOOK 1'S

(CONTINUED) DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830604	4	10	43
830609	1	4	16
830612	2	9	33
830723	1	4	10
830801	1	1	3
TOTALS	876	3,557	15,231

LA IZ 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	1	4	39
830512	2	5	57
830513	10	27	136
830514	11	45	388
830515	15	43	268
830516	31	89	530
830517	51	156	512
830518	82	400	1,177
830519	54	307	982
830520	71	346	1,242
830521	65	291	955
830522	86	455	1,566
830523	59	294	1,425
830524	67	220	1,839
830525	56	117	373
830526	16	76	511
830527	11	27	176
830528	13	32	156
830529	6	20	95
830530	3	10	50
830531	10	29	137
830601	11	40	186
830602	2	7	46
830605	2	7	32
830606	1	4	16
830608	2	8	34
830611	3	11	43
830612	2	9	33
830613	3	13	47
830726	1	4	9
TOTALS	747	3,096	13,060

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LOT 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830503	3	7	48
830504	7	17	87
830505	3	11	81
830506	4	15	63
830507	3	11	62
830508	6	20	149
830509	2	4	27
830510	3	10	53
830511	1	4	39
830513	1	3	14
830515	1	3	18
830517	1	3	10
830523	1	5	24
TOTALS	36	113	675

LOT 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	3	6	42
830504	6	15	75
830505	6	22	162
830506	3	11	47
830507	7	26	146
830508	7	23	174
830509	4	8	55
830510	7	23	123
830511	2	8	78
830512	5	12	142
830513	2	5	27
830516	1	3	17
830517	2	6	20
830518	1	5	14
TOTALS	56	173	1,122

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LD R 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830510	1	3	18
830512	1	2	28
830513	2	5	27
830514	1	4	35
830521	1	4	15
830522	1	5	18
TOTALS	7	23	141

LD R 4 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	2	8	71
830515	1	3	18
830518	1	5	14
830519	1	6	18
TOTALS	5	22	121

RA R 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830512	1	2	28
830513	1	3	14
830514	1	4	35
830516	1	3	17
830517	2	6	20
830518	2	10	29
830519	2	11	36
830520	2	10	35
830521	1	4	15
TOTALS	13	53	229

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA R 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	1	3	18
830516	2	6	34
830517	2	6	20
830518	2	10	29
830522	1	5	18
830525	1	2	7
TOTALS	9	32	126

RA R 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830521	1	4	15
830524	1	3	27
TOTALS	2	7	42

RC R 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	4	5	40
830427	3	6	62
830428	5	6	68
830429	5	8	40
830430	5	16	122
830501	3	6	52
830502	2	4	28
830503	1	2	16
830504	4	10	50
830505	2	7	54
830507	1	4	21
830508	1	3	25
830511	1	4	39
330515	1	3	18
TOTALS	38	84	635

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD F 2 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
830428	5	6	68
830429	6	10	48
830430	5	16	122
830501	9	19	157
830502	2	4	28
830503	8	20	129
830504	15	37	187
830505	8	29	216
830506	4	15	63
830507	8	29	166
830508	5	16	124
830509	6	12	82
830510	6	20	106
830511	4	16	157
830512	1	2	28
830513	2	5	27
830515	1	3	18
830516	1	3	17
830520	1	5	17
TOTALS	98	268	1,770

RD F 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830429	1	2	8
830501	1	2	17
830502	1	2	14
830503	10	25	162
830504	16	40	200
830505	12	44	325
830506	3	11	47
830507	8	29	166
830508	4	13	99
830509	1	2	14
830510	3	10	53
830511	3	12	117
830513	2	5	27
830514	1	4	35
830516	1	3	17
830522	1	5	18
TOTALS	68	209	1,319

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RC R 4 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830429	2	3	16
830501	2	4	35
830502	2	4	28
830503	6	15	97
830504	12	30	150
830505	11	40	298
830506	3	11	47
830507	7	26	146
830508	2	7	50
830509	7	15	96
830510	2	7	35
830511	1	4	39
830512	2	5	57
830513	2	5	27
TOTALS	61	176	1,121

LD SU 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	3	9	87
830425	2	3	34
830426	12	15	120
830427	4	8	82
830428	3	4	41
830429	3	5	24
830430	1	3	24
830501	1	2	17
830502	1	2	14
830503	3	7	48
830504	1	2	12
830508	1	3	25
830509	1	2	14
830510	1	3	18
TOTALS	37	68	560

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD SU 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	2	17
830426	6	8	60
830427	6	12	124
830428	4	5	54
830429	7	12	56
830430	3	10	73
830501	5	10	87
830502	5	10	69
830503	10	25	162
830504	21	52	262
830505	11	40	298
830506	5	19	79
830507	6	22	125
830508	3	10	74
830509	6	12	82
830510	7	23	123
830511	6	24	235
830512	3	7	85
830513	3	8	41
830515	5	14	89
830516	3	9	51
830517	2	6	20
830518	2	10	29
830519	2	11	36
830520	3	15	52
830521	1	4	15
830523	2	10	48
830524	2	7	55
830525	1	2	7
830531	1	3	14
TOTALS	142	402	2,522

LD T 4 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	1	3	29
830425	3	5	51
830426	24	31	239
830427	15	31	309
830428	16	21	218
830429	26	44	208
830430	7	23	170

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LOT 4 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	9	19	157
830502	10	21	138
830503	23	57	372
830504	47	117	586
830505	18	66	487
830506	10	37	157
830507	19	70	395
830508	8	26	198
830509	8	17	110
830510	6	20	106
830511	5	20	196
830512	2	5	57
830513	1	3	14
830515	1	3	18
830516	1	3	17
830517	1	3	10
830627	1	50	116
TOTALS	262	695	4,358

BA T 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	1	3	29
830425	1	2	17
830426	5	6	50
830428	4	5	54
830429	2	3	16
830430	3	10	73
830501	5	10	87
830502	2	4	28
830503	18	45	291
830504	19	47	237
830505	9	33	243
830506	8	30	126
830507	11	40	229
830508	14	46	347
830509	8	17	110
830510	8	26	141
830511	5	20	196
830512	3	7	85
830513	2	5	27
830514	1	4	35

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA T 1 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	1	3	18
830517	1	3	10
830522	1	5	18
TOTALS	132	374	2,467

RA T 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830427	1	2	21
830428	2	3	27
830429	2	3	16
830430	2	7	49
830501	3	6	52
830502	5	10	69
830503	9	22	145
830504	14	35	175
830505	7	26	189
830506	4	15	63
830507	12	44	249
830508	6	20	149
830510	2	7	35
830511	2	8	78
830512	1	2	28
830513	5	14	68
830515	1	3	18
830516	2	6	34
TOTALS	80	233	1,465

RC T 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	2	14
830503	4	10	65
830504	12	30	150
830505	9	33	243
830506	7	26	110
830507	18	66	374
830508	18	59	446

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD T 1 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830509	19	40	260
	830510	19	62	334
	830511	18	73	705
	830512	10	24	284
	830513	24	65	327
	830514	9	37	317
	830515	16	46	286
	830516	10	29	171
	830517	19	58	191
	830518	7	34	101
	830519	11	63	200
	830520	6	29	105
	830521	2	9	29
	830522	5	26	91
	830523	6	30	145
	830524	6	20	165
	830525	9	19	60
	830526	3	14	96
	830527	2	5	32
	830530	1	3	17
	830531	5	14	69
	830601	1	4	17
	830602	2	7	46
	830603	1	2	17
	830604	1	2	11
	830605	1	4	16
	830606	1	4	16
	830607	1	4	14
	830609	2	7	31
	830615	1	4	14
	830616	1	5	15
	830617	1	6	20
	830701	1	20	47
TOTALS		290	995	5,651

RD T 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	2	14
830503	4	10	65
830504	8	20	100
830505	7	26	189

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RC T 2 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830506	2	7	31
830507	8	29	166
830508	9	30	223
830509	8	17	110
830510	9	29	158
830511	2	8	78
830512	6	15	170
830513	15	41	204
830514	5	20	176
830515	7	20	125
830516	5	14	85
830517	8	24	80
830518	1	5	14
830519	1	6	18
830521	2	9	29
830522	1	5	18
830523	1	5	24
830524	1	3	27
830531	1	3	14
830610	1	4	15
TOTALS	113	352	2,133

RC T 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	48	145	1,389
830425	131	220	2,234
830426	487	624	4,855
830427	198	412	4,080
830428	182	233	2,478
830429	114	192	913
830430	46	151	1,120
830501	42	87	733
830502	35	73	485
830503	27	67	436
830504	39	97	487
830505	8	29	216
830506	9	33	142
830507	5	18	104
830508	6	20	149
830509	1	2	14
830510	4	13	70

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 1 3 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830512	1	2	28
830514	1	4	35
830515	2	6	36
TOTALS	1,386	2,428	20,004

RD 12 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	3	9	87
830425	4	7	68
830426	61	78	608
830427	35	73	721
830428	40	51	545
830429	40	67	320
830430	25	82	609
830501	31	65	541
830502	35	73	485
830503	47	117	760
830504	62	154	773
830505	26	95	703
830506	20	74	315
830507	37	136	769
830508	23	75	571
830509	9	19	123
830510	3	10	53
830511	12	49	470
830512	5	12	142
830513	4	11	54
830514	1	4	35
830515	2	6	36
830516	3	9	51
830517	2	6	20
830518	3	15	43
830519	1	6	18
830520	2	10	35
TOTALS	536	1,313	8,955

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 2 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
830430	1	3	24
TOTALS	2	4	34

LA 2 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	2	17
830426	1	1	10
830429	1	2	8
TOTALS	3	5	35

RA 2 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
TOTALS	1	1	10

RD 2 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	1	3	29
TOTALS	1	3	29

RD 2 2 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	1	2	14
TOTALS	1	2	14

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 3C 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	4	5	40
830427	5	10	103
830428	38	49	517
830429	35	59	280
830430	14	46	341
830501	4	8	70
830502	3	6	42
830503	2	5	32
830504	4	10	50
830507	3	11	62
830510	1	3	18
TOTALS	113	212	1,555

LA 3C 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830429	1	2	8
830430	6	20	146
830501	15	31	262
830502	22	46	305
830503	11	27	178
830504	16	40	200
830505	8	29	216
830506	6	22	94
830507	3	11	62
830508	1	3	25
TOTALS	89	231	1,496

LD 3C 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830504	2	5	25
830505	14	51	379
830506	17	63	268
830507	47	173	977
830508	23	75	571
830509	16	33	219
830510	7	23	123

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LD 3C 1 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	2	8	78
830512	1	2	28
830513	2	5	27
830516	1	3	17
830518	1	5	14
830523	1	5	24
TOTALS	134	451	2,750

LD 3C 3 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	3	6	41
830510	23	75	405
830511	15	61	587
830512	6	15	170
830513	4	11	54
830514	1	4	35
830515	2	6	36
830516	4	11	68
830517	1	3	10
830530	1	3	17
830613	1	4	16
TOTALS	61	199	1,439

RA 3C 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	41	53	409
830427	25	52	515
830428	29	37	395
830429	30	50	240
830430	12	39	292
830501	6	12	105
830502	1	2	14
830504	3	7	37
TOTALS	147	252	2,007

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 3C 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830428	6	8	82
830429	7	12	56
830430	12	39	292
830501	12	25	210
830502	8	17	111
830503	3	7	48
830504	3	7	37
830505	3	11	81
830506	1	4	16
TOTALS	55	130	933

RD 3C 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830430	1	3	24
830501	7	15	122
830502	23	48	319
830503	47	117	760
830504	34	84	424
830505	16	59	433
830506	10	37	157
830507	5	18	104
830508	4	13	99
830509	3	6	41
830510	1	3	18
830511	1	4	39
TOTALS	152	407	2,540

RD 3C 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830506	1	4	16
830507	7	26	146
830508	10	33	248
830509	23	48	315
830510	23	75	405
830511	13	53	509
830512	6	15	170

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 3C 3 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830513	1	3	14
	830514	2	8	71
	830515	2	6	36
	830518	1	5	14
TOTALS		89	276	1,944

LA 3L 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	13	35	177
830514	14	57	494
830515	15	43	268
830516	11	31	188
830517	11	34	110
830518	8	39	115
830519	1	6	18
830520	1	5	17
830523	1	5	24
830525	1	2	7
830526	1	5	32
TOTALS	77	262	1,450

RA 3L 1 MARKED CHINOOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830510	2	7	35
830511	4	16	157
830512	5	12	142
830513	13	35	177
830514	4	16	141
830515	8	23	143
830516	3	9	51
830517	1	3	10
TOTALS	40	121	856

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RC 3L 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	1	4	35
830515	7	20	125
830516	7	20	120
830517	14	43	141
830518	14	68	201
830519	6	34	109
830520	6	29	105
830521	3	13	44
830523	1	5	24
830524	3	10	82
830525	3	6	20
TOTALS	65	252	1,006

LA 3X 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
830429	1	2	8
830430	1	3	24
830502	3	6	42
830503	4	10	65
830504	12	30	150
830505	18	66	487
830506	22	81	346
830507	25	92	520
830508	22	72	546
830509	21	44	288
830510	26	85	458
830511	11	45	431
830512	6	15	170
830513	9	25	122
830514	9	37	317
830515	5	14	89
830516	3	9	51
830518	1	5	14
830519	10	57	182
830520	2	10	35
830521	1	4	15
830522	1	5	18
830523	1	5	24
830524	3	10	82
830525	4	8	27

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 3X 1 MARKED CHINOOK 1*S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830526	1	5	32
830527	1	2	16
TOTALS	224	748	4,569

LA 7C 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
830428	1	1	14
TOTALS	2	2	24

LA 7C 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	1	3	29
830426	1	1	10
TOTALS	2	4	39

RA 7C 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830424	1	3	29
TOTALS	1	3	29

RA 7C 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	2	17
830510	1	3	18
TOTALS	2	5	35

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 7C 3 MARKED CHINOOK 1*S

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830426	1	1	10
TOTALS		1	1	10

LA 7F 1 MARKED CHINOOK 1*S

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	1	2	17
TOTALS		1	2	17

LA 7F 3 MARKED CHINOOK 1*S

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830426	1	1	10
	830514	1	4	35
TOTALS		2	5	45

RA 7F 3 MARKED CHINOOK 1*S

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830428	1	1	14
TOTALS		1	1	14

RD 7F 1 MARKED CHINOOK 1*S

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830426	1	1	10
	830427	1	2	21
	830503	1	2	16
TOTALS		3	5	47

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RO 7F 3 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
TOTALS	1	1	10

LA 7H 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	1	10
830430	2	7	49
830502	4	8	55
830503	3	7	48
830504	7	17	87
830505	7	26	189
830506	7	26	110
830507	15	55	312
830508	6	20	149
830509	12	25	164
830510	15	49	264
830511	11	45	431
830512	5	12	142
830513	2	5	27
830514	3	12	106
830515	9	26	161
830516	6	17	103
830517	10	30	100
830518	12	59	172
830519	3	17	55
830520	7	34	122
830521	5	22	73
830522	3	16	55
830523	7	35	169
830524	11	36	302
830525	11	23	73
830526	5	24	160
830527	2	5	32
830529	1	3	16
830530	1	3	17
TOTALS	193	665	3,753

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 7N 3 MARKED CHINOOK 1'S

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830508	2	7	50
	830525	2	4	13
	830603	1	2	17
TOTALS		5	13	80

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA F 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	3	12	153
830512	6	15	247
830513	36	98	395
830514	18	73	840
830515	20	57	360
830516	22	63	359
830517	7	21	45
830518	6	29	53
830519	3	17	34
830520	11	54	128
830521	4	18	37
830522	1	5	12
830523	2	10	38
830524	1	3	36
830525	4	8	17
830526	1	5	35
830527	2	5	34
830528	1	2	9
830531	1	3	11
830601	1	4	13
830603	1	2	19
830604	1	2	8
830610	2	7	20
TOTALS	154	513	2,903

RA F 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830531	19	54	205
830601	33	121	426
830602	29	95	782
830603	17	42	316
830604	12	30	96
830605	6	22	70
830606	6	22	69
830608	5	20	62
830609	2	7	23
830610	3	11	31
830611	3	11	30
830612	1	4	11
830613	4	18	40
TOTALS	140	457	2,161

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA IU 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	3	4	40
830428	3	4	52
830429	4	7	25
830430	3	10	99
830501	27	56	627
830502	11	23	166
830503	7	17	120
830504	10	25	101
830505	6	22	219
830506	8	30	91
830507	5	18	94
830508	7	23	234
830509	5	10	73
830510	6	20	91
830511	5	20	255
830512	2	5	82
830513	8	22	88
830514	4	16	187
830515	6	17	108
830516	5	14	82
830517	6	18	38
830518	4	20	35
830519	1	6	11
830520	4	20	46
830521	3	13	28
830522	5	26	59
830523	1	5	19
830524	3	10	109
830525	5	10	21
830526	3	14	106
830527	2	5	34
830528	4	10	38
830530	3	10	41
830531	1	3	11
830601	2	7	26
830603	1	2	19
830605	1	4	12
830606	1	4	11
830616	2	10	19
830617	1	6	13
TOTALS	188	566	3,530

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LD F 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830504	2	5	20
TOTALS	2	5	20

LD F 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	1	4	37
830507	1	4	19
830508	1	3	33
830509	1	2	15
TOTALS	4	13	104

LD F 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	2	7	67
830511	1	4	51
830515	1	3	18
830527	1	2	17
TOTALS	5	16	153

RA F 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	1	4	51
TOTALS	1	4	51

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA R 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830528	1	2	9
830601	1	4	13
TOTALS	2	6	22

LA S 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	10	37	366
830506	32	118	365
830507	33	121	618
830508	29	95	970
830509	41	85	602
830510	35	115	529
830511	19	78	969
830512	25	61	1,028
830513	44	120	483
830514	13	53	606
830515	23	66	414
830516	30	86	490
830517	13	40	83
830518	19	93	167
830519	10	57	115
830520	38	185	441
830521	23	103	215
830522	47	249	557
830523	96	478	1,830
830524	160	525	5,838
830525	217	452	912
830526	91	432	3,207
830527	111	275	1,862
830528	184	452	1,746
830529	31	102	388
830530	54	177	744
830531	67	191	723
830601	45	165	580
830602	53	174	1,429
830603	44	109	819
830604	21	52	168
830605	19	70	223
830606	16	59	183
830607	10	37	95
830608	16	65	197

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA S 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830609	16	59	183
830610	20	74	204
830611	14	51	138
830612	14	63	155
830613	11	49	111
830614	3	15	40
830615	3	12	27
830616	5	24	47
830617	8	48	101
830618	1	20	42
830623	1	16	22
830628	1	50	66
830701	1	20	27
830715	1	12	16
830716	1	6	9
830718	1	12	15
830719	1	7	10
830721	1	3	4
830725	1	2	2
830726	1	4	5
830728	1	2	3
830729	1	1	2
830804	1	0	0
830818	1	1	1
TOTALS	1,828	6,128	31,192

LD S 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830506	4	15	46
830507	36	132	674
830508	26	85	869
830509	31	65	455
830510	22	72	332
830511	13	53	663
830512	20	49	823
830513	29	79	319
830514	20	82	933
830515	4	11	72
830516	11	31	180
830517	11	34	71
830518	9	44	79

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LD S 2 MARKED STEELHEAD

(CONTINUED) DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830519	2	11	23
830520	36	176	417
830521	20	90	187
830522	42	222	497
830523	56	279	1,068
830524	106	348	3,867
830525	134	279	563
830526	54	257	1,903
830527	84	208	1,409
830528	99	243	939
830529	20	66	250
830530	49	161	675
830531	56	160	605
830601	46	169	593
830602	45	148	1,214
830603	31	77	577
830604	33	82	265
830605	17	62	199
830606	20	74	229
830607	10	37	95
830608	14	57	172
830609	17	62	195
830610	27	99	276
830611	10	37	98
830612	11	49	122
830613	12	54	121
830614	5	24	67
830615	7	29	64
830616	4	20	38
830617	7	42	88
830620	2	40	77
830715	1	12	16
830721	1	3	4
830725	1	2	2
830801	1	1	2
TOTALS	1,316	4,432	22,433

RA S 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830512	1	2	41
830515	2	6	36

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA S 1 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830516	2	6	33
	830517	1	3	6
	830518	2	10	18
	830520	3	15	35
	830521	8	36	75
	830522	2	11	24
	830523	2	10	38
	830524	2	7	73
	830525	5	10	21
	830528	2	5	19
	830529	1	3	13
	830530	2	7	28
	830531	6	17	65
	830601	4	15	52
	830602	8	26	216
	830603	4	10	74
	830604	4	10	32
	830606	2	7	23
	830608	1	4	12
	830609	3	11	34
	830613	3	13	30
	830614	1	5	13
	830617	1	6	13
TOTALS		72	255	1,024

RA S 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830512	1	2	41
830516	1	3	16
830520	3	15	35
830521	4	18	37
830523	2	10	38
830524	1	3	36
830525	6	12	25
830526	1	5	35
830527	4	10	67
830528	7	17	66
830529	1	3	13
830530	3	10	41
830531	8	23	86
830601	3	11	39

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA S 2 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830502	8	26	216
	830603	4	10	74
	830604	3	7	24
	830605	2	7	23
	830606	2	7	23
	830607	3	11	28
	830610	3	11	31
	830611	1	4	10
	830612	1	4	11
	830613	5	22	51
	830615	2	8	18
	830617	2	12	25
TOTALS		81	271	1,109

LA W 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	8	17	120
830503	27	67	462
830504	43	107	436
830505	28	103	1,024
830506	17	63	194
830507	19	70	356
830508	9	30	301
830509	22	46	323
830510	15	49	227
830511	12	49	612
830512	15	37	617
830513	19	52	209
830514	6	24	280
830515	12	34	216
830516	7	20	114
830517	2	6	13
830518	2	10	18
830519	4	23	46
830520	9	44	104
830521	3	13	28
830522	1	5	12
830523	2	10	38
830524	1	3	36
830525	3	6	13
830530	2	7	28

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LAW 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830531	1	3	11
830601	1	4	13
830603	2	5	37
830608	1	4	12
830719	1	7	10
TOTALS	294	918	5,910

LAW 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	2	8	102
830512	5	12	206
830513	25	68	275
830514	18	73	840
830515	17	49	306
830516	15	43	245
830517	15	46	96
830518	5	24	44
830519	3	17	34
830520	4	20	46
830521	5	22	47
830522	4	21	47
830523	5	25	95
830524	2	7	73
830525	11	23	46
830528	2	5	19
830530	2	7	28
830531	2	6	22
830601	1	4	13
830602	2	7	54
830609	1	4	11
830614	1	5	13
TOTALS	147	496	2,662

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LD 12 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	1	2	17
830531	6	17	65
830601	3	11	39
830602	7	23	189
830603	1	2	19
830604	2	5	16
830606	2	7	23
830607	1	4	9
830608	1	4	12
830609	5	18	57
830610	1	4	10
830611	2	7	20
830614	3	15	40
830615	1	4	9
830616	2	10	19
830617	2	12	25
TOTALS	40	145	569

LD 12 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830504	1	2	10
830507	1	4	19
830510	1	3	15
830512	3	7	123
830513	1	3	11
830515	1	3	18
830517	3	9	19
830527	1	2	17
830530	1	3	14
830531	1	3	11
830601	2	7	26
830602	1	3	27
830605	1	4	12
830606	1	4	11
TOTALS	19	57	333

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 12 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830601	3	11	39
830602	1	3	27
830603	1	2	19
830604	1	2	8
830605	3	11	35
830606	5	18	57
830608	2	8	25
830609	6	22	69
830610	6	22	61
830611	1	4	10
830612	1	4	11
830613	4	18	40
830614	5	24	67
830615	4	17	36
830616	7	34	66
830617	2	12	25
830620	1	20	38
830728	1	2	3
830819	1	2	2
TOTALS	55	236	638

RD 12 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830602	2	7	54
830603	3	7	56
830605	1	4	12
830606	5	18	57
830607	1	4	9
830608	1	4	12
830609	2	7	23
830612	4	18	44
830613	7	31	71
830614	7	34	94
830615	1	4	9
830616	1	5	9
830617	1	6	13
830720	1	3	4
830725	1	2	2
TOTALS	32	154	469

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 12 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830506	1	4	11
830509	3	8	44
830510	5	16	76
830513	4	11	44
830514	1	4	47
830515	1	3	18
830516	1	3	16
830517	3	9	19
830519	1	6	11
830524	1	3	36
830525	2	4	8
830526	1	5	35
830531	1	3	11
830601	1	4	13
830604	1	2	8
TOTALS	27	83	397

RA 17 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830428	2	3	35
830429	3	5	19
830430	4	13	132
830501	24	50	557
830502	26	54	392
830503	27	67	462
830504	40	99	405
830505	29	106	1,061
830506	16	59	182
830507	24	88	449
830508	19	62	635
830509	17	35	249
830510	27	88	408
830511	17	69	867
830512	5	12	206
830513	26	71	286
830514	8	33	373
830515	16	46	288
830516	8	23	131
830517	20	61	128
830518	7	34	62
830519	11	63	126

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 17 1 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830520	20	98	232
	830521	18	81	169
	830522	12	63	142
	830523	5	25	95
	830524	13	43	474
	830525	10	21	42
	830526	1	5	35
	830527	9	22	151
	830528	4	10	38
	830529	2	7	25
	830530	6	20	83
	830531	7	20	76
	830601	4	15	52
	830602	2	7	54
	830603	2	5	37
	830604	1	2	8
	830607	1	4	9
	830610	1	4	10
	830612	1	4	11
TOTALS		495	1,597	9,196

LA 3L 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	1	4	47
830515	42	120	755
830516	45	129	734
830517	25	76	160
830518	11	54	97
830519	9	51	103
830520	4	20	46
830521	2	9	19
830522	6	32	71
830523	1	5	19
830524	3	10	109
830525	2	4	8
830527	2	5	34
830528	1	2	9
830530	1	3	14
830603	2	5	37
TOTALS	157	529	2,262

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 3L 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830522	15	79	178
830523	59	294	1,125
830524	79	259	2,882
830525	83	173	349
830526	24	114	846
830527	21	52	352
830528	14	34	133
830529	3	10	38
830530	2	7	28
830531	1	3	11
830602	2	7	54
830603	1	2	19
830604	1	2	8
830608	2	8	25
830609	1	4	11
830610	2	7	20
830613	1	4	10
830723	1	4	6
TOTALS	312	1,063	6,095

LA 3L 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830528	43	106	408
830529	9	30	113
830530	7	23	96
830531	7	20	76
830601	3	11	39
830602	5	16	135
830603	1	2	19
830604	2	5	16
830611	1	4	10
TOTALS	78	217	912

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 3L 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830603	13	32	242
830604	42	104	337
830605	13	48	152
830606	4	15	46
830607	2	7	19
830608	1	4	12
830609	3	11	34
830610	2	7	20
830614	1	5	13
830723	1	4	6
TOTALS	82	237	881

LD 3L 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830605	26	96	305
830606	34	125	389
830607	9	33	85
830608	6	24	74
830609	7	26	80
830610	2	7	20
830611	4	15	39
830612	3	13	33
830613	2	9	20
830616	1	5	9
830617	1	6	13
TOTALS	95	359	1,067

RA 3L 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	22	60	242
830514	62	253	2,892
830515	80	229	1,438
830516	54	154	881
830517	19	58	122
830518	11	54	97
830519	9	51	103

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 3L 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830520	7	34	81
830521	10	45	94
830523	2	10	38
830524	2	7	73
830525	2	4	8
830528	1	2	9
830531	1	3	11
TOTALS	282	964	6,089

RA 3L 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830521	7	31	66
830522	39	206	462
830523	50	249	953
830524	41	134	1,496
830525	33	69	139
830526	16	76	564
830527	15	37	252
830528	16	39	152
830529	1	3	13
830530	1	3	14
830531	3	9	32
830601	2	7	26
830603	1	2	19
830604	1	2	8
830605	1	4	12
830610	1	4	10
830723	1	4	6
TOTALS	229	879	4,224

RA 3L 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	74	184	1,241
830528	96	236	911
830529	10	33	125
830530	9	30	124

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 3L 3 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830531	9	26	97
830601	5	18	64
830602	7	23	189
830604	1	2	8
830606	1	4	11
830608	1	4	12
830609	2	7	23
830610	1	4	10
TOTALS	216	571	2,815

RA 3L 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830602	23	75	620
830603	28	69	521
830604	11	27	88
830605	9	33	105
830606	6	22	69
830607	3	11	28
830609	1	4	11
830613	1	4	10
TOTALS	82	245	1,452

RD 3L 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	1	3	18
830516	23	66	375
830517	40	122	257
830518	12	59	106
830519	8	45	92
830520	6	29	70
830521	5	22	47
830522	1	5	12
830524	5	16	182
830525	1	2	4
830526	1	5	35
830527	3	7	50

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 3L 1 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830529	1	3	13
TOTALS		107	384	1,261

RD 3L 2 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830523	18	90	343
	830524	91	298	3,320
	830525	146	304	613
	830526	26	124	916
	830527	35	87	587
	830528	28	69	266
	830529	2	7	25
	830530	1	3	14
	830531	6	17	65
	830601	1	4	13
	830602	1	3	27
	830603	1	2	19
	830604	5	12	40
	830605	1	4	12
	830607	1	4	9
	830609	1	4	11
	830610	1	4	10
	830612	1	4	11
	830723	2	8	11
TOTALS		368	1,048	6,312

RD 3L 3 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830528	1	2	9
	830529	4	13	50
	830530	8	26	110
	830531	8	23	86
	830601	6	22	77
	830602	2	7	54
	830603	1	2	19
	830604	4	10	32

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 3L 3 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830605	1	4	12
	830607	1	4	9
	830617	1	6	13
TOTALS		37	119	471

RD 3L 4 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830604	23	57	184
	830605	34	125	398
	830606	17	62	194
	830607	7	26	66
	830608	2	8	25
	830609	4	15	46
	830611	1	4	10
	830614	1	5	13
	830615	1	4	9
	830617	1	6	13
TOTALS		91	312	958

RA 52 1 MARKED STEELHEAD

	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830424	1	3	38
	830425	8	13	198
	830426	17	22	228
	830427	22	46	656
	830428	54	69	941
	830429	39	66	244
	830430	32	105	1,052
	830501	71	148	1,648
	830502	59	123	889
	830503	52	129	889
	830504	57	141	577
	830505	38	139	1,390
	830506	23	85	262
	830507	25	92	468
	830508	19	62	635

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 52 1 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER SAMPLED	NUMBER COLLECTED	ESTIMATED PASSAGE
	830509	20	42	293
	830510	25	82	378
	830511	8	33	408
	830512	10	24	411
	830513	22	60	242
	830514	17	69	793
	830515	12	34	216
	830516	17	49	277
	830517	7	21	45
	830518	9	44	79
	830519	6	34	69
	830520	7	34	81
	830521	3	13	28
	830522	4	21	47
	830523	2	10	38
	830524	1	3	36
	830525	1	2	4
TOTALS		688	1,818	13,560

EFFICIENCY BRAND RECAPTURE SUMMARY MCNARY DAM PAGE 1

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 13 1 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830519	1	6
TOTALS	1	6

RD 13 3 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830522	5	26
830523	2	10
TOTALS	7	36

LA 15 1 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830513	6	16
830514	1	4
TOTALS	7	20

LA 15 3 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830515	2	6
830516	2	6
830517	1	3
830520	1	5
TOTALS	6	20

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

FA 15 1 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830507	3	11
830508	4	13
830510	1	3
TOTALS	8	27

FA 15 3 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830509	6	12
830510	2	7
830512	1	2
TOTALS	9	21

RD 70 1 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830519	1	6
830520	1	5
830521	1	4
830522	1	5
TOTALS	4	20

RD 70 3 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830522	4	21
830524	1	3
TOTALS	5	24

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA +T 1 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830513	5	14
TOTALS	5	14

LA +T 3 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830515	4	11
830516	5	14
830517	4	12
830520	2	10
TOTALS	15	47

RA +T 1 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830507	1	4
830508	1	3
830509	3	6
830512	1	2
TOTALS	6	15

RA +T 3 MARKED SOCKEYE

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830509	3	6
830510	4	13
830511	2	8
830516	1	3
830517	1	3
TOTALS	11	33

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 13 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830501	40	83
830502	20	42
830503	2	5
830505	1	4
TOTALS	63	134

LA 13 3 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830505	53	194
830506	34	126
830507	2	7
TOTALS	89	327

LC 13 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830526	3	14
830527	3	7
830528	2	5
TOTALS	8	26

FA 13 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830424	1	3
830425	28	47
830426	24	31
830427	3	6
830428	5	6
830430	1	3
830501	1	2
830506	1	4
TOTALS	64	102

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 13 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830428	55	71
830429	23	39
830430	1	3
TOTALS	79	113

RC 13 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830518	1	5
830519	45	256
830520	32	156
830521	3	13
830522	1	5
TOTALS	82	435

RC 13 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830522	44	233
830523	17	85
830524	5	16
830526	1	5
830527	1	2
TOTALS	68	341

LA 13 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830512	10	24
830513	13	35
830514	1	4
830515	1	3
TOTALS	25	66

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 15 3 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830514	1	4
830515	72	206
830516	25	71
830517	7	21
830519	1	6
TOTALS	106	308

RA 15 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830507	38	140
830508	16	52
830509	6	12
830510	1	3
830512	1	2
TOTALS	62	209

RA 15 3 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830509	35	73
830510	17	56
830511	6	24
830512	2	5
830515	1	3
TOTALS	61	161

LA 70 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830501	21	44
830502	14	29
830503	2	5
830505	3	11

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 70 1 MARKED CHINOOK 1+S

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830509	1	2
TOTALS	41	91

LA 70 3 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830505	69	253
830506	30	111
830507	4	15
830508	1	3
830509	2	4
TOTALS	106	386

LO 70 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830527	4	10
830528	1	2
TOTALS	5	12

RA 70 1 MARKED CHINOOK 1+S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830424	3	9
830425	29	49
830426	17	22
830427	4	8
830428	7	9
830501	1	2
TOTALS	61	99

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 7U 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830428	65	83
830429	18	30
830430	1	3
830501	1	2
830502	1	2
830503	1	2
TOTALS	87	122

RD 7U 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830519	60	341
830520	33	161
830521	9	40
830522	2	11
830524	1	3
TOTALS	105	556

RD 7U 3 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830522	60	317
830523	19	95
830524	2	7
830528	1	2
TOTALS	82	421

LA 4T 1 MARKED CHINOOK 1*S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830512	17	41
830513	9	25
830514	5	20
TOTALS	31	86

EFFECTIVE DATES: 4/1/83 THRL 8/31/83

LA 4T 3 MARKED CHINCOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830515	102	291
830516	33	94
830517	9	27
830524	1	3
830528	1	2
TOTALS	146	417

RA 4T 1 MARKED CHINCOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830507	50	184
830508	29	95
830509	5	10
830510	4	13
830512	1	2
TOTALS	89	304

RA 4T 3 MARKED CHINCOK 1'S

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830508	1	3
830509	41	85
830510	13	43
830511	4	16
830512	2	5
TOTALS	61	152

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 13 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830506	75	278
830507	26	96
830508	8	26
830510	1	3
TOTALS	110	403

LD 13 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830527	16	40
830528	7	17
830531	1	3
TOTALS	24	60

LD 13 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830529	6	20
830530	2	7
830531	2	6
830603	1	2
830604	1	2
TOTALS	12	37

RD 13 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830520	24	117
830521	12	54
830522	4	21
830523	2	10
830525	1	2
830527	1	2
830602	2	7
TOTALS	46	213

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 13 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830523	1	5
830524	88	289
830525	53	110
830526	11	52
830527	4	10
830528	1	2
830530	1	3
TOTALS	159	471

LA 15 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830512	1	2
830513	33	90
830514	7	29
830515	4	11
830516	1	3
830518	1	5
830520	1	5
TOTALS	48	145

LA 15 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830516	32	91
830517	16	49
830518	3	15
830519	2	11
830520	1	5
830522	1	5
830523	1	5
TOTALS	56	181

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LD 15 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830609	5	18
830610	8	29
830611	6	22
830612	2	9
TOTALS	21	78

RA 15 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830508	5	16
830509	2	4
830510	6	20
TOTALS	13	40

RA 15 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830511	11	45
830512	8	20
830513	4	11
830520	1	5
TOTALS	24	81

RD 15 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830601	1	4
830602	3	10
830603	3	7
830605	1	4
830606	1	4
TOTALS	9	29

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 15 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830604	23	57
830605	23	85
830606	12	44
830608	2	8
830610	3	11
TOTALS	63	205

LA 3J 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830515	82	234
830516	36	103
830517	17	52
830518	5	24
830519	4	23
830520	1	5
830528	1	2
830529	1	3
TOTALS	147	446

LA 3J 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830522	113	598
830523	41	204
830524	17	56
830525	11	23
830526	3	14
830527	4	10
830528	13	32
830529	1	3
TOTALS	203	940

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 3J 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830529	14	46
830530	7	23
830531	3	9
830601	2	7
830602	1	3
830603	2	5
830604	1	2
TOTALS	30	95

LA 3J 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830605	1	4
830606	59	217
830607	7	26
830608	2	8
830609	2	7
830612	1	4
830613	1	4
830614	1	5
TOTALS	74	275

RA 3J 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830515	99	283
830516	34	97
830517	9	27
830519	1	6
830520	1	5
830522	1	5
830528	1	2
TOTALS	146	425

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RA 3J 2 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830522	82	434
830523	40	199
830524	18	59
830525	19	40
830526	6	29
830527	3	7
830528	13	32
830529	2	7
TOTALS	183	807

RA 3J 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830529	21	69
830530	11	36
830531	6	17
830601	1	4
830602	2	7
TOTALS	41	133

RA 3J 4 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830606	46	169
830607	7	26
830608	3	12
830609	1	4
830610	2	7
830612	1	4
TOTALS	60	222

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LA 7U 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830506	66	244
830507	28	103
830508	5	16
830509	6	12
830510	3	10
830513	1	3
TOTALS	109	388

LD 7U 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830527	30	74
830528	8	20
830529	1	3
830530	1	3
TOTALS	40	100

LD 7U 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830529	5	16
830530	5	16
830531	4	11
830602	4	13
830608	1	4
TOTALS	19	60

FD 7U 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830520	14	68
830521	15	67
830522	1	5
830524	1	3

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

RD 7U 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830526	1	5
830528	1	2
TOTALS	33	150

RD 7U 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830524	89	292
830525	54	112
830526	1	5
830527	3	7
830528	2	5
830529	1	3
TOTALS	150	424

LA +T 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830513	32	87
830514	9	37
830515	3	9
830516	1	3
830520	1	5
TOTALS	46	141

LA +T 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830516	30	86
830517	18	55
830518	3	15
TOTALS	51	156

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

LD +T 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830609	5	18
830610	11	40
830611	2	7
830613	1	4
TOTALS	19	69

RA +T 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830508	12	39
830509	8	17
830512	1	2
TOTALS	21	58

RA +T 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830511	9	37
830512	8	20
830513	2	5
830515	1	3
830517	1	3
830520	1	5
TOTALS	22	73

RD +T 1 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830601	2	7
830602	8	26
830604	2	5
TOTALS	12	38

EFFECTIVE DATES: 4/1/83 THRU 8/31/83

BD 4T 3 MARKED STEELHEAD

DATE	NUMBER SAMPLED	NUMBER COLLECTED
830604	25	62
830605	28	103
830606	6	22
TOTALS	59	187

APPENDIX F

Mark Recapture Summary, John Day Dam

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD 13 3 MARKED SOCKEYE

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830528	1	0
TOTALS		1	0

LA 15 1 MARKED SOCKEYE

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830518	1	0
TOTALS		1	0

RD 70 3 MARKED SOCKEYE

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830525	1	0
	830527	1	0
TOTALS		2	0

LA +T 3 MARKED SOCKEYE

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830523	1	0
TOTALS		1	0

RA +T 1 MARKED SOCKEYE

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830518	1	0
TOTALS		1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA +T 3 MARKED SOCKEYE

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830512	1	0
TOTALS		1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA G 1 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830419	1	108
TOTALS		1	108

LA G 3 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830426	1	144
TOTALS		1	144

RA G 1 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	1	121
TOTALS		1	121

RA G 3 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	1	121
TOTALS		1	121

LA ID 2 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	1	121
TOTALS		1	121

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IC 3 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830521	1	120
TOTALS		1	120

RA IC 2 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830502	1	119
TOTALS		1	119

RA IC 3 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	2	243
	830426	1	144
	830428	1	134
TOTALS		4	521

RD IC 1 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830515	1	129
TOTALS		1	129

RD IC 2 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	1	121
	830426	1	144
TOTALS		2	265

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IF 1 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830428	1	134
	830520	1	116
TOTALS		2	250

RA IF 2 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830426	1	144
TOTALS		1	144

RA IF 3 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830426	2	288
	830520	1	116
TOTALS		3	404

RD IF 1 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830426	1	144
TOTALS		1	144

LA IH 1 MARKED CHINOOK 1*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830525	1	120
	830527	1	137
TOTALS		2	257

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IK 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830512	2	282
830514	1	122
830516	2	249
830517	6	708
830518	1	118
830519	3	349
830520	1	116
830521	6	720
830522	2	191
830526	3	401
830527	1	137
830528	1	172
TOTALS	29	3,565

LA IK 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830525	2	241
830526	4	535
830527	5	687
830528	2	345
830529	2	307
830530	1	153
TOTALS	16	2,268

LA IL 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	1	132
830509	1	130
830510	6	819
830511	1	135
830512	5	705
830514	3	367
830515	5	647
830516	4	498
830517	8	944
830518	5	592

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IL 1 MARKED CHINOOK 1*S

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830519	4	466
	830520	5	579
	830521	10	1,200
	830522	3	286
	830526	1	134
	830527	1	137
	830529	2	307
	830602	1	164
	830603	1	189
	830604	1	155
	830605	1	164
TOTALS		69	8,750

LA IL 2 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830510	1	137
830511	4	540
830512	1	141
830514	2	245
830515	2	259
830516	2	249
830517	9	1,062
830518	11	1,303
830519	10	1,164
830520	9	1,042
830521	8	960
830524	1	121
830525	1	120
830526	3	401
830527	2	275
830528	3	517
830529	4	613
TOTALS	73	9,149

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IM 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	1	124
TOTALS	1	124

LA IN 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	1	129
830517	1	118
830518	7	829
830519	4	466
830520	1	116
830521	4	480
830522	3	286
830524	3	362
830525	1	120
830526	3	401
830527	2	275
830528	1	172
830529	1	153
830530	1	153
830603	1	189
TOTALS	34	4,249

LA IN 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830521	1	120
830525	1	120
830526	2	268
830527	2	275
830528	2	345
830530	4	610
830601	1	190
TOTALS	13	1,928

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IR 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	1	134
830515	2	259
830516	2	249
830517	5	590
830518	3	355
830519	5	582
830520	3	347
830521	8	960
830522	3	286
830525	1	120
830527	1	137
830528	1	172
830529	1	153
830530	1	153
TOTALS	37	4,497

LA IR 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	1	129
830517	3	354
830518	5	592
830519	6	698
830520	3	347
830521	4	480
830522	1	95
830526	2	268
830527	1	137
830529	2	307
830530	1	153
TOTALS	29	3,560

LA IS 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	3	391
830511	3	405
830512	2	282

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IS 1 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830518	1	118
TOTALS	9	1,196

LA IS 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	2	270
830513	1	134
830515	1	129
830519	1	116
TOTALS	5	649

LA IT 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	1	134
830515	1	129
830516	1	124
830517	1	118
830518	1	118
830519	1	116
830520	2	232
830526	1	134
TOTALS	9	1,105

LA IT 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	2	245
830516	1	124
830518	2	237
TOTALS	5	606

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IV 1 MARKED CHINOOK 1.S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	144
830506	1	151
830507	1	137
830508	5	661
830509	1	130
830510	5	683
830511	1	135
830512	7	986
830514	1	122
830515	3	388
830516	1	124
830517	3	354
830518	6	948
830519	6	698
830520	1	116
830521	1	120
830530	1	153
830601	1	190
TOTALS	48	6,240

LA IV 1 MARKED CHINOOK 1.S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	1	129
830516	3	373
830517	3	354
830518	6	711
830519	5	582
830520	9	1,042
830521	9	1,080
830522	1	95
830523	3	326
830524	1	121
830525	1	120
830526	3	401
830527	1	137
830528	5	517
830529	1	153
830530	1	153
TOTALS	51	6,294

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IV 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	1	118
830518	1	118
830519	2	233
830520	1	116
830521	3	360
830522	4	382
830523	1	109
830524	1	121
830525	1	120
830526	3	401
830527	2	275
830528	6	1,035
830529	2	307
830605	2	327
TOTALS	30	4,022

LA IX 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830521	11	1,320
830522	2	191
830526	2	268
830527	1	137
830528	1	172
830529	2	307
TOTALS	19	2,395

LA IX 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830526	3	401
830527	1	137
830528	2	345
830529	1	153
830530	1	153
830606	1	154
TOTALS	9	1,343

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IY 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830510	1	137
830511	1	135
830513	1	134
830514	2	245
830515	2	259
830516	6	747
830517	14	1,653
830518	8	948
830519	7	815
830520	8	926
830521	5	600
830524	1	121
830525	1	120
830526	4	535
830527	1	137
830528	2	345
830529	2	307
TOTALS	66	8,164

LA IY 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830519	1	116
830520	1	116
830521	7	840
830522	2	191
830523	1	109
830525	1	120
830526	6	803
830527	2	275
830528	3	517
830529	3	460
830530	2	305
830531	1	147
TOTALS	30	3,999

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IZ 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	3	347
830511	1	135
830512	1	141
830515	1	129
830516	2	249
830517	11	1,299
830518	3	355
830519	7	815
830520	4	463
830521	5	600
830522	2	191
830523	2	217
830524	2	241
830525	1	120
830526	3	401
830527	2	275
830528	7	1,207
830529	2	307
830530	4	610
830531	1	147
830601	1	190
830602	2	328
830603	3	568
830607	3	487
830608	2	303
830611	1	136
TOTALS	76	10,261

LA IZ 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	1	118
830518	6	711
830519	4	466
830520	1	116
830521	6	720
830522	4	382
830524	2	241
830525	1	120
830526	5	669
830527	2	275
830528	3	517

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA IZ 2 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830529	2	307
	830530	2	305
	830603	1	189
	830616	1	119
TOTALS		41	5,255

LA R 2 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830526	1	134
TOTALS		1	134

LD R 1 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830504	1	134
	830509	1	130
TOTALS		2	264

LD R 2 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830509	1	130
	830510	4	546
	830511	1	135
	830514	1	122
	830516	1	124
TOTALS		8	1,057

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD R 4 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	1	118
TOTALS	1	118

RA R 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	1	129
TOTALS	1	129

RA R 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	1	124
TOTALS	1	124

RD R 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	1	120
830502	1	119
830505	3	347
830509	1	130
830511	1	135
TOTALS	7	851

RD R 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	1	120
830503	1	142

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD R 2 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	2	232
830506	1	151
830507	2	273
830508	3	397
830509	1	130
830510	2	273
830511	3	405
830512	1	141
830513	1	134
830516	1	124
830519	1	116
830526	2	268
TOTALS	22	2,906

RD R 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	3	347
830506	1	151
830507	2	273
830508	2	264
830509	1	130
830510	3	410
830511	3	405
830516	1	124
TOTALS	16	2,104

RD R 4 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830510	1	137
830511	1	135
830512	1	141
TOTALS	3	413

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD SU 3 MARKED CHINOOK 1+S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830411	2	197
830415	1	98
830418	2	196
830419	3	325
830420	1	103
830422	1	84
830426	1	144
830501	1	120
830503	1	142
TOTALS	13	1,409

RD SU 3 MARKED CHINOOK 1+S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830420	1	103
830426	1	144
830501	1	120
830505	1	116
830506	2	301
830509	1	130
830517	2	236
TOTALS	9	1,150

LD T 4 MARKED CHINOOK 1+S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	121
830428	1	134
830430	1	143
830501	2	239
830502	2	239
830503	1	142
830504	2	268
830505	4	463
830506	1	151
830508	1	132
830509	2	261
830510	3	410

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LOT 4 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	1	135
830513	1	134
TOTALS	23	2,972

RAT 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	121
830502	3	358
830504	1	134
830506	2	301
830507	2	273
830509	2	261
830510	2	273
830511	1	135
830512	1	141
830516	1	124
TOTALS	16	2,121

RAT 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	1	120
830505	2	232
830508	1	132
830511	1	135
830512	1	141
830516	2	249
830518	1	118
TOTALS	9	1,127

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD T 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830506	2	301
830509	2	261
830510	5	683
830511	4	540
830512	3	423
830513	2	269
830514	6	734
830515	3	388
830516	4	498
830517	2	236
830518	1	118
830519	1	116
830520	2	232
830521	2	240
830602	1	164
830606	1	154
TOTALS	41	5,357

RD T 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830430	2	286
830510	2	273
830512	1	141
830513	1	134
830515	1	129
830521	2	240
830526	1	134
TOTALS	10	1,337

RD T 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830413	1	121
830418	1	98
830419	1	108
830422	2	167
830425	5	606

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD T 3 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	16	2,303
830427	4	552
830428	15	2,007
830429	23	3,370
830430	11	1,573
830501	23	2,749
830502	7	835
830503	2	284
830504	3	402
830505	8	926
830506	2	301
830510	1	137
830511	1	135
830514	1	122
TOTALS	127	15,796

RD 12 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830429	1	147
830430	2	286
830501	3	359
830504	2	268
830505	2	232
830506	3	452
830507	3	410
830508	2	264
830509	3	391
830510	3	410
830511	1	135
830513	1	134
830514	1	122
830517	1	118
830526	1	134
TOTALS	29	3,862

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 13 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830503	2	284
830504	3	402
830505	1	116
830506	1	151
830514	1	122
TOTALS	8	1,075

LA 13 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830507	3	410
830508	6	793
830509	2	261
830510	1	137
TOTALS	12	1,601

RA 13 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830427	1	138
830428	4	535
830511	1	135
830526	1	134
TOTALS	7	942

RA 13 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830430	1	143
830501	3	359
TOTALS	4	502

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD 13 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830521	2	240
TOTALS	2	240

RD 13 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830524	1	121
TOTALS	1	121

LA 15 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	3	367
830515	2	259
TOTALS	5	626

LA 15 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	1	124
830517	1	118
830518	4	474
830519	2	233
830520	2	232
830526	1	134
TOTALS	11	1,315

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA 15 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	1	130
830510	9	1,229
830511	4	540
TOTALS	14	1,899

RA 15 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	6	809
TOTALS	6	809

LA 2 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	1	135
TOTALS	1	135

LA 2 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830427	1	138
830502	1	119
TOTALS	2	257

RA 2 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	144
TOTALS	1	144

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA 2 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	119
830509	1	130
TOTALS	2	249

RD 2 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	119
830503	2	284
TOTALS	3	403

RD 2 2 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	1	118
TOTALS	1	118

LA 3C 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	4	478
830502	1	119
830504	2	268
830509	1	130
830511	1	135
TOTALS	9	1,130

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 3C 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	119
830503	1	142
830504	1	134
830505	1	116
830506	4	602
830507	1	137
830508	1	132
830510	1	137
830521	1	120
TOTALS	12	1,639

LD 3C 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	5	661
830509	2	251
830510	9	1,229
830513	1	134
TOTALS	17	2,285

LD 3C 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830511	2	270
830515	1	129
830517	2	236
TOTALS	5	635

RA 3C 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	5	598
830503	2	284
830504	1	134

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA 32 1 MARKED CHINOOK 1'S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	2	232
TOTALS	10	1,248

RA 32 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	1	116
830507	1	137
830508	1	132
TOTALS	3	385

RD 32 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830502	1	119
830504	2	268
830505	1	116
830506	4	602
830507	1	137
830508	1	132
830509	1	130
830510	1	137
830514	1	122
TOTALS	13	1,763

RD 32 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830509	1	130
830510	2	273
830511	3	405
830516	1	124
830518	1	118
TOTALS	8	1,050

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 3L 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	2	245
830515	1	129
830516	1	124
830517	4	472
830519	1	116
830520	2	232
TOTALS	11	1,318

RA 3L 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	4	498
830517	1	118
830518	1	118
TOTALS	6	734

RD 3L 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	2	236
830518	3	355
830520	2	232
830521	1	120
TOTALS	8	943

LA 3X 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830505	1	116
830506	1	151
830510	2	273
830511	5	674
830512	2	282
830513	1	134

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 3X 1 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830514	1	122
TOTALS		13	1,752

RA 7C 3 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830426	1	144
	830517	1	118
TOTALS		2	262

LA 7F 1 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830429	1	147
TOTALS		1	147

LA 7H 1 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830510	2	273
	830511	2	270
	830512	2	282
	830517	1	112
	830518	1	118
	830519	1	116
	830529	1	153
TOTALS		10	1,330

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA 7N 3 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830524	1	121
830528	1	172
TOTALS	2	293

LA 7U 1 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830503	1	142
830504	1	134
830505	2	232
TOTALS	4	508

LA 7U 3 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	2	264
830509	1	130
830510	1	137
TOTALS	4	531

LD 7U 1 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830528	1	172
TOTALS	1	172

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA 7U 1 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830427	1	138
830428	2	268
830429	2	293
830505	1	116
TOTALS	6	815

RA 7U 3 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830430	1	143
830501	6	717
830502	1	119
TOTALS	8	979

RD 7U 1 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830521	1	120
830522	1	95
830525	1	120
TOTALS	3	335

RD 7U 3 MARKED CHINOOK 1*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830525	1	120
830526	1	134
TOTALS	2	254

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA +N 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	1	124
TOTALS	1	124

LD +N 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	1	120
830508	2	264
TOTALS	3	384

RD +N 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830425	1	121
TOTALS	1	121

LA +T 1 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	3	388
830517	1	118
830518	1	118
830521	1	120
TOTALS	6	744

LA +T 3 MARKED CHINOOK 1'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830518	5	592
830519	4	466

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA +T 3 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830520	1	116
TOTALS		10	1,174

RA +T 1 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830509	5	782
	830510	2	273
TOTALS		6	1,055

[illegible]

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	[illegible]	[illegible]	135
	830512		[illegible]
	830514	1	122
	830515	1	129
TOTALS		5	668

LA +Y 1 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	1	121
TOTALS		1	121

LA +Y 3 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	4	485
	830508	1	132

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA +Y 3 MARKED CHINOOK 1'S

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830516	2	249
TOTALS		7	866

LD +Y 2 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	2	243
TOTALS		2	243

LD +Y 3 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830506	2	301
TOTALS		2	301

RA +Y 1 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830429	1	147
TOTALS		1	147

RA +Y 2 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830418	1	98
	830501	1	120
	830507	1	137
TOTALS		3	355

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD +Y 2 MARKED CHINOOK 1'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830425	1	121
TOTALS		1	121

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA F 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	1	26
830516	5	134
830517	17	433
830518	10	256
830519	8	201
830520	4	100
830525	1	26
830526	1	29
830527	3	89
830530	7	230
830602	1	35
830603	3	122
830605	1	35
TOTALS	62	1,716

RA F 4 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	1	27
830601	1	41
830602	8	283
830603	64	2,612
830604	6	201
830605	10	353
830606	2	66
830607	2	70
830610	1	30
830611	2	59
TOTALS	97	3,742

RA IJ 2 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830429	1	32
830430	1	31
830501	6	155
830502	1	26
830503	13	398

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA IU 2 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830504	9	260
	830505	5	125
	830506	1	32
	830507	2	59
	830508	6	171
	830509	2	56
	830510	6	177
	830511	1	29
	830512	2	61
	830513	2	58
	830514	3	79
	830517	1	25
	830520	1	25
	830527	1	30
	830528	1	37
	830529	1	33
	830605	1	35
TOTALS		57	1,934

LA R 1 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830527	1	30
TOTALS		1	30

LA R 4 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830602	1	35
TOTALS		1	35

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD R 2 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830516	1	26
TOTALS		1	26

LD R 3 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830512	1	30
TOTALS		1	30

LD R 4 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830510	2	59
	830525	1	26
TOTALS		3	85

RA R 1 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830516	1	27
TOTALS		1	27

LA S 1 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830507	10	295
	830508	55	1,568
	830509	60	1,687
	830510	55	1,620
	830511	38	1,106

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA S 1 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830512	54	1,641
	830513	17	493
	830514	7	185
	830515	1	28
	830516	20	537
	830517	10	255
	830518	7	179
	830519	18	452
	830520	9	225
	830523	2	47
	830524	2	52
	830525	6	156
	830526	7	202
	830527	283	8,388
	830528	141	5,246
	830529	45	1,488
	830530	193	6,517
	830531	136	4,308
	830601	69	2,833
	830602	49	1,733
	830603	83	3,388
	830604	25	836
	830605	15	529
	830606	18	597
	830607	17	595
	830608	3	98
	830609	2	60
	830610	11	332
	830611	9	263
	830612	3	86
TOTALS		1,485	48,025

LD S 2 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	4	114
830509	4	112
830510	15	442
830511	4	116
830513	1	29
830514	1	26
830516	2	54

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD S 2 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	2	51
830519	1	25
830522	1	21
830525	1	26
830527	12	356
830528	3	112
830529	6	198
830530	15	494
830531	8	253
830601	3	123
830602	1	35
830603	13	531
830604	1	33
830605	6	212
830606	2	66
830607	4	140
830610	1	30
830611	1	29
TOTALS	112	3,628

RA S 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	1	30
830528	3	112
830529	1	33
830530	2	66
830601	4	164
830602	1	35
830603	2	82
830605	1	35
830606	1	33
TOTALS	16	590

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA S 2 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830407	1	27
830411	1	21
830526	1	29
830527	1	30
830528	1	37
830530	3	99
830601	3	123
830602	1	35
830603	7	266
830604	3	100
830605	1	35
830606	2	66
830607	3	105
830608	1	33
830610	1	30
830611	1	29
TOTALS	31	1,085

LA W 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830503	1	31
830504	6	174
830505	1	25
830506	7	227
830507	33	972
830508	26	798
830509	29	816
830510	37	1,090
830511	16	466
830512	14	426
830513	3	87
830514	2	53
830515	6	167
830516	3	81
830517	2	51
830518	3	77
830519	2	50
830526	1	29
830528	1	37
830530	3	99
830531	1	32

EFFECTIVE DATES: 4/1/33 THRU 12/16/83

LA W 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830603	1	41
830605	1	35
TOTALS	201	5,864

LA W 2 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830512	1	30
830513	3	87
830514	9	238
830515	3	64
830516	14	376
830517	15	382
830518	4	102
830519	8	201
830520	4	100
830527	4	119
830528	2	74
830529	1	33
830530	3	99
830531	1	32
830601	1	41
830602	1	35
830603	3	122
TOTALS	77	2,155

LD 12 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	2	53
830516	1	27
830528	1	37
830530	1	33
830603	1	41
TOTALS	0	191

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD 12 4 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830603	1	41
TOTALS		1	41

RD 12 1 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830516	1	27
	830603	1	41
	830606	1	33
TOTALS		3	101

RD 12 3 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830512	1	30
	830527	1	30
	830605	1	35
	830608	1	33
TOTALS		4	128

RD 12 4 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830508	1	29
	830510	1	29
	830511	1	29
	830525	1	26
	830604	1	33
TOTALS		5	146

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 13 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830508	19	542
830509	14	394
830510	5	147
830511	1	29
TOTALS	39	1,112

LD 13 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	1	30
830528	10	372
830529	20	661
830530	4	132
830531	2	63
830604	1	33
TOTALS	38	1,291

LD 13 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830531	6	253
830601	7	287
830602	1	35
830607	1	35
TOTALS	17	610

RD 13 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830522	1	21
830523	3	70
830524	2	52
830525	3	78
830528	1	37

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD 13 1 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830530	2	66
TOTALS		12	324

RD 13 3 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830526	4	115
	830527	31	919
	830528	9	335
	830601	1	41
	830606	1	33
TOTALS		46	1,443

LA 15 1 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830516	5	134
	830604	1	33
TOTALS		6	167

LA 15 3 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830518	4	102
	830519	7	176
	830520	2	50
	830521	1	26
	830528	1	37
TOTALS		15	391

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD 15 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830611	1	29
830612	1	29
TOTALS	2	58

RA 15 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830428	1	29
830510	23	677
830511	13	378
830512	6	182
830517	1	25
830530	1	33
TOTALS	45	1,324

RA 15 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	5	145
830514	3	79
830516	1	27
830518	1	26
830607	1	35
TOTALS	11	312

RD 15 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830603	2	82
830604	8	268
830605	1	35
830606	1	33
TOTALS	12	418

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD 15 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830606	2	66
830607	10	350
830608	1	33
830611	1	29
TOTALS	14	478

RA 17 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830501	5	129
830502	3	77
830503	36	1,101
830504	39	1,128
830505	30	749
830506	13	422
830507	41	1,208
830508	32	912
830509	34	956
830510	32	943
830511	19	553
830512	32	973
830513	19	551
830514	16	422
830515	6	167
830516	19	510
830517	12	306
830518	6	153
830519	6	151
830520	5	125
830521	3	78
830522	2	41
830523	3	70
830525	2	52
830526	6	173
830527	14	415
830528	4	149
830529	2	66
830530	6	197
830531	5	158
830601	5	205
830602	4	141
830603	6	245

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA 17 1 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830604	1	33
TOTALS		468	13,559

LA 3J 1 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830517	8	204
	830518	29	741
	830519	8	201
	830520	2	50
	830521	1	26
	830522	1	21
	830523	1	23
	830603	1	41
	830604	1	33
TOTALS		52	1,340

LA 3J 2 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830524	5	130
	830525	26	675
	830526	15	433
	830527	11	326
	830530	1	33
	830601	1	41
	830602	1	35
	830603	1	41
TOTALS		61	1,714

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 3J 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830530	14	461
830531	47	1,489
830601	13	534
830602	2	71
830603	1	41
830604	1	33
830610	1	30
TOTALS	79	2,659

LA 3J 4 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830607	7	245
830608	32	1,046
830609	4	121
830610	3	91
TOTALS	46	1,503

RA 3J 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	14	357
830518	30	767
830519	6	151
830520	3	75
830525	1	26
830526	1	29
TOTALS	55	1,405

RA 3J 2 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830525	18	468
830526	15	433

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA 3J 2 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	17	504
830528	4	149
830529	1	33
830602	1	35
TOTALS	56	1,622

RA 3J 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830530	12	395
830531	50	1,584
830601	10	411
830602	1	35
TOTALS	73	2,425

RA 3J 4 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830607	3	105
830608	23	752
830609	4	121
830610	4	121
TOTALS	34	1,099

LA 3L 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830516	1	27
830517	16	407
830518	23	588
830519	9	226
830520	4	100
830521	2	52
830524	1	26

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 3L 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	2	59
830528	1	37
TOTALS	59	1,522

LA 3L 2 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830525	10	260
830526	25	722
830527	54	1,600
830528	23	856
830529	7	231
830530	9	296
830531	9	285
830601	4	164
830602	1	35
TOTALS	142	4,449

LA 3L 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830529	2	66
830530	105	3,555
830531	25	792
830601	8	328
830602	4	141
830603	1	41
TOTALS	148	4,923

LA 3L 4 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830604	1	33
830605	10	353

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 3L 4 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830606	9	298
830607	5	175
830608	1	33
830609	1	30
830611	1	29
TOTALS	28	951

LD 3L 4 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830606	1	33
830607	6	210
830608	5	163
830609	4	121
830610	2	60
830611	1	29
TOTALS	19	616

RA 3L 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830515	3	84
830516	44	1,182
830517	38	968
830518	17	434
830519	15	377
830520	4	100
830521	2	52
830522	2	41
830524	1	26
830525	1	26
830526	1	29
830603	1	41
TOTALS	129	3,360

EFFECTIVE DATES: 4/1/33 THRU 12/16/83

RA 3L 2 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830524	1	26
830525	5	130
830526	15	433
830527	33	978
830528	11	409
830529	5	165
830530	2	66
830531	3	95
830602	1	35
830603	1	41
TOTALS	77	2,378

RA 3L 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830528	2	74
830529	59	1,951
830530	95	3,127
830531	24	760
830601	3	123
830603	3	122
830607	1	35
830610	2	60
TOTALS	189	6,252

RA 3L 4 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830603	2	82
830604	22	736
830605	16	564
830606	6	199
830607	4	140
830608	1	33
830609	2	60
830613	1	29
TOTALS	54	1,843

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD 3L 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830517	2	51
830518	2	51
830519	11	276
830520	8	200
830521	2	52
830524	1	26
830525	1	26
830526	1	29
830527	1	30
830529	2	66
830530	1	33
TOTALS	32	840

RD 3L 2 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830526	8	231
830527	88	2,608
830528	36	1,414
830529	5	165
830530	17	560
830531	8	253
830601	1	41
830602	2	71
830603	1	41
830604	1	33
TOTALS	169	5,417

RD 3L 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830531	11	348
830601	19	780
830602	4	141
TOTALS	34	1,269

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD 3L 4 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830604	1	33
830605	2	71
830606	21	696
830607	29	1,015
830608	4	131
830609	2	60
830610	1	30
830612	1	29
TOTALS	61	2,065

RA 52 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830426	1	31
830427	6	179
830428	8	231
830429	9	284
830430	24	741
830501	52	1,341
830502	37	952
830503	98	2,998
830504	67	1,938
830505	41	1,024
830506	29	942
830507	48	1,414
830508	49	1,397
830509	41	1,153
830510	29	854
830511	18	524
830512	25	760
830513	14	406
830514	14	370
830515	4	112
830516	17	456
830517	14	357
830518	12	307
830519	5	126
830520	3	75
830521	3	78
830523	1	23
830524	1	26
830526	3	87

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RA 52 1 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830527	3	89
830530	2	66
830603	1	41
TOTALS	679	19,382

LA 70 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830507	1	29
830508	15	428
830509	14	394
830510	1	29
830511	3	87
830512	1	30
830514	1	26
TOTALS	36	1,023

LD 70 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830528	7	260
830529	11	364
830530	7	230
830531	1	32
830603	1	41
TOTALS	27	927

LD 70 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830531	8	253
830601	6	246
830602	2	71
TOTALS	16	570

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD 7U 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830522	2	41
830523	3	70
830525	1	26
830526	2	58
830530	1	33
TOTALS	9	228

RD 7U 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830526	4	115
830527	36	1,067
830528	3	112
830529	2	66
830530	3	99
TOTALS	48	1,459

LA +I 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830514	1	26
830515	4	112
830516	11	295
830517	2	51
830518	1	26
TOTALS	19	510

LA +I 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830518	2	51
830519	10	251
830520	3	75
830521	1	26

EFFECTIVE DATES: 4/1/33 THRU 12/16/83

LA +T 3 MARKED STEELHEAD

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830523	1	23
TOTALS	17	426

LD +T 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830612	1	29
TOTALS	1	29

RA +T 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830510	26	766
830511	9	262
830512	3	91
TOTALS	38	1,119

RA +T 3 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830513	5	145
830514	2	53
TOTALS	7	198

RD +T 1 MARKED STEELHEAD

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830603	7	286
830604	2	67
830606	1	33

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD +T 1 MARKED STEELHEAD

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830612	1	29
TOTALS		11	415

RD +T 3 MARKED STEELHEAD

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830606	7	232
	830607	4	140
	830608	1	33
	830611	1	29
	830615	1	26
TOTALS		14	460

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA E 3 MARKED CHINOOK 0'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830722	9	0
830726	1	0
TOTALS	10	0

LA E 4 MARKED CHINOOK 0'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830718	1	0
830719	1	0
830723	3	0
830728	1	0
830802	1	0
TOTALS	7	0

LA HE 1 MARKED CHINOOK 0'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830801	1	0
830911	1	0
TOTALS	2	0

LA HE 3 MARKED CHINOOK 0'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830731	1	0
830801	1	0
830806	2	0
830808	3	0
830813	3	0
830819	1	0
830824	1	0
830905	1	0
830910	1	0
831006	1	0
TOTALS	15	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA HE 4 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830807	1	0
830810	1	0
830905	1	0
830911	1	0
TOTALS	4	0

LD HE 1 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830808	1	0
830824	1	0
831017	1	0
831107	1	0
831114	1	0
TOTALS	5	0

LD HE 2 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830805	5	0
830820	2	0
830902	1	0
830911	3	0
TOTALS	11	0

LD HE 3 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830824	1	0
830831	1	0
830902	1	0
830910	1	0
830911	2	0
830921	1	0
TOTALS	7	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD HE 4 MARKED CHINOOK O'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	831003	1	0
TOTALS		1	0

LP HE 3 MARKED CHINOOK O'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830906	1	0
TOTALS		1	0

RA HE 2 MARKED CHINOOK O'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	831004	1	0
TOTALS		1	0

RA HE 3 MARKED CHINOOK O'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830919	1	0
	830926	1	0
TOTALS		2	0

RD HE 2 MARKED CHINOOK O'S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	831114	1	0
TOTALS		1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

RD HE 3 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
831031	1	0
831128	1	0
TOTALS	2	0

RP HE 1 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
831019	1	0
TOTALS	1	0

RP HE 4 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
831003	1	0
TOTALS	1	C

LA 2L 1 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830716	1	0
830717	3	C
830718	2	0
830719	4	0
830720	5	0
830721	1	C
830722	2	0
830723	3	0
830727	2	0
830731	2	C
830801	1	0
830808	1	0
830824	1	0
830830	1	C
830909	1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 2L 1 MARKED CHINOOK 0*S

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	831128	1	0
TOTALS		31	0

LA 2L 3 MARKED CHINOOK 0*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830717	2	0
	830718	1	0
	830719	3	0
	830720	3	0
	830721	1	0
	830722	3	0
	830723	1	0
	830726	1	0
	830727	1	0
	830730	2	0
	830731	1	0
	830801	1	0
	830805	1	0
	830807	1	0
	830808	1	0
	830909	1	0
TOTALS		24	0

LD 2L 1 MARKED CHINOOK 0*S

	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830719	3	0
	830720	1	0
	830721	6	0
	830722	6	0
	830723	4	0
	830724	1	0
	830725	1	0
	830727	2	0
	830728	2	0
	830730	2	0
	830731	1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD 2L 1 MARKED CHINOOK 0# S

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830801	1	0
	830802	1	0
	830804	1	0
	830805	1	0
	830808	2	0
	830811	1	0
	830812	1	0
	830818	1	0
	830905	1	0
	830911	1	0
	831006	1	0
	831205	1	0
TOTALS		42	0

LA 2T 1 MARKED CHINOOK 0# S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830724	1	0
830725	5	0
830726	1	0
830727	1	0
830728	3	0
830729	2	0
830730	7	0
830731	1	0
830801	2	0
830802	1	0
830803	1	0
830806	6	0
830809	2	0
830810	2	0
830812	1	0
830814	1	0
830819	2	0
830824	2	0
830826	1	0
830829	1	0
830830	1	0
830831	2	0
830901	1	0
830902	1	0
830905	1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 2T 1 MARKED CHINOOK O*S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830906	1	0
830908	2	0
830909	1	0
830911	2	0
830916	1	0
830930	1	0
831003	1	0
831013	1	0
831114	1	0
831130	1	0
TOTALS	63	0

LA 2T 3 MARKED CHINOOK O*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830729	2	0
830730	4	0
830731	1	0
830801	1	0
830806	1	0
830808	3	0
830810	2	0
830811	2	0
830812	2	0
830813	1	0
830814	1	0
830817	1	0
830818	1	0
830819	1	0
830821	2	0
830822	1	0
830824	3	0
830825	1	0
830828	1	0
830830	1	0
830831	1	0
830901	2	0
830902	3	0
830903	1	0
830904	1	0
830905	1	0
830906	1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 2T 3 MARKED CHINOOK O'S

(CONTINUED)	DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
	830908	1	0
	830910	1	0
	830911	9	0
	830912	2	0
	830926	1	0
	831004	1	0
	831024	1	0
	831116	2	0
	831123	2	0
	831128	1	0
	831214	1	0
TOTALS		64	0

LD 2T 1 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830731	1	0
830808	6	0
830810	3	0
830813	2	0
830814	1	0
830815	1	0
830819	1	0
830820	1	0
830821	1	0
830822	2	0
830824	1	0
830901	2	0
830902	1	0
830904	1	0
830908	2	0
830909	1	0
830911	1	0
830918	1	0
830922	2	0
830930	1	0
831013	1	0
831031	1	0
831102	2	0
831114	3	0
831121	1	0
831128	1	0
TOTALS	41	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 2X 1 MARKED CHINOOK 0'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830802	3	0
830803	2	0
830805	1	0
830807	2	0
830808	1	0
830810	1	0
830811	2	0
830812	1	0
830813	3	0
830814	2	0
830817	2	0
830820	1	0
830821	3	0
830822	1	0
830823	2	0
830824	5	0
830826	2	0
830829	1	0
830831	1	0
830901	1	0
830905	2	0
830906	1	0
830907	1	0
830908	1	0
830909	3	0
830910	1	0
830911	8	0
830913	1	0
830917	1	0
830918	1	0
830919	2	0
830920	1	0
831004	1	0
831005	1	0
831017	1	0
831019	1	0
831020	2	0
831021	1	0
831104	1	0
831111	1	0
831123	1	0
831128	1	0
831202	2	0
TOTALS	73	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 2x 3 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830809	1	0
830810	1	0
830811	4	0
830812	5	0
830813	2	0
830814	2	0
830815	1	0
830819	2	0
830820	2	0
830822	1	0
830823	1	0
830824	4	0
830829	1	0
830830	1	0
830901	1	0
830902	2	0
830905	2	0
830907	1	0
830908	1	0
830909	2	0
830911	4	0
830916	1	0
830917	1	0
830920	1	0
830921	1	0
830922	1	0
830927	1	0
831003	3	0
831020	1	0
831107	1	0
831116	2	0
831121	1	0
831128	4	0
831130	1	0
831202	1	0
831205	1	0
TOTALS	62	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 7S 1 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830817	3	0
830818	1	0
830821	1	0
830822	1	0
830824	3	0
830827	2	0
830829	3	0
830903	1	0
830906	1	0
830908	1	0
830909	5	0
830910	2	0
830911	6	0
830920	1	0
831005	1	0
831007	1	0
831020	1	0
831031	1	0
831121	1	0
831123	3	0
TOTALS	39	0

LA 7S 3 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830823	4	0
830824	4	0
830825	1	0
830828	1	0
830829	1	0
830830	5	0
830905	1	0
830906	2	0
830908	1	0
830911	6	0
830912	1	0
830913	2	0
830916	2	0
830917	1	0
830918	1	0
830919	3	0
830921	1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LA 7S 3 MARKED CHINOOK 0"S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830922	1	0
830923	1	0
831003	1	0
831031	1	0
831107	1	0
831116	2	0
831128	1	0
831202	2	0
TOTALS	49	0

LD 7S 1 MARKED CHINOOK 0"S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830830	1	0
830831	4	0
830901	3	0
830902	4	0
830903	1	0
830905	4	0
830906	2	0
830907	3	0
830908	1	0
830909	1	0
830911	6	0
830912	1	0
830916	1	0
830918	2	0
830920	1	0
830922	2	0
830923	1	0
830926	1	0
830930	1	0
831017	1	0
831020	1	0
831031	2	0
831107	2	0
831111	1	0
831114	2	0
831116	1	0
831118	3	0
831123	1	0
831130	1	0

EFFECTIVE DATES: 4/1/83 THRU 12/16/83

LD 7S 1 MARKED CHINOOK O'S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
831202	1	0
831207	1	0
TOTALS	57	0

LD 7S 3 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830908	3	0
830909	2	0
830911	3	0
830912	1	0
831006	1	0
831012	1	0
831031	1	0
831111	1	0
831116	1	0
TOTALS	14	0

LA 7T 1 MARKED CHINOOK O'S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830620	1	0
830622	7	0
830625	2	0
830626	1	0
830627	7	0
830628	1	0
830629	1	0
830702	1	0
830709	3	0
830710	1	0
830711	1	0
830713	2	0
830714	1	0
830715	6	0
830716	2	0
830717	1	0
830726	1	0

EFFECTIVE DATES: 4/1/33 THRU 12/16/83

LA 7T 1 MARKED CHINOOK O*S

(CONTINUED)

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830807	1	0
830919	1	0
TOTALS	41	0

LA 7T 3 MARKED CHINOOK O*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830702	1	0
830709	4	0
830711	5	0
830712	3	0
830713	3	0
830714	1	0
830715	1	0
830716	1	0
830717	2	0
830719	1	0
830720	1	0
830806	1	0
TOTALS	24	0

LD 7T 1 MARKED CHINOOK O*S

DATE	NUMBER COLLECTED	ESTIMATED PASSAGE
830709	3	0
830710	1	0
830711	3	0
830712	2	0
830713	3	0
830714	1	0
830715	1	0
830716	2	0
830717	7	0
830719	1	0
830720	3	0
830727	1	0
TOTALS	28	0

APPENDIX G

Mark Release Summary, 1983

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK PURPOSE OF RELEASE	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					AN HEATED WATER IN INCUBATION	5	81	MARION FKS HAT	N SANTIAM@MINTO	452	830314	830314	22513	171	7	
					LV A STOCK-STK EVAL	6	82	HAGERMAN HAT	E FK SALMON R	1378	830411	830412	31348		4	
					RV B STOCK-STK EVAL	6	82	HAGERMAN HAT	UPPER SALMON R	1446	830418	830421	26173		4	
					RV PRODUCTION EVAL	5	81	MARION FKS HAT	N SANTIAM@MINTO	452	830314	830314	48205	125	19	
	LA	+F	1		BONN II PH BYPASS EVAL	5		CARSON HAT	BONN NEW P H	233	830427	830427	900			
	LA	+F	1		BONN II PH BYPASS EVAL	9		SPRING CR HAT	BONN NEW P H	233	830524	830524	664			
	LA	+F	3		BONN II PH BYPASS EVAL	5		CARSON HAT	BONN NEW P H	233	830427	830427	100			
	LA	+F	3		BONN II PH BYPASS EVAL	9		SPRING CR HAT	BONN NEW P H	233	830524	830524	935			
	RA	+F	1		BONN II PH BYPASS EVAL	5		CARSON HAT	BONN NEW P H	233	830426	830426	1006			
	RA	+F	1		BONN II PH BYPASS EVAL	9		SPRING CR HAT	BONN NEW P H	233	830523	830523	998			
	RA	+F	3		BONN II PH BYPASS EVAL	5		CARSON HAT	BONN NEW P H	233	830426	830426	100			
	RA	+F	3		BONN II PH BYPASS EVAL	9		SPRING CR HAT	BONN NEW P H	233	830523	830523	1000			
	RD	+F	1		BONN II PH BYPASS EVAL	5		CARSON HAT	BONN NEW P H	233	830428	830428	851			
	RD	+F	1		BONN II PH BYPASS EVAL	9		SPRING CR HAT	BONN NEW P H	233	830525	830525	976			
	RD	+F	3		BONN II PH BYPASS EVAL	5		CARSON HAT	BONN NEW P H	233	830428	830428	100			

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RD	+F	3			9		SPRING CR HAT	BONN NEW P H	233	830525	830525	994			
					BONN II PH BYPASS EVAL											
	LA	+J	1			5		CARSON HAT	BONN NEW P H	233	830427	830427	100			
					BONN II PH BYPASS EVAL											
	LA	+J	1			9		SPRING CR HAT	BONN NEW P H	233	830524	830524	996			
					BONN II PH BYPASS EVAL											
	LA	+J	3			5		CARSON HAT	BONN NEW P H	233	830427	830427	100			
					BONN II PH BYPASS EVAL											
	LA	+J	3			9		SPRING CR HAT	BONN NEW P H	233	830524	830524	1000			
					BONN II PH BYPASS EVAL											
	RA	+J	1			5		CARSON HAT	BONN NEW P H	233	830426	830426	100			
					BONN II PH BYPASS EVAL											
	RA.	+J	1			9		SPRING CR HAT	BONN NEW P H	233	830523	830523	1000			
					BONN II PH BYPASS EVAL											
	RA	+J	3			5		CARSON HAT	BONN NEW P H	233	830426	830426	100			
					BONN II PH BYPASS EVAL											
	RA	+J	3			9		SPRING CR HAT	BONN NEW P H	233	830523	830523	1000			
					BONN II PH BYPASS EVAL											
	RD	+J	1			5		CARSON HAT	BONN NEW P H	233	830428	830428	100			
					BONN II PH BYPASS EVAL											
	RD	+J	1			9		SPRING CR HAT	BONN NEW P H	233	830525	830525	984			
					BONN II PH BYPASS EVAL											
	RD	+J	3			5		CARSON HAT	BONN NEW P H	233	830428	830428	100			
					BONN II PH BYPASS EVAL											
	LA	+L	1			5	81	JOHN DAY R	JOHN DAY R@RM 245	741	830214	830416	44	110		
					POPULATION EST TIMING MIGRATION				(1 FISH REL IN 2/83)							
	LA	+L	3			5	81	JOHN DAY R	JOHN DAY R@RM 245	741	830410	830416	10	107		
					POPULATION EST TIMING MIGRATION											
	LA	+L	4			5	81	JOHN DAY R	JOHN DAY R@RM 245	741	830512	830512	4	105		
					POPULATION EST TIMING MIGRATION											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	RDT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE			REMARKS							
	LD	+L	1			5	81 JOHN DAY R	JOHN DAY R@RM 245	741	830220	830226	2	110		
					POPULATION EST TIMING MIGRATION										
	LD	+L	2			5	81 JOHN DAY R	JOHN DAY R@RM 245	741	830321	830325	54	106		
					POPULATION EST TIMING MIGRATION										
	LD	+L	4			5	81 JOHN DAY R	JOHN DAY R@RM 245	741	830516	830519	9	119		
					POPULATION EST TIMING MIGRATION										
	RA	+L	2			5	81 JOHN DAY R	JOHN DAY R@RM 245	741	830404	830408	24	106		
					POPULATION EST TIMING MIGRATION										
	RA	+L	3			5	81 JOHN DAY R	JOHN DAY R@RM 245	741	830501	830507	21	111		
					POPULATION EST TIMING MIGRATION										
	RD	+L	1			5	81 JOHN DAY R	JOHN DAY R@RM 175	629	830227	830305	15			
					POPULATION EST TIMING MIGRATION										
	RD	+L	2			5	81 JOHN DAY R	JOHN DAY R@RM 245	741	830328	830401	37	106		
					POPULATION EST TIMING MIGRATION										
	RD	+L	3			5	81 JOHN DAY R	JOHN DAY R@RM 245	741	830425	830429	23			
					POPULATION EST TIMING MIGRATION										
	RD	+L	4			5	81 JOHN DAY R	JOHN DAY R@RM 245	741	830523	830523	7			
					POPULATION EST TIMING MIGRATION										
	LA	+N	1			5	81 JOHN DAY R	N FK JOHN D@RM 60	744	830214	830416	68	90		
					POPULATION EST TIMING MIGRATION			(47 FISH REL IN 2/83)							
	LA	+N	2			5	81 JOHN DAY R	N FK JOHN D@RM 63	749	830314	830318	2			
					POPULATION EST TIMING MIGRATION										
	LA	+N	3			5	81 JOHN DAY R	N FK JOHN D@RM 60	744	830410	830416	157	90		
					POPULATION EST TIMING MIGRATION										
	LD	+N	1			5	81 JOHN DAY R	N FK JOHN D@RM 63	749	830220	830226	136	94		
					POPULATION EST TIMING MIGRATION										
	LD	+N	2			5	81 JOHN DAY R	N FK JOHN D@RM 63	749	830321	830325	51	92		
					POPULATION EST TIMING MIGRATION										
	LD	+N	3			5	81 JOHN DAY R	N FK JOHN D@RM 60	744	830417	830422	145			
					POPULATION EST TIMING MIGRATION										

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	RD	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LD	+N	4			5	81	JOHN DAY R	N FK JOHN D@RM 60	744	830516	830516	1	93		
				POPULATION EST TIMING MIGRATION												
	RA	+N	1			5	81	JOHN DAY R	N FK JOHN D@RM 63	749	830306	830312	40	93		
				POPULATION EST TIMING MIGRATION												
	RA	+N	2			5	81	JOHN DAY R	N FK JOHN D@RM 60	744	830404	830408	50	90		
				POPULATION EST TIMING MIGRATION												
	RD	+N	1			5	81	JOHN DAY R	N FK JOHN D@RM 60	744	830227	830305	123			
				POPULATION EST TIMING MIGRATION												
	RD	+N	2			5	81	JOHN DAY R	N FK JOHN D@RM 60	744	830328	830401	90	90		
				POPULATION EST TIMING MIGRATION												
	RD	+N	3			5	81	JOHN DAY R	N FK JOHN D@RM 60	744	830425	830429	10			
				POPULATION EST TIMING MIGRATION												
	LA	+P	3			5	81	JOHN DAY R	M FK JOHN D@RM 31	747	830410	830416	3	103		
				POPULATION EST TIMING MIGRATION												
	LD	+P	2			5	81	JOHN DAY R	M FK JOHN D@RM 31	747	830321	830325	7	103		
				POPULATION EST TIMING MIGRATION												
	LD	+P	4			5	81	JOHN DAY R	M FK JOHN D@RM 31	747	830516	830516	1	112		
				POPULATION EST TIMING MIGRATION												
	LA	+T	1	UC		5		MCNARY D	PORT KELLY WASH	501	830510	830510	1196			
				MCNARY EFFICIENCY												
	LA	+T	1	UC		1		MCNARY D	PORT KELLY WASH	501	830510	830510	279			
				MCNARY EFFICIENCY												
	LA	+T	1	UC		6		MCNARY D	PORT KELLY WASH	501	830511	830511	530			
				MCNARY EFFICIENCY												
	LA	+T	3	UC		5		MCNARY D	PORT KELLY WASH	501	830513	830513	1339			
				MCNARY EFFICIENCY												
	LA	+T	3	UC		1		MCNARY D	PORT KELLY WASH	501	830513	830513	233			
				MCNARY EFFICIENCY												
	LA	+T	3	UC		6		MCNARY D	PORT KELLY ORE	501	830514	830514	622			
				MCNARY EFFICIENCY												

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	LD	+T	1		UC	6		MCNARY D	PORT KELLY WASH	501	830608	830608	378			
					MCNARY EFFICIENCY											
	RA	+T	1		UC	5		MCNARY D	PORT KELLY ORE	501	830505	830505	1346			
					MCNARY EFFICIENCY											
	RA	+T	1		UC	1		MCNARY D	PORT KELLY ORE	501	830505	830505	262			
					MCNARY EFFICIENCY											
	RA	+T	1		UC	6		MCNARY D	PORT KELLY WASH	501	830506	830506	811			
					MCNARY EFFICIENCY											
	RA	+T	3		UC	5		MCNARY D	PORT KELLY ORE	501	830507	830507	1488			
					MCNARY EFFICIENCY											
	RA	+T	3		UC	1		MCNARY D	PORT KELLY ORE	501	830507	830507	436			
					MCNARY EFFICIENCY											
	RA.	+T	3		UC	6		MCNARY D	PORT KELLY WASH	501	830509	830509	639			
					MCNARY EFFICIENCY											
	RD	+T	1		UC	6		MCNARY D	PORT KELLY WASH	501	830531	830531	512			
					MCNARY EFFICIENCY											
	RD	+T	3		UC	6		MCNARY D	PORT KELLY WASH	501	830613	830613	757			
					MCNARY EFFICIENCY											
	LA	+U	4			5	81	JOHN DAY R	JOHN DAY R@RM 22	384	830509	830513	1			
					POPULATION EST TIMING MIGRATION											
	LD	+U	3			5	81	JOHN DAY R	JOHN DAY R@RM 22	384	830417	830422	3			
					POPULATION EST TIMING MIGRATION											
	LD	+U	4			5	81	JOHN DAY R	JOHN DAY R@RM 22	384	830516	830520	2			
					POPULATION EST TIMING MIGRATION											
	RA	+U	2			5	81	JOHN DAY R	JOHN DAY R@RM 22	384	830404	830408	2			
					POPULATION EST TIMING MIGRATION											
	RD	+U	2			5	81	JOHN DAY R	JOHN DAY R@RM 22	384	830328	830401	3			
					POPULATION EST TIMING MIGRATION											
	RD	+U	3			5	81	JOHN DAY R	JOHN DAY R@RM 22	384	830425	830429	5			
					POPULATION EST TIMING MIGRATION											

RELLASE DATA 1983

MAG TAG MULT	LDC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE / PURPOSE OF RELEASE	RELEASE SITE / REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA		+Y	1		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830214	830219	7	99		
	LA		+Y	2		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830314	830318	11			
	LA		+Y	3		5	81 JOHN DAY R POPULTION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830410	830416	428	112		
	LD		+Y	1		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830220	830226	7	110		
	LD		+Y	2		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830321	830325	266	114		
	LD		+Y	3		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830418	830422	113			
	LD		+Y	4		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830518	830518	8	115		
	RA		+Y	1		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830306	830312	15	109		
	RA		+Y	2		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830404	830408	248	114		
	RA		+Y	3		5	81 JOHN DAY R POPULATION EST. TIMING MIGRATION	JOHN DAY R@RM 175	629	830301	830307	48			
	RD		+Y	1		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830425	830429	94			
	RD		+Y	2		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830328	830401	233	114		
	RD		+Y	3		5	81 JOHN DAY R POPULATION EST TIMING MIGRATION	JOHN DAY R@RM 175	629	830227	830305	11	114		
*	LD	12	1		AD B STOCK	6	82 HAGERMAN HAT	E FK SALMON R (102460)	1378	830412	830413	19808		4	
	LD	12	4		HATCHERY EVAL	6	82 NIAGARA SPRINGS	PAHSIMEROI R	1311	830419	830419	20816		3	

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE											
*	RD	12	1		AD A STOCK-LARGE	6	82	HAGERMAN HAT	UPPER SALMON R (051333)	1446	830418	830420	20124		2	
*	RD	12	1		AD HATCHERY EVAL	5	81	RAPID R HAT	RAPID R HAT (42,288 CWT102318 REL@HELLS CAN 3/18)	967	830318	830326	68788		25	
*	RD	12	3		AD A STOCK-SMALL	6	82	HAGERMAN HAT	UPPER SALMON R (051334)	1446	830418	830420	20393		5	
	RD	12	4		 OFF SITE RELEASE EVAL	6	82	NIAGARA SPRINGS	HELLS CANYON D	912	830420	830420	12024		3	
	LA	13	1		UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY WASH	501	830429	830429	1635			
	LA	13	3		UC MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY WASH	501	830504	830504	1155			
	LA	13	3		UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY WASH	501	830503	830503	1993			
	LD	13	1		UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY WASH	501	830524	830524	391			
	LD	13	1		UC MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY WASH	501	830525	830525	1128			
	LD	13	3		UC MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY WASH	501	830528	830528	802			
	RA	13	1		UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY WASH	501	830422	830422	1488			
	RA	13	3		UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY WASH	501	830426	830426	1488			
	RD	13	1		UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY WASH	501	830517	830517	1375			
	RD	13	1		UC MCNARY EFFICIENCY	1		MCNARY D	PORT KELLY WASH	501	830517	830517	250			
	RD	13	1		UC MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY WASH	501	830518	830518	582			

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK PURPOSE OF RELEASE	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RD	13	3	UC	MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY WASH	501	830520	830520	1048			
	RD	13	3	UC	MCNARY EFFICIENCY	1		MCNARY D	PORT KELLY WASH	501	830520	830520	153			
	RD	13	3	UC	MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY WASH	501	830522	830522	1200			
	LA	15	1	UC	MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830510	830510	1194			
	LA	15	1	UC	MCNARY EFFICIENCY	1		MCNARY D	PORT KELLY ORE	501	830510	830510	276			
	LA	15	1	UC	MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY ORE	501	830511	830511	530			
	LA	15	3	UC	MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830513	830513	1348			
	LA	15	3	UC	MCNARY EFFICIENCY	1		MCNARY D	PORT KELLY ORE	501	830513	830513	243			
	LA	15	3	UC	MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY ORE	501	830514	830514	622			
	LD	15	1	UC	MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY ORE	501	830608	830608	377			
	RA	15	1	UC	MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830505	830505	1346			
	RA	15	1	UC	MCNARY EFFICIENCY	1		MCNARY D	PORT KELLY ORE	501	830505	830505	263			
	RA	15	1	UC	MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY ORE	501	830506	830506	815			
	RA	15	3	UC	MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830507	830507	1490			
	RA	15	3	UC	MCNARY EFFICIENCY	1		MCNARY D	PORT KELLY ORE	501	830507	830507	439			

Report Date 84/01/12
Last Revision Date :84/01/12

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	RDT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
				PURPOSE OF RELEASE												
	RA	15	3	UC		6		MCNARY D	PORT KELLY ORE	501	830509	830509	638			
				MCNARY EFFICIENCY												
	RD	15	1	UC		6		MCNARY D	PORT KELLY ORE	501	830531	830531	512			
				MCNARY EFFICIENCY												
	RD	15	3	UC		6		MCNARY D	PORT KELLY ORE	501	830603	830603	812			
				MCNARY EFFICIENCY												
	LA	2	1	UC		5		MCNARY D	MCNARY D	470	830415	830415	100			
				MCNARY SYSTEMS ANALYSIS												
	LA	2	2	UC		5		MCNARY D	MCNARY D	470	830418	830418	100			
				MCNARY SYSTEMS ANALYSIS												
	LA	2	3	UC		5		MCNARY D	MCNARY D	470	830420	830420	100			
				MCNARY SYSTEMS ANALYSIS												
	RA	2	1	UC		5		MCNARY D	MCNARY D	470	830415	830415	100			
				MCNARY SYSTEMS ANALYSIS												
	RA	2	2	UC		5		MCNARY D	MCNARY D	470	830418	830418	100			
				MCNARY SYSTEMS ANALYSIS												
	RA	2	3	UC		5		MCNARY D	MCNARY D	470	830420	830420	100			
				MCNARY SYSTEMS ANALYSIS												
	RD	2	1	UC		5		MCNARY D	MCNARY D	470	830415	830415	100			
				MCNARY SYSTEMS ANALYSIS												
	RD	2	2	UC		5		MCNARY D	MCNARY D	470	830418	830418	100			
				MCNARY SYSTEMS ANALYSIS												
	RD	2	3	UC		5		MCNARY D	MCNARY D	470	830420	830420	100			
				MCNARY SYSTEMS ANALYSIS												
	LA	2L	1	AD		9		MCNARY D	MCNARY TAIL	469	830708	830708	4990			
*				MCNARY TRANS EVAL					(231627)							
	LA	2L	3	AD		9		MCNARY D	MCNARY TAIL	469	830713	830713	5005			
*				MCNARY TRANS EVAL					(231627)							
	LD	2L	1	AD		9		MCNARY D	MCNARY TAIL	469	830715	830715	5015			
*				MCNARY TRANS EVAL					(231627)							

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK PURPOSE OF RELEASE	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA	2T	1		AD MCNARY TRANS EVAL	9		MCNARY D	MCNARY TAIL (231630)	469	830720	830720	5020			
*	LA	2T	3		AD MCNARY TRANS EVAL	9		MCNARY D	MCNARY TAIL (231630)	469	830723	830723	5010			
*	LD	2T	1		AD MCNARY TRANS EVAL	9		MCNARY D	MCNARY TAIL (231630)	469	830727	830727	4660			
*	LA	2X	1		AD MCNARY TRANS EVAL	9		MCNARY D	MCNARY TAIL (231633)	469	830729	830729	5941			
*	LA	2X	3		AD MCNARY TRANS EVAL	9		MCNARY D	MCNARY TAIL (231633)	469	830805	830805	4660			
	LA	3C	1		UC LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830414	830414	5390			
	LA	3C	3		UC LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830420	830420	4003			
	LD	3C	1		UC LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830426	830426	5259			
	LD	3C	3		UC LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830430	830430	2816			
	RA	3C	1		UC LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830412	830412	4819			
	RA	3C	3		UC LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830418	830418	3036			
	RD	3C	1		UC LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830422	830422	4483			
	RD	3C	3		UC LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830428	830428	3707			
	LA	3J	1		UC LO GRANITE/PORT KELLY REL	6		LO GRANITE D	PORT KELLY WASH	501	830513	830513	1812			
	LA	3J	2		UC MCNARY EFFICIENCY	6		LO GRANITE D	PORT KELLY WASH	501	830520	830520	2927			

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA	3J	3	UC	PURPOSE OF RELEASE: MCNARY EFFICIENCY	6		LO GRANITE D	PORT KELLY WASH	501	830527	830527	2232			
	LA	3J	4	UC	MCNARY EFFICIENCY	6		LO GRANITE D	PORT KELLY ORE	501	830604	830604	2230			
	RA	3J	1	UC	LO GRANITE/PORT KELLY REL	6		LO GRANITE D	PORT KELLY ORE	501	830513	830513	1906			
	RA	3J	2	UC	MCNARY EFFICIENCY	6		LO GRANITE D	PORT KELLY ORE	501	830520	830520	2687			
	RA	3J	3	UC	MCNARY EFFICIENCY	6		LO GRANITE D	PORT KELLY ORE	501	830527	830527	1955			
	RA	3J	4	UC	MCNARY EFFICIENCY	6		LO GRANITE D	PORT KELLY WASH	501	830604	830604	1865			
	LA	3L	1		SURVIVAL/TRAVEL TIME	6		LO GRANITE D	LIT GOOSE TAIL	633	830510	830510	2494			
	LA	3L	1	UC	LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830504	830504	4129			
	LA	3L	2		SURVIVAL/TRAVEL TIME	6		LO GRANITE D	LIT GOOSE TAIL	633	830518	830518	5343			
	LA	3L	3		SURVIVAL/TRAVEL TIME	6		LO GRANITE D	LIT GOOSE TAIL	633	830524	830524	3850			
	LA	3L	4		SURVIVAL/TRAVEL TIME	6		LO GRANITE D	LIT GOOSE TAIL	633	830531	830531	1567			
	LD	3L	4		SURVIVAL/TRAVEL TIME	6		LO GRANITE D	LIT GOOSE TAIL	633	830602	830602	2278			
	RA	3L	1		SURVIVAL/TRAVEL TIME	6		LO GRANITE D	LIT GOOSE TAIL	633	830509	830509	5308			
	RA	3L	1	UC	LO GRANITE EFFICIENCY	5		LO GRANITE D	PORT WILMA WASH	741	830502	830502	2687			
	RA	3L	2		SURVIVAL/TRAVEL TIME	6		LO GRANITE D	LIT GOOSE TAIL	633	830517	830517	3508			

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RA	3L	3				6	LO GRANITE D	LIT GOOSE TAIL	633	830523	830523	9120			
					SURVIVAL/TRAVEL TIME											
	RA	3L	4				6	LO GRANITE D	LIT GOOSE TAIL	633	830530	830530	2227			
					SURVIVAL/TRAVEL TIME											
	RD	3L	1				6	LO GRANITE D	LIT GOOSE TAIL	633	830511	830511	2227			
					SURVIVAL/TRAVEL TIME											
	RD	3L	1		UC		5	LO GRANITE D	PORT WILMA WASH	741	830506	830506	3612			
					LO GRANITE EFFICIENCY											
	RD	3L	2				6	LO GRANITE D	LIT GOOSE TAIL	633	830519	830519	6368			
					SURVIVAL/TRAVEL TIME											
	RD	3L	3				6	LO GRANITE D	LIT GOOSE TAIL	633	830526	830526	2124			
					SURVIVAL/TRAVEL TIME											
	RD.	3L	4				6	LO GRANITE D	LIT GOOSE TAIL	633	830601	830601	2287			
					SURVIVAL/TRAVEL TIME											
*	LA	3X	1		AD		5	LEAVENWORTH	NACHES R@NILE SP (051338)	773	830420	830420	9905			
					YAKIMA INDIANS											
	LA	4	1				5	CARSON HAT	BONN NEW P H	233	830427	830427	997			
					BONN II PH BYPASS EVAL											
	RA	4	1				5	CARSON HAT	BONN NEW P H	233	830426	830426	426			
					BONN II PH BYPASS EVAL											
	RD	4	1				5	CARSON HAT	BONN NEW P H	233	830428	830428	1000			
					BONN II PH BYPASS EVAL											
	RD	4	3			9	82	SPRING CR HAT	BONN NEW P H	233	830524	830524	970			
					BONN II PH BYPASS EVAL											
	LA	7C	1		UC		5	MCNARY D	MCNARY D	470	830417	830417	100			
					MCNARY SYSTEMS ANALYSIS											
	LA	7C	3		UC		5	MCNARY D	MCNARY D	470	830419	830419	100			
					MCNARY SYSTEMS ANALYSIS											
	RA	7C	1		UC		5	MCNARY D	MCNARY D	470	830418	830418	100			
					MCNARY SYSTEMS ANALYSIS											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE											
	RA	7C	3		UC	5		MCNARY D	MCNARY D	470	830420	830420	100			
					MCNARY SYSTEMS ANALYSIS											
	RD	7C	1		UC	5		MCNARY D	MCNARY D	470	830417	830417	100			
					MCNARY SYSTEMS ANALYSIS											
	RD	7C	3		UC	5		MCNARY D	MCNARY D	470	830419	830419	100			
					MCNARY SYSTEMS ANALYSIS											
	LA	7F	1		UC	5		MCNARY D	MCNARY D	470	830417	830417	100			
					MCNARY SYSTEMS ANALYSIS											
	LA	7F	3		UC	5		MCNARY D	MCNARY D	470	830419	830419	100			
					MCNARY SYSTEMS ANALYSIS											
	RA	7F	1		UC	5		MCNARY D	MCNARY D	470	830418	830418	100			
					MCNARY SYSTEMS ANALYSIS											
	RA	7F	3		UC	5		MCNARY D	MCNARY D	470	830420	830420	100			
					MCNARY SYSTEMS ANALYSIS											
	RD	7F	1		UC	5		MCNARY D	MCNARY D	470	830417	830417	100			
					MCNARY SYSTEMS ANALYSIS											
	RD	7F	3		UC	5		MCNARY D	MCNARY D	470	830419	830419	100			
					MCNARY SYSTEMS ANALYSIS											
	LA	7H	1		AD	5		LEAVENWORTH	YAKIMA R@ELLENSBURG	776	830418	830422	8225			
*					YAKIMA INDIANS				(051339)							
	LA	7S	1		AD	9		MCNARY D	MCNARY TAIL	469	830812	830812	4893			
*					JOHN DAY POOL EVAL				(231624)							
	LA	7S	3		AD	9		MCNARY D	MCNARY TAIL	469	830819	830819	4889			
*					JOHN DAY POOL EVAL				(231624)							
	LD	7S	1		AD	9		MCNARY D	MCNARY TAIL	469	830826	830826	5655			
*					JOHN DAY POOL EVAL				(231624)							
	LD	7S	3		AD	9		MCNARY D	MCNARY TAIL	469	830902	830902	1855			
*					JOHN DAY POOL EVAL				(231624)							
	LA	7T	1		AD	9		MCNARY D	MCNARY TAIL	469	830616	830616	1458			
*					JOHN DAY POOL EVAL				(231623)							

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
				PURPOSE OF RELEASE				REMARKS							
*	LA	7T	3	AD JOHN DAY POOL EVAL	9		MCNARY D	MCNARY TAIL (231623)	469	830622	830622	5199			
*	LD	7T	1	AD JOHN DAY POOL EVAL	9		MCNARY D	MCNARY TAIL (231623)	469	830630	830630	5018			
	LA	7U	1	UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830429	830429	1632			
	LA	7U	3	UC MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY ORE	501	830504	830504	1155			
	LA	7U	3	UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830503	830503	1950			
	LD	7U	1	UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830524	830524	391			
	LD.	7U	1	UC MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY ORE	501	830525	830525	1123			
	LD	7U	3	UC MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY ORE	501	830528	830528	1025			
	RA	7U	1	UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830422	830422	1483			
	RA	7U	3	UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830426	830426	1492			
	RD	7U	1	UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830517	830517	1378			
	RD	7U	1	UC MCNARY EFFICIENCY	1		MCNARY D	PORT KELLY ORE	501	830517	830517	251			
	RD	7U	1	UC MCNARY EFFICIENCY	6		MCNARY D	PORT KELLY ORE	501	830518	830518	583			
	RD	7U	3	UC MCNARY EFFICIENCY	5		MCNARY D	PORT KELLY ORE	501	830520	830520	1048			
	RD	7U	3	UC MCNARY EFFICIENCY	1		MCNARY D	PORT KELLY ORE	501	830520	830520	153			

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RD	7U	3		UC		6	MCNARY D	PORT KELLY ORE	501	830522	830522	1194			
					MCNARY EFFICIENCY											
	LA	A	1				9	SPRING CR HAT	BONN NEW P H	233	830524	830524	100			
					BONN II PH BYPASS EVAL											
	RA	A	1				9	SPRING CR HAT	BONN NEW P H	233	830523	830523	100			
					BONN II PH BYPASS EVAL											
	RD	A	1				9	SPRING CR HAT	BONN NEW P H	233	830525	830525	100			
					BONN II PH BYPASS EVAL											
	LA	AN	1				5	CARSON HAT	BONN NEW P H	233	830427	830427	988			
					BONN II PH BYPASS EVAL											
	LA	AN	1				9	SPRING CR HAT	BONN NEW P H	233	830524	830524	100			
					BONN II PH BYPASS EVAL											
	LD	AN	1				9	SPRING CR HAT	BONN NEW P H	233	830524	830524	1000			
					BONN II PH BYPASS EVAL											
	RA	AN	1				9	SPRING CR HAT	BONN NEW P H	233	830523	830523	100			
					BONN II PH BYPASS EVAL											
	RD	AN	1				5	CARSON HAT	BONN NEW P H	233	830428	830428	1000			
					BONN II PH BYPASS EVAL											
	RD	AN	1				9	SPRING CR HAT	BONN NEW P H	233	830525	830525	100			
					BONN II PH BYPASS EVAL											
	RD	AN	3				9	SPRING CR HAT	BONN NEW P H	233	830525	830525	1032			
					BONN II PH BYPASS EVAL											
	LA	D	1				9	JOHN DAY RES	JOHN D FOREBAY	348	830929	830929	103			
					JOHN DAY PURSE SEINE											
	LA	E	1				9	JOHN DAY RES	CROW BUTTE@RM 267	430	830713	830713	1655			
					JOHN DAY PURSE SEINE											
	LA	E	2				9	JOHN DAY RES	WILLOW CR@RM 253	407	830712	830712	1108			
					JOHN DAY PURSE SEINE											
	LA	E	3				9	JOHN DAY RES	JOHN D FOREBAY	348	830707	830707	534			
					JOHN DAY PURSE SEINE											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP OTHER MARK SP	BY HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
				PURPOSE OF RELEASE									
	LA	E	4	9	JOHN DAY RES	BLALOCK@RM 232	373	830706	830706	363			
				JOHN DAY PURSE SEINE									
	LD	E	1	9	JOHN DAY RES	ARLINGTON@RM 242	389	830714	830714	1786			
				JOHN DAY PURSE SEINE									
	LD	E	2	9	JOHN DAY RES	GOODNOE@RM 222	357	830720	830720	979			
				JOHN DAY PURSE SEINE									
	LD	E	3	9	JOHN DAY RES	JOHN D FOREBAY	348	830721	830721	1902			
				JOHN DAY PURSE SEINE									
	RA	F	1	5	LO GRANITE D	BLW BONN D (231621)	230	830421	830423	13498			
*													
	RA	F	2	5	LO GRANITE D	BLW BONN D (231621)	230	830425	830427	11254			
*													
	RA	F	3	5	LO GRANITE D	BLW BONN D (231622)	230	830429	830505	14278			
*													
	RA	F	4	5	LO GRANITE D	BLW BONN D (231622)	230	830507	830525	5570			
*													
	LA	G	1	UC 5	MCNARY D	MCNARY D	470	830417	830417	100			
				MCNARY SYSTEMS ANALYSIS									
	LA	G	3	UC 5	MCNARY D	MCNARY D	470	830419	830419	100			
				MCNARY SYSTEMS ANALYSIS									
	RA	G	1	UC 5	MCNARY D	MCNARY D	470	830418	830418	100			
				MCNARY SYSTEMS ANALYSIS									
	RA	G	3	UC 5	MCNARY D	MCNARY D	470	830420	830420	100			
				MCNARY SYSTEMS ANALYSIS									
	RD	G	1	UC 5	MCNARY D	MCNARY D	470	830417	830417	100			
				MCNARY SYSTEMS ANALYSIS									
	RD	G	3	UC 5	MCNARY D	MCNARY D	470	830419	830419	100			
				MCNARY SYSTEMS ANALYSIS									
	LA	HF	1	9	JOHN DAY RES	WILLOW CR@RM 253	407	830726	830726	735			
				JOHN DAY PURSE SEINE									

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA	HE	2				9	JOHN DAY RES	CROW BUTTE@RM 267	430	830727	830727	289			
					JOHN DAY PURSE SEINE											
	LA	HE	3				9	JOHN DAY RES	ARLINGTON@RM 242	389	830728	830728	1751			
					JOHN DAY PURSE SEINE											
	LA	HE	4				9	JOHN DAY RES	BLALOCK@RM 232	373	830802	830802	1194			
					JOHN DAY PURSE SEINE											
	LD	HE	1				9	JOHN DAY RES	GOODNOE@RM 222	357	830803	830803	604			
					JOHN DAY PURSE SEINE											
	LD	HE	2				9	JOHN DAY RES	JOHN D FOREBAY	348	830804	830804	931			
					JOHN DAY PURSE SEINE											
	LD	HE	3				9	JOHN DAY RES	CROW BUTTE@RM 267	430	830810	830810	853			
					JOHN DAY PURSE SEINE											
	LD	HE	4				9	JOHN DAY RES	ARLINGTON@RM 242	389	830811	830811	1139			
					JOHN DAY PURSE SEINE											
	LP	HE	1				9	JOHN DAY RES	BLALOCK@RM 232	373	830816	830816	1011			
					JOHN DAY PURSE SEINE											
	LP	HE	2				9	JOHN DAY RES	GOODNOE@RM 222	357	830817	830817	1047			
					JOHN DAY PURSE SEINE											
	LP	HE	3				9	JOHN DAY RES	JOHN D FOREBAY	348	830818	830818	411			
					JOHN DAY PURSE SEINE											
	LP	HE	4				9	JOHN DAY RES	WILLOW CR@RM 253	407	830823	830823	319			
					JOHN DAY PURSE SEINE											
	RA	HE	1				9	JOHN DAY RES	CROW BUTTE@RM 267	430	830824	830824	788			
					JOHN DAY PURSE SEINE											
	RA	HE	2				9	JOHN DAY RES	JOHN D FOREBAY	348	830901	830901	305			
					JOHN DAY PURSE SEINE											
	RA	HE	3				9	JOHN DAY RES	WILLOW CR@RM 253	407	830906	830906	572			
					JOHN DAY PURSE SEINE											
	RA	HE	4				9	JOHN DAY RES	JOHN D FOREBAY	348	830907	830907	552			
					JOHN DAY PURSE SEINE											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RD	HE	1			9		JOHN DAY RES	ARLINGTON@RM 242	389	830908	830908	194			
					JOHN DAY PURSE SEINE											
	RD	HE	2			9		JOHN DAY RES	BLALOCK@RM 232	373	830913	830913	280			
	RD	HE	3			9		JOHN DAY RES	GOODNOE@RM 222	357	830914	830914	170			
					JOHN DAY PURSE SEINE											
	RD	HE	4			9		JOHN DAY RES	JOHN D FOREBAY	348	830915	830915	39			
					JOHN DAY PURSE SEINE											
	RP	HE	1			9		JOHN DAY RES	WILLOW CR@RM 253	407	830920	830920	171			
					JOHN DAY PURSE SEINE											
	RP	HE	2			9		JOHN DAY RES	CROW BUTTE@RM 267	430	830921	830921	146			
					JOHN DAY PURSE SEINE											
	RP	HE	3			9		JOHN DAY RES	ARLINGTON@RM 242	389	830922	830922	213			
					JOHN DAY PURSE SEINE											
	RP	HE	4			9		JOHN DAY RES	GOODNOE@RM 222	357	830928	830928	62			
					JOHN DAY PURSE SEINE											
	LA	IC	2		UC	5		MCNARY D	MCNARY D	470	830418	830418	100			
					MCNARY SYSTEMS ANALYSIS											
	LA	IC	3		UC	5		MCNARY D	MCNARY D	470	830420	830420	100			
					MCNARY SYSTEMS ANALYSIS											
	RA	IC	1		UC	5		MCNARY D	MCNARY D	470	830415	830415	100			
					MCNARY SYSTEMS ANALYSIS											
	RA	IC	2		UC	5		MCNARY D	MCNARY D	470	830418	830418	100			
					MCNARY SYSTEMS ANALYSIS											
	RA	IC	3		UC	5		MCNARY D	MCNARY D	470	830420	830420	100			
					MCNARY SYSTEMS ANALYSIS											
	RD	IC	1		UC	5		MCNARY D	MCNARY D	470	830415	830415	100			
					MCNARY SYSTEMS ANALYSIS											
	RD	IC	2		UC	5		MCNARY D	MCNARY D	470	830418	830418	100			
					MCNARY SYSTEMS ANALYSIS											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE REMARKS	Km	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE										
	RD	IC	3		UC	5	MCNARY D	MCNARY D	470	830420	830420	100			
					MCNARY SYSTEMS ANALYSIS										
	LA	IF	1		UC	5	MCNARY D	MCNARY D	470	830415	830415	100			
					MCNARY SYSTEMS ANALYSIS										
	LA	IF	2		UC	5	MCNARY D	MCNARY D	470	830418	830418	100			
					MCNARY SYSTEMS ANALYSIS										
	LA	IF	3		UC	5	MCNARY D	MCNARY D	470	830420	830420	100			
					MCNARY SYSTEMS ANALYSIS										
	RA	IF	1		UC	5	MCNARY D	MCNARY D	470	830415	830415	100			
					MCNARY SYSTEMS ANALYSIS										
	RA	IF	2		UC	5	MCNARY D	MCNARY D	470	830418	830418	100			
					MCNARY SYSTEMS ANALYSIS										
	RA	IF	3		UC	5	MCNARY D	MCNARY D	470	830420	830420	100			
					MCNARY SYSTEMS ANALYSIS										
	RD	IF	1		UC	5	MCNARY D	MCNARY D	470	830415	830415	100			
					MCNARY SYSTEMS ANALYSIS										
	RD	IF	2		UC	5	MCNARY D	MCNARY D	470	830418	830418	100			
					MCNARY SYSTEMS ANALYSIS										
	RD	IF	3		UC	5	MCNARY D	MCNARY D	470	830420	830420	100			
					MCNARY SYSTEMS ANALYSIS										
	LA	IH	1			5	LEAVENWORTH	PORT KELLY WASH	501	830520	830520	1261			
					PUD EFFICIENCY										
	LA	IH	2			5	LEAVENWORTH	PORT KELLY WASH	501	830523	830523	1512			
					PUD EFFICIENCY										
	LA	IH	3			5	LEAVENWORTH	PORT KELLY WASH	501	830526	830526	1535			
					PUD EFFICIENCY										
	LA	IK	1			5	LEAVENWORTH	PR RAPID RES	640	830503	830503	8291			
					PUD SYSTEMS MORTALITY										
	LA	IK	2			5	LEAVENWORTH	PR RAPID RES	640	830515	830515	7988			
					PUD SYSTEMS MORTALITY										

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA	IL	1				5	LEAVENWORTH	PATEROS FERRY	839	830422	830422	44655			
				PUD SYSTEMS MORTALITY												
	LA	IL	2				5	LEAVENWORTH	PATEROS FERRY	839	830426	830426	45575			
				PUD SYSTEMS MORTALITY												
	LA	IM	1				5	LEAVENWORTH	PORT KELLY WASH	501	830512	830512	1510			
				PUD EFFICIENCY												
	LA	IM	2				5	LEAVENWORTH	PORT KELLY WASH	501	830514	830514	1575			
				PUD EFFICIENCY												
	LA	IM	3				5	LEAVENWORTH	PORT KELLY WASH	501	830517	830517	1522			
				PUD EFFICIENCY												
	LA	IN	1				5	LEAVENWORTH	PR RAPID RES	640	830507	830507	8463			
				PUD SYSTEMS MORTALITY												
	LA	IN	2				5	LEAVENWORTH	PR RAPID RES	640	830517	830517	8216			
				PUD SYSTEMS MORTALITY												
	LA	IR	1				5	LEAVENWORTH	PR RAPID RES	640	830505	830505	8260			
				PUD SYSTEMS MORTALITY												
	LA	IR	2				5	LEAVENWORTH	PR RAPID RES	640	830509	830509	8404			
				PUD SYSTEMS MORTALITY												
	LA	IS	1				5	LEAVENWORTH	PORT KELLY WASH	501	830504	830504	1508			
				PUD EFFICIENCY												
	LA	IS	2				5	LEAVENWORTH	PORT KELLY WASH	501	830506	830506	1514			
				PUD EFFICIENCY												
	LA	IT	1				5	LEAVENWORTH	PORT KELLY WASH	501	830508	830508	1544			
				PUD EFFICIENCY												
	LA	IT	2				5	LEAVENWORTH	PORT KELLY WASH	501	830510	830510	1519			
				PUD EFFICIENCY												
	LA	IU	1				5	81 WINTHROP HAT	METHOW R@HAT	919	830413	830413	25000			
				MID-COL RATES & TIMING												
	RA	IU	2				6	81 CHELAN HAT	ENTIAT R	790	830415	830415	25000			
				MID-COL RATES & TIMING												

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE											
	LA	IV	1			5		LEAVENWORTH	ROCK ISLAND D	725	830502	830502	24568			
					PUD SYSTEMS MORTALITY											
	LA	IV	2			5		LEAVENWORTH	ROCK ISLAND D	725	830508	830508	24439			
					PUD SYSTEMS MORTALITY											
	LA	IX	1			5		LEAVENWORTH	PR RAPID RES	640	830511	830511	8203			
					PUD SYSTEMS MORTALITY											
	LA	IX	2			5		LEAVENWORTH	PR RAPID RES	640	830513	830513	8736			
					PUD SYSTEMS MORTALITY											
	LA	IY	1			5		LEAVENWORTH	ROCK ISLAND D	725	830428	830428	24938			
					PUD SYSTEMS MORTALITY											
	LA	IY	2			5		LEAVENWORTH	ROCK ISLAND D	725	830506	830506	22204			
					PUD SYSTEMS MORTALITY											
	LA	IZ	1			5		LEAVENWORTH	PATEROS FERRY	839	830430	830430	45816			
					PUD SYSTEMS MORTALITY											
	LA	IZ	2			5		LEAVENWORTH	PATEROS FERRY	839	830504	830504	45433			
					PUD SYSTEMS MORTALITY											
	LA	J	1			6		MCNARY D	MCNARY TAIL	469	830510	830510	1689			
					MCNARY EFFICIENCY											
	LA	J	1			5		MCNARY D	MCNARY TAIL	469	830511	830511	1662			
					MCNARY EFFICIENCY											
	LA	J	1			1		MCNARY D	MCNARY TAIL	469	830511	830511	360			
					MCNARY EFFICIENCY											
	LA	J	3			6		MCNARY D	MCNARY TAIL	469	830513	830513	2453			
					MCNARY EFFICIENCY											
	LA	J	3		UC	5		MCNARY D	MCNARY TAIL	469	830514	830514	1299			
					MCNARY EFFICIENCY											
	LA	J	3		UC	1		MCNARY D	MCNARY TAIL	469	830514	830514	183			
					MCNARY EFFICIENCY											
	LD	J	1		UC	6		MCNARY D	MCNARY TAIL	469	830604	830604	615			
					MCNARY EFFICIENCY											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP OTHER MARK PURPOSE OF RELEASE	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RA	J	1	MCNARY EFFICIENCY	6		MCNARY D	MCNARY TAIL	469	830505	830505	2859			
	RA	J	1	MCNARY EFFICIENCY	5		MCNARY D	MCNARY TAIL	469	830506	830506	2176			
	RA	J	1	MCNARY EFFICIENCY	1		MCNARY D	MCNARY TAIL	469	830506	830506	769			
	RA	J	3	MCNARY EFFICIENCY	6		MCNARY D	MCNARY TAIL	469	830507	830507	1451			
	RA	J	3	MCNARY EFFICIENCY	5		MCNARY D	MCNARY TAIL	469	830509	830509	2015			
	RA	J	3	MCNARY EFFICIENCY	1		MCNARY D	MCNARY TAIL	469	830509	830509	943			
	RD	J	1	UC MCNARY EFFICIENCY	6		MCNARY D	MCNARY TAIL	469	830530	830530	1314			
	RD	J	3	UC MCNARY EFFICIENCY	6		MCNARY D	MCNARY TAIL	469	830601	830601	770			
	LA	KE	1	WILD STOCK	5	81	WARM SPRING TRAP	WARM SPRING TRAP	464	830516	830517	88			
	LA	KE	3	AD AFFECTS OF FALLS	5	81	RND BUTTE HAT	WH R ABV FALLS	402	830613	831024	841			
	LA	KE	4	AFFECTS OF FALLS	5	81	RND BUTTE HAT	WH R ABV FALLS	402	831017	831017	161	129	12	
	RA	KE	3	LP AFFECTS OF FALLS	6	81	RND BUTTE HAT	WH R BLW FALLS	401	830606	830606	1027	183	6	
	RD	KE	2	RF AFFECTS OF FALLS	6	81	RND BUTTE HAT	WH R ABV FALLS	402	830601	830601	1032	183	6	
	LA	P	1	BONN II PH BYPASS EVAL	5		CARSON HAT	BONN NEW P H	233	830427	830427	995			
	LA	P	1	BONN II PH BYPASS EVAL	9		SPRING CR HAT	BONN NEW P H	233	830524	830524	100			

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RA	P	1		5			CARSON HAT	BONN NEW P H	233	830426	830426	994			
					BONN II PH BYPASS EVAL											
	RA	P	1		9			SPRING CR HAT	BONN NEW P H	233	830523	830523	100			
					BONN II PH BYPASS EVAL											
	RD	P	1		5			CARSON HAT	BONN NEW P H	233	830428	830428	1000			
					BONN II PH BYPASS EVAL											
	RD	P	1		9			SPRING CR HAT	BONN NEW P H	233	830525	830525	100			
					BONN II PH BYPASS EVAL											
	RA	PI	1		5	81		COWLITZ HAT	BIG WH REAR PD	273	821121	821121	171460		30	
	RA	PI	4		5	81		COWLITZ HAT	BIG WH REAR PD (050953;050952;051116)	273	821121	821121	124435		30	
	LA	R	1		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830512	830514	42			
					WHITEBIRD SCOOP TRAP											
	LA	R	1		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830512	830514	138			
					WHITEBIRD SCOOP TRAP											
	LA	R	2		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830515	830517	123			
					WHITEBIRD SCOOP TRAP											
	LA	R	2		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830515	830517	195			
					WHITEBIRD SCOOP TRAP											
	LA	R	3		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830518	830520	68			
					WHITEBIRD SCOOP TRAP											
	LA	R	3		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830518	830520	138			
					WHITEBIRD SCOOP TRAP											
	LA	R	4		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830521	830524	68			
					WHITEBIRD SCOOP TRAP											
	LA	R	4		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830521	830524	299			
					WHITEBIRD SCOOP TRAP											
	LD	R	1		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830418	830420	1221			
					WHITEBIRD SCOOP TRAP											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	LD	R	1		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830420	830420	4			
					WHITEBIRD SCOOP TRAP											
	LD	R	2		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830421	830423	3004			
					WHITEBIRD SCOOP TRAP											
	LD	R	2		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830421	830422	10			
					WHITEBIRD SCOOP TRAP											
	LD	R	3		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830424	830426	403			
					WHITEBIRD SCOOP TRAP											
	LD	R	3		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830424	830426	106			
					WHITEBIRD SCOOP TRAP											
	LD	R	4		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830427	830429	520			
					WHITEBIRD SCOOP TRAP											
	LD	R	4		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830427	830429	348			
					WHITEBIRD SCOOP TRAP											
	RA	R	1		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830430	830502	634			
					WHITEBIRD SCOOP TRAP											
	RA	R	1		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830430	830502	88			
					WHITEBIRD SCOOP TRAP											
	RA	R	2		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830503	830505	582			
					WHITEBIRD SCOOP TRAP											
	RA	R	2		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830503	830505	141			
					WHITEBIRD SCOOP TRAP											
	RA	R	3		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830506	830508	287			
					WHITEBIRD SCOOP TRAP											
	RA	R	3		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830506	830508	379			
					WHITEBIRD SCOOP TRAP											
	RA	R	4		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830509	830511	167			
					WHITEBIRD SCOOP TRAP											
	RA	R	4		6			WHITEBIRD TRAP	SALMON R@RM 53	908	830509	830511	278			
					WHITEBIRD SCOOP TRAP											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RD	R	1		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830406	830407	1781			
					WHITEBIRD SCOOP TRAP											
	RD	R	2		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830409	830411	2839			
					WHITEBIRD SCOOP TRAP											
	RD	R	3		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830412	830414	3014			
					WHITEBIRD SCOOP TRAP											
	RD	R	4		5			WHITEBIRD TRAP	SALMON R@RM 53	908	830415	830417	2348			
					WHITEBIRD SCOOP TRAP											
	LD	S	2		6	82		LYONS FERRY HAT	LYONS FERRY	600	830501	830520	51391		4	
					BROOD STK SELECTION											
	LD	SU	3		5	81		DWORSHAK HAT	N FK CLEARWATER	809	821216	821216	28100	166	12	
					LITTLE WHITE STK EVAL											
	RD	SU	3		5	81		DWORSHAK HAT	N FK CLEARWATER	809	830401	830401	18194		7	
					LITTLE WHITE STK EVAL											
	LD	T	1	AD	9	82		HAGERMAN HAT	CLEAR CR	868	830614	830614	19509		25	
*					AGE O-BKD STUDY				(102515)							
	LD	T	4		5	81		PAHSIMEROI R	PAHSIMEROI R	1311	830310	830310	25123		22	425899
					HATCHERY EVAL											
	RA	T	1		5	81		KOOSKIA HAT	CLEAR CR	868	830404	830412	14679	155	15	
					DENSITY STUDY-KOOSKIA STK											
	RA	T	2		5	81		KOOSKIA HAT	CLEAR CR	868	830404	830412	7956	160	13	
					DENSITY STUDY-KOOSKIA STK											
	RD	T	1	AD	5	81		MCCALL HAT	S FK SALMON R	1153	830404	830407	24853		20	
*					HATCHERY EVAL				(102458)							
	RD	T	2	AD	5	81		SAWTOOTH HAT	UPPER SALMON R	1446	830329	830329	26549		29	
*					HATCHERY EVAL				(102535)							
	RD	T	3	AD	5	81		RAPID R HAT	HELLS CANYON D	912	830318	830318	43112		27	
*					OFF SITE RELEASE EVAL				(102717)							
	LA	U	4		9	82		BONNEVILLE HAT	PRESCOTT ORE	115	830512	830515	51071			
					JONES BEACH SURVIVAL STUDY											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LD	U	1			9	82	SPRING CR HAT	BLW BONN D	230	830503	830503	52775		64	
					BONN P H EVAL/CONTROL											
	LD	U	3			9	82	SPRING CR HAT	BONN NEW P H	233	830503	830503	53909		64	
					BONN P H EVAL/TEST 45'											
	RA	U	2			9	82	SPRING CR HAT	PRESCOTT ORE	115	830506	830509	52711		64	
					JONES BEACH SURVIVAL STUDY											
	RD	U	1			9	82	SPRING CR HAT	BLW BONN D	230	830502	830502	53158		63	
					BONN P H EVAL/CONTROL											
	RD	U	3			9	82	SPRING CR HAT	BONN NEW P H	233	830502	830502	51332		63	
					BONN P H EVAL/TEST 44'											
	LA	Y	1			5		MCNARY D	MCNARY TAIL	469	830501	830501	1949			
					MCNARY EFFICIENCY											
	LA	Y	3			5		MCNARY D	MCNARY TAIL	469	830504	830504	3005			
					MCNARY EFFICIENCY											
	LA	Y	3			6		MCNARY D	MCNARY TAIL	469	830503	830503	3005			
					MCNARY EFFICIENCY											
	LD	Y	1	UC		6		MCNARY D	MCNARY TAIL	469	830524	830524	1999			
					MCNARY EFFICIENCY											
	LD	Y	3	UC		6		MCNARY D	MCNARY TAIL	469	830526	830526	843			
					MCNARY EFFICIENCY											
	RA	Y	1			5		MCNARY D	MCNARY TAIL	469	830423	830423	1494			
					MCNARY EFFICIENCY											
	RA	Y	3			5		MCNARY D	MCNARY TAIL	469	830428	830428	1587			
					MCNARY EFFICIENCY											
	RD	Y	1	UC		6		MCNARY D	MCNARY TAIL	469	830517	830517	2253			
					MCNARY EFFICIENCY											
	RD	Y	1	UC		5		MCNARY D	MCNARY TAIL	469	830518	830518	1514			
					MCNARY EFFICIENCY											
	RD	Y	1	UC		1		MCNARY D	MCNARY TAIL	469	830518	830518	275			
					MCNARY EFFICIENCY											

Report Date 84/01/12
Last Revision Date 184/01/12

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK PURPOSE OF RELEASE	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RD	Y	R	UC	MCNARY EFFICIENCY	6		MCNARY D	MCNARY TAIL	469	830520	830520	1725			
	RD	Y	R	UC	MCNARY EFFICIENCY	5		MCNARY D	MCNARY TAIL	469	830522	830522	1000			
050928					DENSITY 400 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22582		20	
050929					DENSITY 400 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22245		21	
050930					DENSITY 400 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	21945		20	
050931					DENSITY 400 GMP/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22467		20	
050932					DENISTY 600 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	23345		20	
050933					DENSITY 600 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	20818		20	
050934					DENSITY 200 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	23676		20	
050935					DENSITY 200 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22120		19	
050936					DENSITY 200 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22673		20	
050937					DENISTY 200 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22171		20	
050938					DENSITY 600 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22151		19	
050939					DENSITY 600 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	21911		19	
050940					DENSITY 600 GPM/PD	4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	20526		21	

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
050341						4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22995		19	
DENSITY 600 GPM/PD																
050342						4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	23330		19	
DENSITY 400 GPM/PD																
050343						4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	22791		19	
DENSITY 400 GPM/PD																
050344						4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	23198		19	
DENSITY 200 GPM/PD																
050345						4	81	WILLARD HAT	LIT WH SAL R@RM 5	268	830607	830607	23267		18	
DENSITY 200 GPM/PD																
050952						5	81	COWLITZ HAT	BIG WH REAR PD (RAPI4;050952)	273	821121	821121	40539		30	6803
*																
050953						5	81	COWLITZ HAT	BIG WH REAR PD (RAPI4;050953)	273	821121	821121	38681		30	6483
*																
051116						5	81	COWLITZ HAT	BIG WH REAR PD (RAPI4;051116)	273	821121	821121	45215		30	7488
*																
051133						4		EAGLE CR HAT	CLACKAMAS R	247	830504	830504	60473	153	15	
DENSITY FACTOR .45																
051134						4		EAGLE CR HAT	CLACKAMAS R	247	830504	830504	62833	152	15	
DENSITY FACTOR .45																
051135						4		EAGLE CR HAT	CLACKAMAS R	247	830504	830504	40946	153	14	
DENSITY FACTOR .30																
051136						4		EAGLE CR HAT	CLACKAMAS R	247	830504	830504	39274	155	14	
DENSITY FACTOR .30																
051137						4	81	EAGLE CR HAT	CLACKAMAS R	247	830504	830504	20948	156	13	
DENSITY FACTOR .15																
051138						4		EAGLE CR HAT	CLACKAMAS R	247	830504	830504	20266	157	13	
DENSITY FACTOR .15																
051139						9	82	LIT WH SAL HAT	LIT WH SAL R@RM 2	261	830624	830624	46067		44	84994
SUBYEAR REL SP CHINOOK																

RELEASE DATA 1983

MAG TAG MULT	LOC	DR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
051141						9	82	LIT WH SAL HAT	LIT WH SAL R@RM 2	261	830504	830504	48145		7	378162
SUBYEAR REL SP CHINOOK																
051142						9	82	SPRING CR HAT	SPRING CR HAT	269	830428	830428	49749		54	
SALT DIET CONTROL																
051143						9	82	SPRING CR HAT	SPRING CR HAT	269	830428	830428	51266		55	
SALT DIET CONTROL																
051144						9	82	SPRING CR HAT	SPRING CR HAT	269	830428	830428	51736		55	
7% SALT DIET																
051145						9	82	SPRING CR HAT	SPRING CR HAT	269	830428	830428	52282		55	
7% SALT DIET																
051333				AD		6	82	HAGERMAN HAT	UPPER SALMON R	1446	830418	830420	58949		2	
* A STOCK-LARGE									(RD121)							
051334				AD		6	82	HAGERMAN HAT	UPPER SALMON R	1446	830418	830420	59518		5	
* A STOCK-SMALL									(RD123)							
051338				AD		5	81	LEAVENWORTH	NACHES R@NILE SP	773	830420	830420	94198			
* YAKIMA INDIANS									(LA3X1)							
051339				AD		5	81	LEAVENWORTH	YAKIMA R@ELLENSBURG	776	830418	830422	94539			
* YAKIMA INDIANS									(LA7H1)							
051349				AD		6	82	DWORSHAK HAT	N FK CLEARWATER	809	830518	830518	24575		6	
PROGENY STUDY-1 SALT																
051350				AD		6	82	DWORSHAK HAT	N FK CLEARWATER	809	830518	830518	30000		5	
PROGENY STUDY-2 SALT																
051351				AD		6	82	DWORSHAK HAT	N FK CLEARWATER	809	830518	830518	29825		6	
PROGENY STUDY-3 SALT																
051352				AD		6	82	DWORSHAK HAT	N FK CLEARWATER	809	830519	830519	32550		6	
PROGENY STUDY-CONTROL																
072328						9	82	STAYTON PD	VAR WILLAM R & TRI	164	830426	830519	28935		79	
CONTRIBUTION																
072369						5	81	BONNEVILLE HAT	TANNER CR	231	821101	821101	45919		11	
STOCK EVAL & TIMING																

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
072520						5	81	RND BUTTE HAT	DESCHUTES R@RM 100	489	821011	821011	26766		6	1772
					HATCHERY EVAL											
072521					AD	5	81	MCKENZIE HAT	MCKENZIE@LEABURG	492	821101	821101	32253		11	
					TIME OF RELEASE											
072522						5	81	MCKENZIE HAT	MCKENZIE@LEABURG	492	830314	830314	32072	173	6	
					TIMING & SIZE											
072546						5	81	BONNEVILLE HAT	TANNER CR	231	821101	821101	51583		12	
					TULE STOCK & TIMING											
072547						5	81	BONNEVILLE HAT	TANNER CR	231	830323	830323	49918		6	
072548						5	81	BONNEVILLE HAT	TANNER CR	231	821101	821101	50737		12	
					STOCK EVAL & TIMING											
072606						4	81	BONNEVILLE HAT	TANNER CR	231	830502	830502	26932		15	
					PRODUCTION											
072607						4	81	BONNEVILLE HAT	TANNER CR	231	830531	830531	27264		16	
					PRODUCTION											
072701						5	81	BONNEVILLE HAT	TANNER CR	231	830308	830308	37492		7	
					TIME,SIZE,STOCK ASSESSMENT											
072714						5	81	RND BUTTE HAT	DESCHUTES R@RM 100	489	830321	830321	57940		9	
					YEARLING REL											
072715						5	81	RND BUTTE HAT	DESCHUTES R@RM 100	489	821011	821011	56178		24	2940
					HATCHERY EVAL											
072716						5	81	RND BUTTE HAT	DESCHUTES R@RM 100	489	830303	830506	48495		12	
					HATCHERY EVAL											
072717						5	81	RND BUTTE HAT	DESCHUTES R@RM 100	489	830303	830506	24851		12	
					HATCHERY EVAL											
072718						5	81	MCKENZIE HAT	MCKENZIE@LEABURG	492	830314	830314	36165	210	4	
					LARGE SIZE SPRING REL											
072719						5		MCKENZIE HAT	MCKENZIE@LEABURG	492	821108	821118	31972		7	
					LARGE SIZE FALL REL											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
072720						5	81	MCKENZIE HAT	MCKENZIE@LEABURG	492	830314	830314	30049	156	10	
MEDIUM SIZE SPRING REL																
072721						5		MCKENZIE HAT	MCKENZIE@LEABURG	492	821108	821108	32253		16	
MEDIUM SIZE FALL REL																
072722						5	81	MCKENZIE HAT	MCKENZIE@LEABURG	492	830314	830314	32072	173	6	
ERTHRAMYCIN FEEDING																
072724						5	81	MCKENZIE HAT	MCKENZIE@LEABURG	492	830314	830314	29070	169	7	
ERTHRAMYCIN FEEDING																
072727						9	82	BONNEVILLE HAT	TANNER CR	231	830504	830504	49999		72	
OMP 4 SAL MEAL																
072728						9	82	BONNEVILLE HAT	TANNER CR	231	830504	830504	50779		68	
OMP 4 SAL MEAL																
072729						9	82	BONNEVILLE HAT	TANNER CR	231	830504	830504	52615		74	
OMP 2 CONTROL																
072730						9	82	BONNEVILLE HAT	TANNER CR	231	830504	830504	47369		73	
OMP 2 CONTROL																
072731						4	81	SANDY HAT	SANDY R	235	830429	830429	54722		17	
OP 2 CONTROL																
072732						4	81	SANDY HAT	SANDY R	235	830429	830429	54876		17	
VACUUM DRY SALMON MEAL																
072733						4	81	SANDY HAT	SANDY R	235	830429	830429	54059		16	
ABERNATHY DIET																
072734						4	81	SANDY HAT	SANDY R	235	830429	830429	54747		17	
ABERNATHY DIET																
072735						4	81	SANDY HAT	SANDY R	235	830429	830429	54576		17	
VACUUM DRY SALMON MEAL																
072736						4	81	SANDY HAT	SANDY R	235	830429	830429	54857		17	
OP2 CONTROL																
072741						5	81	BONNEVILLE HAT	UMATILLA R@RM 2	467	830324	830418	99570		6	
UPRIVER BRIGHTS																

RELLASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	PURPOSE OF RELEASE								REMARKS							
072747						4	81	CASCADE HAT	TANNER CR	231	830524	830524	43126		18	
	OCEAN CONTROL															
072826						9	82	BONNEVILLE HAT	VERNITA BRID	629	830602	830602	100244		100	
	UPRIVER BRIGHT TRANSPORT															
072827						9	82	BONNEVILLE HAT	TANNER CR	231	830616	830616	100259		80	
	UPRIVER BRIGHT CONTROL															
072828						9	82	BONNEVILLE HAT	TANNER CR	231	830801	830801	99001		44	
	UPRIVER BRIGHT LATE REL															
072830						9	82	STAYTON PD	VAR WILLAM R & TRI	164	830426	830519	24006		79	
	CONTRIBUTION															
072831						9	82	STAYTON PD	VAR WILLAM R & TRI	164	830426	830519	26023		79	
	CONTRIBUTION															
072832						9	82	STAYTON PD	VAR WILLAM R & TRI	164	830426	830519	26176		79	
	CONTRIBUTION															
072833						9	82	STAYTON PD	VAR WILLAM R & TRI	164	830426	830519	24763		79	
	CONTRIBUTION															
072834						9	82	STAYTON PD	VAR WILLAM R & TRI	164	830426	830519	26800		79	
	CONTRIBUTION															
072836						9	82	RND BUTTE HAT	DESCHUTES R@RM 100	489	830524	830524	25920		19	
	O AGE DATE															
072837						9	82	RND BUTTE HAT	DESCHUTES R@RM 100	489	831006	831006	28200		6	
	FAST INCUBATION															
072843						9	82	RND BUTTE HAT	DESCHUTES R@RM 100	489	831005	831005	53550		14	
	SLOW INCUBATION															
101320					AD	9	82	EAGLE CR HAT	CLACKAMAS R	247	831017	831017	36393		9	31996
	U OF I-STRESS TEST															
101321						9	82	EAGLE CR HAT	CLACKAMAS R	247	831017	831017	36585		8	
	CONTROL															
101322						9	82	EAGLE CR HAT	CLACKAMAS R	247	831017	831017	35798		8	
	CONTROL															

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
101323						9	82	EAGLE CR HAT	CLACKAMAS R	247	831017	831017	38543		9	
					CONTROL											
102318					AD	5	81	RAPID R HAT	HELLS CANYON D	912	830318	830318	82588		27	
*					OFF SITE RELEASE EVAL				(RD121)							
102408					AD	5	81	SAWTOOTH HAT	UPPER SALMON R	1446	830329	830329	35075		29	
					HATCHERY EVAL				(COMBINED W/102535)							
102450						6	80	NIAGARA SPRINGS	PAHSIMEROI R	1311	820409	820409	40500		3	
					VIBRIO VACC CONTROL											
102458					AD	5	81	MCCALL HAT	S FK SALMON R	1153	830404	830407	84853		20	
*					HATCHERY EVAL				(RDT1)							
102460					AD	6	82	HAGERMAN HAT	E FK SALMON R	1378	830412	830413	57408		4	
*					B STOCK				(LD121).							
102515					AD	9	82	HAGERMAN HAT	CLEAR CR	868	830614	830614	54309		25	
*					AGE O-BKD STUDY				(LDT1)							
102535					AD	5	81	SAWTOOTH HAT	UPPER SALMON R	1446	830329	830329	77999		29	
*					HATCHERY EVAL				(RDT2)							
102717					AD	5	81	RAPID R HAT	HELLS CANYON D	912	830318	830318	84187		27	
*					OFF SITE RELEASE EVAL				(RDT3)							
231616	LA	W	2			6		DWORSHAK HAT	N FK CLEARWATER	809	830503	830503	32236		5	8128
*					HOMING				(LAW2;231616)							
231617	RA	F	2			6		DWORSHAK HAT	BLW BONN D	230	830506	830506	32465		6	2242
*					HOMING				(RAF2;231617)							
231618	LA	W	3			6		DWORSHAK HAT	BLW BONN D	230	830527	830527	31906		6	2703
*					HOMING				(LAW3;231618)							
231619	RA	F	3			6		DWORSHAK HAT	N FK CLEARWATER	809	830503	830503	31956		6	1378
*					HOMING				(RAF3;231619)							
231620	RA	F	4			6		DWORSHAK HAT	N FK CLEARWATER	809	830525	830525	30751		6	219
*					HOMING				(RAF4;231620)							
231621						5		LO GRANITE D	BLW BONN D	230	830421	830427	24792			
*									(RAF1,2)							

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK PURPOSE OF RELEASE	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
231622 *						5		LO GRANITE D	BLW BONN D (RAF3,4)	230	830429	830525	19848			
231623 *					AD JOHN DAY POOL EVAL	9		MCNARY D	MCNARY TAIL (LA7T1,3;LD7T1)	469	830616	830630	11675			
231624 *					AD JOHN DAY POOL EVAL	9		MCNARY D	MCNARY TAIL (LA7S1,3;LD7S1,3)	469	830812	830902	17292			
231625 *	RA	IJ	1		AD MCNARY TRANS EVAL - TRUCK	9		MCNARY D	BONN TAIL (231625;RAIJ1)	232	830707	830714	15097			
231626 *	RA	3	1		AD MCNARY TRANS EVAL - BARGE	9		MCNARY D	BONN TAIL (231626;RA31)	232	830710	830715	15040			
231627 *					AD MCNARY TRANS EVAL	9		MCNARY D	MCNARY TAIL (LA2L1,3;LD2L1)	469	830708	830715	15010			
231628 *	RA	IJ	3		AD MCNARY TRANS EVAL - TRUCK	9		MCNARY D	BONN TAIL (231628;RAIJ3)	232	830719	830725	13973			
231629 *	RA	3	3		AD MCNARY TRANS EVAL - BARGE	9		MCNARY D	BONN TAIL (231629;RA33)	232	830718	830726	15230			
231630 *					AD MCNARY TRANS EVAL	9		MCNARY D	MCNARY TAIL (LA2T1,3;LD2T1)	469	830720	830727	14690			
231631 *	RA	IJ	2		AD MCNARY TRANS EVAL - TRUCK	9		MCNARY D	BONN TAIL (231631;RAIJ2)	232	830730	830802	6210			
231632 *	RA	3	2		AD MCNARY TRANS EVAL - BARGE	9		MCNARY D	BONN TAIL (231632;RA32)	232	830728	830801	8590			
231633 *					AD MCNARY TRANS EVAL	9		MCNARY D	MCNARY TAIL (LA2X1,3)	469	830729	830805	10601			
231638 *	LA	W	1		HOMING	6		DWORSHAK HAT	N FK CLEARWATER (LAW1;231638)	809	830420	830420	33178	7	113	
231639 *	RA	Z	1		HOMING	6		DWORSHAK HAT	BLW BONN D (RAZ1;231639)	230	830423	830423	28658	6	133	
231640 *	RA	F	1		HOMING	6		DWORSHAK HAT	BLW BONN D (RAF1;231640)	230	830423	830423	30341	6	165	

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK PURPOSE OF RELEASE	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
621560 *	RA	52	1	AD	PUD TRANSPORT/TEST	6	82	WELLS SPAW CH	BLW PR RAPID D (RA521;621560)	638	830419	830427	22355		5	
621561 *	RA	17	1	AD	PUD TRANSPORT/CONTROL	6	82	WELLS SPAW CH	METHOW R@RM 31 (RA171;621561)	888	830419	830427	19939		5	
621636					SKAMANIA STK EARLY RETURNS	6	81	TURTLE ROCK PD	VAR WENATCHEE R LOC	795	830407	830511	14000		7	
632238					DELAYED REL-NOV	9	82	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	831102	831102	100264		22	7913
632239					DELAYED REL-OCT	9	82	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	831011	831011	100572		23	17404
632259					DELAYED REL-SEPT	9	82	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830831	830831	101206		28	28621
632450					LATE REL PROD	5	82	COWLITZ HAT	COWLITZ R@RM 50	189	820901	820901	8337		28	151700
632460					PRODUCTION	5	82	KALAMA FALLS HAT	KALAMA R@RM 15	141	820610	820702	163224		130	3375800
632462					PRODUCTION	5	82	COWLITZ HAT	COWLITZ R@RM 50	189	820624	820708	199176		90	5507000
632503					INDEX	9	82	COWLITZ HAT	COWLITZ R@RM 50	189	830606	830625	150236		72	4719310
632505					ADULT ARRIVAL TIMING-LATE	5	81	COWLITZ HAT	COWLITZ R@RM 50	189	830404	830404	73000		6	
632506					ADULT ARRIVAL TIMING-EARLY	5	81	COWLITZ HAT	COWLITZ R@RM 50	189	830404	830404	77454		7	
632603					LATE REL PROD	5	82	COWLITZ HAT	COWLITZ R@RM 50	189	820901	820901	51219		31	796600
632605					POND LOADING	4	81	LO KALAMA HAT	KALAMA R@RM 6	127	830504	830504	52002		17	484113
632609					ADULT ARRIVAL TIMING-MID-LATE	5	81	COWLITZ HAT	COWLITZ R@RM 50	189	830404	830404	58292		6	

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
632610						9	82	COWLITZ HAT	COWLITZ R@RM 50	189	831102	831102	146355		20	814415
					INDEX-DELAYED REL											
632611						9	82	PR RAPID SPAW CH	PR RAPID SPAW CH	639	830524	830524	204141		84	1835037
					INDEX-PROD											
632612						9	82	PR RAPID SPAW CH	PR RAPID SPAW CH	639	830621	830621	202388		63	
					INDEX-"WILD"											
632613						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10893		17	115309
					POND LOADING											
632614						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10358		17	109646
					POND LOADING											
632615						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10446		17	110577
					POND LOADING											
632616						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10673		17	112980
					POND LOADING											
632617						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10014		17	106004
					POND LOADING											
632618						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10048		17	94928
					POND LOADING											
632619						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10237		17	96714
					POND LOADING											
632620						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10084		17	95268
					POND LOADING											
632621						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10315		17	97451
					POND LOADING											
632622						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10495		17	99151
					POND LOADING											
632623						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10554		17	81144
					POND LOADING											
632624						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10157		17	78090
					POND LOADING											

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	PURPOSE OF RELEASE															
632625						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10278		17	79021
	POND LOADING															
632626						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10582		17	81358
	POND LOADING															
632627						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10432		17	80206
	POND LOADING															
632628						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10204		20	72732
	POND LOADING															
632629						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10343		20	73723
	POND LOADING															
632630						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10376		20	73959
	POND LOADING															
632631						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10249		20	73055
	POND LOADING															
632632						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10577		20	75392
	POND LOADING															
632633						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10489		20	60300
	POND LOADING															
632634						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10094		20	58029
	POND LOADING															
632635						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10556		20	60686
	POND LOADING															
632636						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10394		20	59754
	POND LOADING															
632637						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10530		20	60536
	POND LOADING															
632638						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10523		17	79261
	POND LOADING															
632639						4	81	COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10145		17	76414
	POND LOADING															

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE										
632640						4	81 COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10214		17	76934
					POND LOADING										
632641						4	81 COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10728		17	80806
					POND LOADING										
632642						4	81 COWLITZ HAT	COWLITZ R@RM 50	189	830503	830503	10012		17	75480
					POND LOADING										
632645						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830415	830430	50852		18	855141
					OCEAN MGT										
632651						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	7954		19	
					POND LOADING										
632652						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	7948		19	
					POND LOADING										
632653						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	7930		19	
					POND LOADING										
632654						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	7980		19	
					POND LOADING										
632655						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	7859		19	
					POND LOADING										
632656						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9357		19	
					POND LOADING										
632657						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9745		19	
					POND LOADING										
632658						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9900		19	
					POND LOADING										
632659						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9777		19	
					POND LOADING										
632660						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9743		19	
					POND LOADING										
632661						4	81 WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9856		19	1621
					POND LOADING										

Report Date 84/01/12
Last Revision Date :84/01/12

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
632662						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9907		19	1629
POND LOADING																
632663						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9866		19	1623
POND LOADING																
632701						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	9673		19	1591
POND LOADING																
632702						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10041		19	1652
POND LOADING																
632703						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10089		19	3876
POND LOADING																
632704						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10385		19	3931
POND LOADING																
632705						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10131		19	3894
POND LOADING																
632706						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10572		19	4063
POND LOADING																
632707						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10052		19	3863
POND LOADING																
632708						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10436		19	6176
POND LOADING																
632709						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10299		19	6095
POND LOADING																
632710						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10407		19	6159
POND LOADING																
632711						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10352		19	6127
POND LOADING																
632712						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10476		19	6200
POND LOADING																
632713						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10049		19	9362
POND LOADING																

RELEASE DATA 1983

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
PURPOSE OF RELEASE																
632714						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10874		19	10130
POND LOADING																
632715						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10323		19	9617
POND LOADING																
632716						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10346		19	9638
POND LOADING																
632717						4	81	WASHOUGAL HAT	WASHOUGAL R@RM 15	221	830527	830527	10644		19	9916
POND LOADING																
632735						4	81	SPEELYAI	CONF E FK LEWIS	146	830620	830620	50985		20	64000
OCEAN MGT																
632737						9	82	LEWIS R	LEWIS R	163	830606	830611	48635	49		2026
WILD STK-SEINED,TAGGED,&REL																
632738						9	82	LEWIS R	LEWIS R	163	830606	830611	48480	59		2019
WILD STK-SEINED,TAGGED,&REL																
632838	LA	S	1			6	82	LYONS FERRY HAT	LYONS FERRY	600	830501	830520	54594		4	
* BROOD STK SELECTION									(LAS1;632838)							
632839	RA	S	1			6	82	LYONS FERRY HAT	WALLOWA HAT	940	830509	830513	33006		5	
* BROOD STK SELECTION									(RAS1;632839)							
632840	RA	S	2			6	82	LYONS FERRY HAT	WALLOWA HAT	940	830509	830513	32045		5	
* BROOD STK SELECTION									(RAS2;632840)							

THIS REPORT WAS PRODUCED TO SHOW, FOR A USER SPECIFIED TIME PERIOD, THE AVERAGE WATER FLOWS ASSOCIATED WITH A PARTICULAR DAMSITE, AND SEVERAL RATIOS OF THESE FLOWS. THE SPECIFIED TIME PERIOD USED FOR THIS REPORT IS INDICATED BY ASTERISKS BENEATH ALL INCLUDED HOURS. THE DATE COLUMN HAS THE DATE OF THE LAST HOUR FOR THE SPECIFIED TIME PERIOD. FLOWS ARE MEASURED IN KILO CUBIC FEET PER SECOND (KCFS).

SPECIFIED TIME PERIOD

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(FIRST DAY)    1 1 1 1 1 1 1 1 1 1 2 2 2 2 2    (SECOND DAY)   1 1 1 1 1 1 1 1 1 1 2 2 2 2 2
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
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RIVER FLOW DATA AT THE LOWER GRANITE DAM SITE

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 1 1	15.8	15.4	0.0	0.4	0.9757	1.0000	0.0000	0.0243	HOURLY RECORD MISSING
83 1 2	19.6	19.5	0.0	0.1	0.9949	1.0000	0.0000	0.0051	
83 1 3	19.0	18.5	0.0	0.5	0.9749	1.0000	0.0000	0.0251	
83 1 4	24.3	23.8	0.0	0.5	0.9803	1.0000	0.0000	0.0197	
83 1 5	23.8	23.7	0.0	0.1	0.9958	1.0000	0.0000	0.0042	
83 1 6	37.0	36.9	0.0	0.1	0.9973	1.0000	0.0000	0.0027	
83 1 7	41.9	41.8	0.0	0.1	0.9976	1.0000	0.0000	0.0024	
83 1 8	62.3	62.0	0.0	0.3	0.9954	1.0000	0.0000	0.0046	
83 1 9	66.2	66.1	0.0	0.1	0.9985	1.0000	0.0000	0.0015	
83 1 10	84.8	84.7	0.0	0.1	0.9988	1.0000	0.0000	0.0012	
83 1 11	45.6	45.3	0.0	0.3	0.9937	1.0000	0.0000	0.0063	
83 1 12	60.1	59.9	0.0	0.2	0.9969	1.0000	0.0000	0.0031	
83 1 13	46.1	45.9	0.0	0.2	0.9959	1.0000	0.0000	0.0041	
83 1 14	35.9	31.8	3.7	0.4	0.8867	0.8961	0.1028	0.0105	
83 1 15	22.1	21.9	0.0	0.2	0.9914	1.0000	0.0000	0.0086	
83 1 16	16.8	16.8	0.0	0.0	1.0000	1.0000	0.0000	0.0000	
83 1 17	29.1	28.9	0.0	0.2	0.9935	1.0000	0.0000	0.0065	
83 1 18	27.5	27.4	0.0	0.2	0.9931	1.0000	0.0000	0.0069	
83 1 19	27.7	27.5	0.0	0.2	0.9932	1.0000	0.0000	0.0068	
83 1 20	19.9	19.9	0.0	0.0	1.0000	1.0000	0.0000	0.0000	
83 1 21	23.2	22.8	0.0	0.4	0.9837	1.0000	0.0000	0.0163	
83 1 22	31.6	31.4	0.0	0.2	0.9940	1.0000	0.0000	0.0060	
83 1 23	19.8	19.6	0.0	0.2	0.9905	1.0000	0.0000	0.0095	
83 1 24	21.3	21.3	0.0	0.0	1.0000	1.0000	0.0000	0.0000	
83 1 25	22.6	22.6	0.0	0.0	1.0000	1.0000	0.0000	0.0000	
83 1 26	17.7	17.5	0.0	0.2	0.9893	1.0000	0.0000	0.0107	
83 1 27	24.9	24.5	0.0	0.5	0.9808	1.0000	0.0000	0.0192	
83 1 28	20.6	20.3	0.0	0.3	0.9860	1.0000	0.0000	0.0140	
83 1 29	23.7	23.6	0.0	0.1	0.9958	1.0000	0.0000	0.0042	
83 1 30	22.0	21.9	0.0	0.1	0.9955	1.0000	0.0000	0.0045	
83 1 31	23.7	23.6	0.0	0.1	0.9958	1.0000	0.0000	0.0042	
83 2 1	20.0	19.7	0.0	0.3	0.9855	1.0000	0.0000	0.0145	
83 2 2	19.2	18.9	0.0	0.3	0.9850	1.0000	0.0000	0.0150	
83 2 3	21.5	21.2	0.0	0.3	0.9866	1.0000	0.0000	0.0134	
83 2 4	21.9	21.6	0.0	0.3	0.9868	1.0000	0.0000	0.0132	
83 2 5	16.5	16.4	0.0	0.1	0.9940	1.0000	0.0000	0.0060	
83 2 6	16.4	16.3	0.0	0.1	0.9939	1.0000	0.0000	0.0061	
83 2 7	19.2	18.9	0.0	0.3	0.9349	1.0000	0.0000	0.0151	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 2 8	13.2	13.0	0.0	0.3	0.9782	1.0000	0.0000	0.0218	
83 2 9	18.9	18.8	0.0	0.1	0.9947	1.0000	0.0000	0.0053	
83 2 10	24.1	23.6	0.0	0.5	0.9802	1.0000	0.0000	0.0198	
83 2 11	14.4	14.3	0.0	0.1	0.9931	1.0000	0.0000	0.0069	
83 2 12	18.5	18.2	0.0	0.3	0.9843	1.0000	0.0000	0.0157	
83 2 13	17.3	17.2	0.0	0.1	0.9942	1.0000	0.0000	0.0058	
83 2 14	20.1	19.8	0.0	0.3	0.9856	1.0000	0.0000	0.0144	
83 2 15	23.1	22.6	0.0	0.5	0.9793	1.0000	0.0000	0.0207	
83 2 16	19.3	19.0	0.0	0.3	0.9851	1.0000	0.0000	0.0149	
83 2 17	23.8	23.3	0.0	0.5	0.9799	1.0000	0.0000	0.0201	
83 2 18	23.6	23.2	0.0	0.5	0.9798	1.0000	0.0000	0.0202	
83 2 19	73.4	73.1	0.0	0.3	0.9961	1.0000	0.0000	0.0039	
83 2 20	59.2	14.1	45.0	0.1	0.2385	0.2389	0.7598	0.0017	
83 2 21	84.3	4.3	79.9	0.1	0.0507	0.0508	0.9481	0.0012	
83 2 22	75.5	3.1	71.7	0.7	0.0415	0.0418	0.9497	0.0088	
83 2 23	79.9	1.2	78.3	0.3	0.0156	0.0156	0.9808	0.0036	
83 2 24	83.8	0.0	83.3	0.5	0.0000	0.0000	0.9943	0.0057	
83 2 25	80.0	0.0	79.8	0.1	0.0006	0.0006	0.9982	0.0013	
83 2 26	88.8	9.7	79.0	0.1	0.1087	0.1089	0.8901	0.0011	
83 2 27	94.8	0.0	94.5	0.3	0.0000	0.0000	0.9970	0.0030	
83 2 28	84.0	0.5	83.3	0.3	0.0056	0.0056	0.9910	0.0034	
83 3 1	78.4	4.7	73.6	0.1	0.0602	0.0603	0.9386	0.0011	
83 3 2	79.7	5.6	74.0	0.1	0.0704	0.0705	0.9284	0.0013	
83 3 3	74.2	5.9	68.2	0.1	0.0795	0.0796	0.9192	0.0013	
83 3 4	85.0	80.6	4.3	0.1	0.9481	0.9492	0.0507	0.0012	
83 3 5	90.1	66.0	24.0	0.1	0.7322	0.7330	0.2667	0.0011	
83 3 6	110.8	0.5	110.2	0.1	0.0044	0.0044	0.9947	0.0009	
83 3 7	93.0	84.5	8.4	0.1	0.9086	0.9096	0.0903	0.0011	
83 3 8	91.1	83.3	7.8	0.1	0.9136	0.9146	0.0853	0.0011	
83 3 9	99.4	80.6	18.7	0.1	0.8112	0.8121	0.1877	0.0010	
83 3 10	95.0	80.9	14.0	0.1	0.8516	0.8525	0.1473	0.0011	
83 3 11	115.6	65.9	49.6	0.1	0.5702	0.5707	0.4289	0.0009	
83 3 12	116.0	4.5	111.4	0.1	0.0388	0.0386	0.9603	0.0009	
83 3 13	121.2	2.9	118.2	0.1	0.0242	0.0242	0.9750	0.0008	
83 3 14	121.6	5.1	116.4	0.1	0.0418	0.0418	0.9574	0.0008	
83 3 15	124.2	4.8	119.3	0.1	0.0383	0.0383	0.9609	0.0008	
83 3 16	120.8	4.8	115.9	0.1	0.0397	0.0398	0.9594	0.0008	
83 3 17	120.3	3.9	116.3	0.1	0.0323	0.0323	0.9669	0.0008	
83 3 18	117.9	0.0	117.8	0.1	0.0003	0.0003	0.9989	0.0008	
83 3 19	120.0	0.1	119.8	0.1	0.0008	0.0008	0.9983	0.0008	
83 3 20	114.8	0.0	114.7	0.1	0.0000	0.0000	0.9991	0.0009	
83 3 21	108.5	3.9	104.5	0.1	0.0363	0.0363	0.9628	0.0009	
83 3 22	97.1	7.3	89.6	0.1	0.0757	0.0757	0.9233	0.0010	
83 3 23	106.5	10.5	95.9	0.1	0.0982	0.0983	0.9009	0.0009	
83 3 24	87.5	19.3	68.2	0.1	0.2200	0.2202	0.7789	0.0011	
83 3 25	70.8	13.7	57.0	0.1	0.1937	0.1940	0.8049	0.0014	
83 3 26	75.2	18.8	56.3	0.1	0.2497	0.2501	0.7489	0.0013	
83 3 27	87.4	43.3	43.7	0.5	0.4948	0.4975	0.4997	0.0055	
83 3 28	81.7	32.3	49.2	0.3	0.3948	0.3962	0.6016	0.0035	
83 3 29	80.9	35.5	44.6	0.9	0.4381	0.4428	0.5512	0.0107	
83 3 30	68.7	27.0	40.8	0.9	0.3937	0.3988	0.5937	0.0126	
83 3 31	84.6	33.5	50.4	0.7	0.3966	0.3998	0.5954	0.0080	
83 4 1	91.2	40.6	50.8	0.3	0.4429	0.4443	0.5539	0.0033	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 4 2	89.7	41.2	48.1	0.5	0.4590	0.4615	0.5356	0.0054	
83 4 3	85.8	36.8	48.7	0.3	0.4290	0.4305	0.5675	0.0035	
83 4 4	94.4	44.5	49.6	0.3	0.4714	0.4729	0.5254	0.0032	
83 4 5	83.8	33.7	49.6	0.5	0.4020	0.4044	0.5921	0.0058	
83 4 6	90.1	37.4	52.4	0.3	0.4151	0.4165	0.5816	0.0033	
83 4 7	85.8	54.9	30.6	0.3	0.6397	0.6419	0.3568	0.0035	
83 4 8	82.7	64.4	17.8	0.5	0.7788	0.7834	0.2153	0.0059	
83 4 9	67.3	67.3	0.0	0.5	0.9928	1.0000	0.0000	0.0072	
83 4 10	79.6	49.5	29.9	0.3	0.6210	0.6233	0.3753	0.0038	
83 4 11	74.3	51.4	22.7	0.3	0.6909	0.6937	0.3050	0.0040	
83 4 12	74.9	49.8	24.4	0.7	0.6650	0.6711	0.3259	0.0091	
83 4 13	77.7	46.5	30.9	0.3	0.5986	0.6009	0.3975	0.0039	
83 4 14	73.9	45.2	28.2	0.5	0.6118	0.6159	0.3816	0.0066	
83 4 15	55.9	32.0	23.4	0.5	0.5728	0.5778	0.4185	0.0088	
83 4 16	61.7	38.0	23.2	0.5	0.6164	0.6213	0.3757	0.0079	
83 4 17	59.2	37.2	21.7	0.3	0.6282	0.6314	0.3667	0.0051	
83 4 18	54.7	32.4	21.9	0.3	0.5935	0.5968	0.4010	0.0055	
83 4 19	54.5	43.4	9.7	1.4	0.7959	0.8166	0.1788	0.0253	
83 4 20	49.9	40.5	9.1	0.3	0.8118	0.8167	0.1822	0.0060	
83 4 21	52.0	45.2	5.9	0.9	0.8691	0.8838	0.1142	0.0167	
83 4 22	44.1	38.7	5.3	0.2	0.8764	0.8802	0.1193	0.0043	
83 4 23	69.2	56.0	12.7	0.5	0.8098	0.8156	0.1831	0.0071	
83 4 24	101.0	80.2	20.5	0.3	0.7939	0.7962	0.2032	0.0030	* HOURLY RECORD MISSING *
83 4 25	104.5	83.7	20.5	0.3	0.8010	0.8033	0.1961	0.0029	
83 4 26	110.2	86.4	23.5	0.3	0.7836	0.7858	0.2136	0.0027	
83 4 27	110.2	66.0	43.8	0.5	0.5983	0.6009	0.3973	0.0044	
83 4 28	104.4	62.2	41.7	0.5	0.5959	0.5987	0.3994	0.0047	
83 4 29	91.8	54.0	37.3	0.5	0.5883	0.5914	0.4064	0.0053	
83 4 30	104.7	61.8	42.4	0.5	0.5906	0.5934	0.4047	0.0047	
83 5 1	99.1	63.6	35.2	0.3	0.6419	0.6438	0.3551	0.0030	
83 5 2	101.9	66.5	34.9	0.5	0.6524	0.6556	0.3428	0.0048	
83 5 3	99.5	71.4	27.3	0.9	0.7170	0.7233	0.2743	0.0087	
83 5 4	104.1	77.5	26.3	0.3	0.7447	0.7469	0.2524	0.0029	
83 5 5	112.0	82.0	29.7	0.3	0.7322	0.7342	0.2651	0.0027	
83 5 6	117.7	77.2	38.8	1.8	0.6555	0.6655	0.3296	0.0149	
83 5 7	121.5	79.6	41.4	0.5	0.6553	0.6580	0.3407	0.0040	
83 5 8	120.6	83.7	36.4	0.5	0.6943	0.6972	0.3016	0.0041	
83 5 9	115.0	92.2	22.1	0.7	0.8020	0.8067	0.1921	0.0059	
83 5 10	116.6	100.1	16.0	0.5	0.8587	0.8623	0.1371	0.0042	
83 5 11	114.4	109.5	4.6	0.3	0.9569	0.9594	0.0405	0.0026	
83 5 12	107.2	106.3	0.0	0.9	0.9919	1.0000	0.0000	0.0081	
83 5 13	104.0	103.5	0.0	0.5	0.9953	1.0000	0.0000	0.0047	
83 5 14	96.9	96.6	0.0	0.3	0.9972	1.0000	0.0000	0.0028	
83 5 15	103.1	102.8	0.0	0.3	0.9971	1.0000	0.0000	0.0029	
83 5 16	89.5	89.0	0.0	0.5	0.9945	1.0000	0.0000	0.0055	
83 5 17	105.4	103.1	0.0	0.3	0.9972	1.0000	0.0000	0.0028	
83 5 18	100.3	100.0	0.0	0.3	0.9970	1.0000	0.0000	0.0030	
83 5 19	96.2	96.1	0.0	0.7	0.9930	1.0000	0.0000	0.0070	
83 5 20	100.1	99.4	0.0	0.7	0.9932	1.0000	0.0000	0.0068	
83 5 21	92.1	91.4	0.0	0.7	0.9926	1.0000	0.0000	0.0074	
83 5 22	97.2	96.9	0.0	0.3	0.9969	1.0000	0.0000	0.0031	
83 5 23	104.5	104.3	0.0	0.3	0.9971	1.0000	0.0000	0.0029	
83 5 24	114.9	114.2	0.0	0.7	0.9941	1.0000	0.0000	0.0059	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 5 25	126.0	125.7	0.0	0.3	0.9976	1.0000	0.0000	0.0024	
83 5 26	145.2	127.8	16.9	0.5	0.8805	0.8834	0.1162	0.0034	
83 5 27	161.1	128.2	32.3	0.7	0.7953	0.7987	0.2005	0.0042	
83 5 28	183.5	127.5	55.2	0.9	0.6948	0.6981	0.3005	0.0047	
83 5 29	190.3	124.2	65.6	0.5	0.6527	0.6544	0.3447	0.0026	
83 5 30	195.2	128.7	66.2	0.3	0.6594	0.6604	0.3391	0.0015	
83 5 31	195.7	126.9	68.5	0.3	0.6484	0.6494	0.3501	0.0015	
83 6 1	191.0	127.1	63.4	0.5	0.6655	0.6672	0.3320	0.0026	
83 6 2	180.2	127.6	52.3	0.3	0.7081	0.7092	0.2903	0.0017	
83 6 3	179.5	126.2	52.4	0.9	0.7032	0.7066	0.2920	0.0048	
83 6 4	165.7	123.7	41.3	0.7	0.7467	0.7497	0.2492	0.0041	
83 6 5	165.3	124.1	40.8	0.3	0.7512	0.7525	0.2470	0.0018	
83 6 6	160.4	124.4	35.7	0.3	0.7756	0.7771	0.2225	0.0019	
83 6 7	152.0	125.1	26.4	0.5	0.8234	0.8260	0.1734	0.0032	
83 6 8	160.8	124.6	35.9	0.3	0.7749	0.7763	0.2233	0.0019	
83 6 9	166.3	125.2	40.6	0.5	0.7528	0.7550	0.2442	0.0029	
83 6 10	161.5	124.1	36.7	0.7	0.7683	0.7716	0.2275	0.0042	
83 6 11	173.0	123.9	48.5	0.5	0.7165	0.7186	0.2806	0.0028	
83 6 12	165.0	123.5	41.2	0.3	0.7484	0.7498	0.2498	0.0018	
83 6 13	152.3	117.3	34.7	0.3	0.7700	0.7716	0.2280	0.0020	
83 6 14	144.5	119.8	24.2	0.5	0.8290	0.8319	0.1676	0.0034	
83 6 15	139.9	121.3	17.9	0.7	0.8673	0.8715	0.1278	0.0048	
83 6 16	133.9	120.0	13.4	0.5	0.8962	0.8995	0.1001	0.0037	
83 6 17	130.8	125.7	4.5	0.5	0.9615	0.9651	0.0348	0.0037	
83 6 18	121.7	121.2	0.0	0.5	0.9960	1.0000	0.0000	0.0040	
83 6 19	124.6	124.3	0.0	0.3	0.9976	1.0000	0.0000	0.0024	
83 6 20	124.9	124.6	0.0	0.3	0.9976	1.0000	0.0000	0.0024	
83 6 21	109.5	109.2	0.0	0.3	0.9973	1.0000	0.0000	0.0027	
83 6 22	102.8	102.5	0.0	0.3	0.9971	1.0000	0.0000	0.0029	
83 6 23	97.7	97.4	0.0	0.3	0.9969	1.0000	0.0000	0.0031	
83 6 24	94.5	94.0	0.0	0.5	0.9948	1.0000	0.0000	0.0052	
83 6 25	80.0	79.1	0.0	0.9	0.9892	1.0000	0.0000	0.0108	
83 6 26	83.6	83.3	0.0	0.3	0.9964	1.0000	0.0000	0.0036	
83 6 27	85.0	84.6	0.0	0.5	0.9943	1.0000	0.0000	0.0057	
83 6 28	93.0	92.1	0.0	0.9	0.9907	1.0000	0.0000	0.0093	
83 6 29	94.7	94.4	0.0	0.3	0.9968	1.0000	0.0000	0.0032	
83 6 30	96.2	95.8	0.0	0.5	0.9949	1.0000	0.0000	0.0051	
83 7 1	88.9	88.4	0.0	0.5	0.9945	1.0000	0.0000	0.0055	
83 7 2	88.5	87.8	0.0	0.7	0.9923	1.0000	0.0000	0.0077	
83 7 3	104.0	103.7	0.0	0.3	0.9971	1.0000	0.0000	0.0029	
83 7 4	105.7	105.4	0.0	0.3	0.9972	1.0000	0.0000	0.0028	
83 7 5	92.6	92.1	0.0	0.5	0.9947	1.0000	0.0000	0.0053	
83 7 6	87.9	87.5	0.0	0.5	0.9944	1.0000	0.0000	0.0056	
83 7 7	88.3	87.7	0.0	0.7	0.9923	1.0000	0.0000	0.0077	
83 7 8	93.3	93.5	0.0	0.3	0.9968	1.0000	0.0000	0.0032	
83 7 9	80.7	80.4	0.0	0.3	0.9963	1.0000	0.0000	0.0037	
83 7 10	77.4	76.9	0.0	0.5	0.9937	1.0000	0.0000	0.0063	
83 7 11	66.6	65.7	0.0	0.9	0.9863	1.0000	0.0000	0.0137	
83 7 12	83.8	83.5	0.0	0.3	0.9964	1.0000	0.0000	0.0036	
83 7 13	74.9	74.6	0.0	0.3	0.9960	1.0000	0.0000	0.0040	
83 7 14	71.0	70.7	0.0	0.3	0.9958	1.0000	0.0000	0.0042	
83 7 15	60.4	59.8	0.0	0.6	0.9893	1.0000	0.0000	0.0107	
83 7 16	49.7	49.2	0.0	0.5	0.9902	1.0000	0.0000	0.0098	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE TOTAL	TURBINE TUR+SPL	SPILL TOTAL	OTHER TOTAL	COMMENTS
83 7 17	58.4	58.1	0.0	0.3	0.9954	1.0000	0.0000	0.0046	
83 7 18	66.8	66.5	0.0	0.3	0.9955	1.0000	0.0000	0.0045	
83 7 19	53.2	52.5	0.0	0.7	0.9873	1.0000	0.0000	0.0127	
83 7 20	52.1	51.8	0.0	0.3	0.9942	1.0000	0.0000	0.0058	
83 7 21	43.9	43.2	0.0	0.7	0.9846	1.0000	0.0000	0.0154	
83 7 22	38.5	37.4	0.0	1.1	0.9726	1.0000	0.0000	0.0274	
83 7 23	42.3	41.8	0.0	0.5	0.9884	1.0000	0.0000	0.0116	
83 7 24	37.5	37.0	0.0	0.5	0.9870	1.0000	0.0000	0.0130	
83 7 25	30.0	29.5	0.0	0.5	0.9837	1.0000	0.0000	0.0163	
83 7 26	29.0	28.5	0.0	0.5	0.9832	1.0000	0.0000	0.0168	
83 7 27	25.8	25.1	0.0	0.7	0.9737	1.0000	0.0000	0.0263	
83 7 28	25.5	24.8	0.0	0.7	0.9734	1.0000	0.0000	0.0266	
83 7 29	30.4	29.9	0.0	0.5	0.9839	1.0000	0.0000	0.0161	
83 7 30	23.3	22.6	0.0	0.7	0.9709	1.0000	0.0000	0.0291	
83 7 31	21.1	20.6	0.0	0.5	0.9769	1.0000	0.0000	0.0231	
83 8 1	30.1	29.6	0.0	0.5	0.9838	1.0000	0.0000	0.0162	
83 8 2	16.4	16.1	0.0	0.3	0.9817	1.0000	0.0000	0.0183	
83 8 3	24.4	24.1	0.0	0.3	0.9877	1.0000	0.0000	0.0123	
83 8 4	21.2	20.9	0.0	0.3	0.9858	1.0000	0.0000	0.0142	
83 8 5	21.7	21.2	0.0	0.5	0.9775	1.0000	0.0000	0.0225	
83 8 6	18.0	17.5	0.0	0.5	0.9729	1.0000	0.0000	0.0271	
83 8 7	13.5	16.2	0.0	0.3	0.9838	1.0000	0.0000	0.0162	
83 8 8	16.9	16.3	0.0	0.7	0.9600	1.0000	0.0000	0.0400	
83 8 9	16.3	15.9	0.0	0.5	0.9701	1.0000	0.0000	0.0299	
83 8 10	23.5	23.2	0.0	0.3	0.9872	1.0000	0.0000	0.0128	
83 8 11	20.4	19.7	0.0	0.7	0.9667	1.0000	0.0000	0.0333	
83 8 12	18.2	17.7	0.0	0.5	0.9732	1.0000	0.0000	0.0268	
83 8 13	20.7	20.0	0.0	0.7	0.9673	1.0000	0.0000	0.0327	
83 8 14	18.3	17.8	0.0	0.5	0.9733	1.0000	0.0000	0.0267	
83 8 15	20.6	20.3	0.0	0.3	0.9854	1.0000	0.0000	0.0146	
83 8 16	17.4	16.8	0.0	0.7	0.9611	1.0000	0.0000	0.0389	
83 8 17	16.4	16.0	0.0	0.5	0.9703	1.0000	0.0000	0.0297	
83 8 18	19.3	18.8	0.0	0.5	0.9746	1.0000	0.0000	0.0254	
83 8 19	16.8	16.3	0.0	0.5	0.9710	1.0000	0.0000	0.0290	
83 8 20	24.2	23.5	0.0	0.7	0.9720	1.0000	0.0000	0.0280	
83 8 21	16.3	15.8	0.0	0.5	0.9699	1.0000	0.0000	0.0301	
83 8 22	16.3	16.0	0.0	0.3	0.9816	1.0000	0.0000	0.0184	
83 8 23	15.2	14.9	0.0	0.3	0.9810	1.0000	0.0000	0.0190	
83 8 24	24.1	23.8	0.0	0.3	0.9880	1.0000	0.0000	0.0120	
83 8 25	28.7	28.6	0.0	0.1	0.9965	1.0000	0.0000	0.0035	
83 8 26	43.3	42.8	0.0	0.5	0.9890	1.0000	0.0000	0.0110	
83 8 27	27.2	26.7	0.0	0.5	0.9824	1.0000	0.0000	0.0176	
83 8 28	43.6	43.5	0.0	0.1	0.9977	1.0000	0.0000	0.0023	
83 8 29	29.5	29.2	0.0	0.3	0.9902	1.0000	0.0000	0.0098	
83 8 30	31.2	30.9	0.0	0.3	0.9907	1.0000	0.0000	0.0093	
83 8 31	13.7	13.5	0.0	0.3	0.9790	1.0000	0.0000	0.0210	
83 9 1	24.5	24.1	0.0	0.5	0.9805	1.0000	0.0000	0.0195	
83 9 2	16.8	16.2	0.0	0.5	0.9713	1.0000	0.0000	0.0287	
83 9 3	22.2	21.9	0.0	0.3	0.9870	1.0000	0.0000	0.0130	
83 9 4	20.2	20.1	0.0	0.1	0.9950	1.0000	0.0000	0.0050	
83 9 5	14.3	14.2	0.0	0.1	0.9930	1.0000	0.0000	0.0070	
83 9 6	16.3	16.2	0.0	0.1	0.9945	1.0000	0.0000	0.0055	
83 9 7	15.9	15.4	0.0	0.5	0.9699	1.0000	0.0000	0.0301	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 9 8	23.2	22.7	0.0	0.5	0.9794	1.0000	0.0000	0.0206	
83 9 9	17.5	17.2	0.0	0.3	0.9835	1.0000	0.0000	0.0165	
83 9 10	19.9	19.5	0.0	0.5	0.9760	1.0000	0.0000	0.0240	
83 9 11	14.5	14.4	0.0	0.1	0.9931	1.0000	0.0000	0.0069	
83 9 12	18.4	18.1	0.0	0.3	0.9843	1.0000	0.0000	0.0157	
83 9 13	19.1	18.4	0.0	0.7	0.9651	1.0000	0.0000	0.0349	
83 9 14	17.8	17.5	0.0	0.3	0.9838	1.0000	0.0000	0.0162	
83 9 15	20.3	20.2	0.0	0.1	0.9951	1.0000	0.0000	0.0049	
83 9 16	19.2	18.8	0.0	0.5	0.9752	1.0000	0.0000	0.0248	
83 9 17	18.5	18.0	0.0	0.5	0.9742	1.0000	0.0000	0.0258	
83 9 18	16.3	16.0	0.0	0.3	0.9823	1.0000	0.0000	0.0177	
83 9 19	13.2	12.7	0.0	0.5	0.9637	1.0000	0.0000	0.0363	
83 9 20	21.7	21.2	0.0	0.5	0.9780	1.0000	0.0000	0.0220	
83 9 21	20.6	20.3	0.0	0.3	0.9860	1.0000	0.0000	0.0140	
83 9 22	19.8	19.3	0.0	0.5	0.9759	1.0000	0.0000	0.0241	
83 9 23	22.9	22.5	0.0	0.5	0.9792	1.0000	0.0000	0.0208	
83 9 24	19.6	19.3	0.0	0.3	0.9853	1.0000	0.0000	0.0147	
83 9 25	8.1	7.8	0.0	0.3	0.9641	1.0000	0.0000	0.0359	
83 9 26	20.8	20.5	0.0	0.3	0.9861	1.0000	0.0000	0.0139	
83 9 27	24.8	24.7	0.0	0.1	0.9960	1.0000	0.0000	0.0040	
83 9 28	19.2	18.9	0.0	0.3	0.9849	1.0000	0.0000	0.0151	
83 9 29	17.7	17.2	0.0	0.5	0.9730	1.0000	0.0000	0.0270	
83 9 30	16.8	16.3	0.0	0.5	0.9716	1.0000	0.0000	0.0284	
83 10 1	22.5	22.2	0.0	0.3	0.9871	1.0000	0.0000	0.0129	
83 10 2	14.1	13.9	0.0	0.3	0.9796	1.0000	0.0000	0.0204	
83 10 3	14.5	14.1	0.0	0.5	0.9672	1.0000	0.0000	0.0328	
83 10 4	15.0	14.5	0.0	0.5	0.9681	1.0000	0.0000	0.0319	
83 10 5	15.7	15.6	0.0	0.1	0.9936	1.0000	0.0000	0.0064	
83 10 6	14.7	14.6	0.0	0.1	0.9932	1.0000	0.0000	0.0068	
83 10 7	15.9	15.5	0.0	0.5	0.9700	1.0000	0.0000	0.0300	
83 10 8	11.8	11.1	0.0	0.7	0.9436	1.0000	0.0000	0.0564	
83 10 9	14.3	14.0	0.0	0.3	0.9798	1.0000	0.0000	0.0202	
83 10 10	15.3	15.0	0.0	0.3	0.9811	1.0000	0.0000	0.0189	
83 10 11	24.7	24.2	0.0	0.5	0.9807	1.0000	0.0000	0.0193	
83 10 12	26.9	26.6	0.0	0.3	0.9893	1.0000	0.0000	0.0107	
83 10 13	24.9	24.5	0.0	0.5	0.9808	1.0000	0.0000	0.0192	
83 10 14	23.9	23.6	0.0	0.3	0.9879	1.0000	0.0000	0.0121	
83 10 15	25.0	24.7	0.0	0.3	0.9884	1.0000	0.0000	0.0116	
83 10 16	20.8	20.7	0.0	0.1	0.9952	1.0000	0.0000	0.0048	
83 10 17	19.5	19.1	0.0	0.5	0.9756	1.0000	0.0000	0.0244	
83 10 18	25.0	24.3	0.0	0.7	0.9733	1.0000	0.0000	0.0267	
83 10 19	30.4	30.1	0.0	0.3	0.9905	1.0000	0.0000	0.0095	
83 10 20	26.2	26.1	0.0	0.1	0.9962	1.0000	0.0000	0.0038	
83 10 21	30.9	30.4	0.0	0.5	0.9845	1.0000	0.0000	0.0155	
83 10 22	32.4	32.1	0.0	0.3	0.9911	1.0000	0.0000	0.0089	
83 10 23	24.1	24.0	0.0	0.1	0.9958	1.0000	0.0000	0.0042	
83 10 24	21.0	20.7	0.0	0.3	0.9863	1.0000	0.0000	0.0137	
83 10 25	34.1	33.7	0.0	0.5	0.9860	1.0000	0.0000	0.0140	
83 10 26	32.0	31.6	0.0	0.5	0.9851	1.0000	0.0000	0.0149	
83 10 27	24.0	23.7	0.0	0.3	0.9880	1.0000	0.0000	0.0120	
83 10 28	27.5	27.0	0.0	0.5	0.9826	1.0000	0.0000	0.0174	
83 10 29	33.7	33.6	0.0	0.1	0.9970	1.0000	0.0000	0.0030	
83 10 30	28.5	28.2	0.0	0.3	0.9899	1.0000	0.0000	0.0101	

THIS REPORT WAS PRODUCED TO SHOW, FOR A USER SPECIFIED TIME PERIOD, THE AVERAGE WATER FLOWS ASSOCIATED WITH A PARTICULAR DAMSITE, AND SEVERAL RATIOS OF THESE FLOWS. THE SPECIFIED TIME PERIOD USED FOR THIS REPORT IS INDICATED BY ASTERISKS BENEATH ALL INCLUDED HOURS. THE DATE COLUMN HAS THE DATE OF THE LAST HOUR FOR THE SPECIFIED TIME PERIOD. FLOWS ARE MEASURED IN KILO CUBIC FEET PER SECOND (KCFS).

SPECIFIED TIME PERIOD

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(FIRST DAY)    1 1 1 1 1 1 1 1 1 1 2 2 2 2 2    (SECOND DAY)   1 1 1 1 1 1 1 1 1 1 2 2 2 2 2
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
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RIVER FLOW DATA AT THE NARY DAM SITE

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 1 1	131.2	127.7	0.0	3.5	0.9737	1.0000	0.0000	0.0263	HOURLY RECORD MISSING
83 1 2	136.3	132.6	0.0	3.7	0.9729	1.0000	0.0000	0.0271	
83 1 3	143.0	139.8	0.0	3.2	0.9776	1.0000	0.0000	0.0224	
83 1 4	126.2	122.7	0.0	3.5	0.9720	1.0000	0.0000	0.0280	
83 1 5	139.3	135.6	0.0	3.7	0.9734	1.0000	0.0000	0.0266	
83 1 6	186.2	182.5	0.0	3.7	0.9801	1.0000	0.0000	0.0199	
83 1 7	131.5	128.0	0.0	3.5	0.9731	1.0000	0.0000	0.0269	
83 1 8	106.9	103.7	0.0	3.2	0.9701	1.0000	0.0000	0.0299	
83 1 9	150.3	146.9	0.0	3.4	0.9776	1.0000	0.0000	0.0224	
83 1 10	149.7	146.3	0.0	3.4	0.9775	1.0000	0.0000	0.0225	
83 1 11	169.0	165.6	0.0	3.4	0.9801	1.0000	0.0000	0.0199	
83 1 12	151.3	148.1	0.0	3.2	0.9789	1.0000	0.0000	0.0211	
83 1 13	225.9	68.5	154.0	3.4	0.3032	0.3077	0.6819	0.0149	
83 1 14	214.5	92.5	118.8	3.2	0.4314	0.4379	0.5537	0.0149	
83 1 15	211.7	162.0	46.5	3.2	0.7652	0.7769	0.2197	0.0151	
83 1 16	159.9	155.9	0.0	4.0	0.9748	1.0000	0.0000	0.0252	
83 1 17	154.0	150.8	0.0	3.2	0.9792	1.0000	0.0000	0.0208	
83 1 18	194.8	191.3	0.0	3.5	0.9820	1.0000	0.0000	0.0180	
83 1 19	208.7	205.2	0.0	3.5	0.9831	1.0000	0.0000	0.0169	
83 1 20	185.7	182.0	0.0	3.7	0.9801	1.0000	0.0000	0.0199	
83 1 21	152.3	148.9	0.0	3.4	0.9779	1.0000	0.0000	0.0221	
83 1 22	180.0	176.3	0.0	3.7	0.9794	1.0000	0.0000	0.0206	
83 1 23	138.4	134.7	0.0	3.7	0.9733	1.0000	0.0000	0.0267	
83 1 24	168.0	164.5	0.0	3.5	0.9790	1.0000	0.0000	0.0210	
83 1 25	150.0	146.4	0.0	3.5	0.9764	1.0000	0.0000	0.0236	
83 1 26	190.5	186.8	0.0	3.7	0.9808	1.0000	0.0000	0.0192	
83 1 27	207.8	204.6	0.0	3.2	0.9847	1.0000	0.0000	0.0153	
83 1 28	155.5	152.4	0.0	3.2	0.9796	1.0000	0.0000	0.0204	
83 1 29	189.2	185.9	0.0	3.4	0.9822	1.0000	0.0000	0.0178	
83 1 30	148.6	145.3	0.0	3.4	0.9773	1.0000	0.0000	0.0227	
83 1 31	159.4	156.2	0.0	3.2	0.9799	1.0000	0.0000	0.0201	
83 2 1	160.4	157.4	0.0	3.0	0.9813	1.0000	0.0000	0.0187	
83 2 2	160.9	157.9	0.0	3.0	0.9811	1.0000	0.0000	0.0189	
83 2 3	206.0	202.8	0.0	3.2	0.9846	1.0000	0.0000	0.0154	
83 2 4	203.7	200.4	0.0	3.4	0.9835	1.0000	0.0000	0.0165	
83 2 5	207.6	197.2	7.2	3.2	0.9499	0.9648	0.0347	0.0154	
83 2 6	206.2	203.0	0.0	3.2	0.9845	1.0000	0.0000	0.0155	
83 2 7	209.6	206.4	0.0	3.2	0.9847	1.0000	0.0000	0.0153	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 2 8	225.2	221.8	0.0	3.4	0.9850	1.0000	0.0000	0.0150	
83 2 9	182.3	179.1	0.0	3.2	0.9824	1.0000	0.0000	0.0176	
83 2 10	149.9	146.5	0.0	3.4	0.9775	1.0000	0.0000	0.0225	
83 2 11	166.8	163.4	0.0	3.4	0.9798	1.0000	0.0000	0.0202	
83 2 12	161.4	158.0	0.0	3.4	0.9791	1.0000	0.0000	0.0209	
83 2 13	146.3	142.9	0.0	3.4	0.9770	1.0000	0.0000	0.0230	
83 2 14	160.6	157.3	0.0	3.4	0.9790	1.0000	0.0000	0.0210	
83 2 15	123.0	119.6	0.0	3.4	0.9726	1.0000	0.0000	0.0274	
83 2 16	187.8	184.6	0.0	3.2	0.9830	1.0000	0.0000	0.0170	
83 2 17	141.9	138.5	0.0	3.4	0.9763	1.0000	0.0000	0.0237	
83 2 18	128.8	125.6	0.0	3.2	0.9752	1.0000	0.0000	0.0248	
83 2 19	178.1	174.4	0.0	3.7	0.9792	1.0000	0.0000	0.0208	
83 2 20	201.4	57.1	140.7	3.6	0.2834	0.2886	0.6985	0.0180	
83 2 21	228.6	3.3	221.9	3.4	0.0146	0.0148	0.9706	0.0147	
83 2 22	253.0	0.0	249.8	3.2	0.0000	0.0000	0.9873	0.0127	
83 2 23	237.2	0.0	233.5	3.7	0.0000	0.0000	0.9844	0.0156	
83 2 24	299.0	0.3	295.5	3.2	0.0010	0.0010	0.9883	0.0107	
83 2 25	261.3	0.3	257.7	3.4	0.0010	0.0010	0.9861	0.0129	
83 2 26	281.7	36.8	241.5	3.4	0.1306	0.1322	0.8575	0.0120	
83 2 27	290.9	39.7	247.7	3.5	0.1366	0.1383	0.8513	0.0121	
83 2 28	321.9	48.4	270.0	3.5	0.1502	0.1519	0.8388	0.0110	
83 3 1	297.5	50.1	243.8	3.5	0.1685	0.1705	0.8196	0.0119	
83 3 2	325.5	58.6	263.4	3.4	0.1802	0.1821	0.8093	0.0105	
83 3 3	313.7	49.9	260.3	3.5	0.1590	0.1608	0.8298	0.0113	
83 3 4	283.7	44.6	235.9	3.2	0.1571	0.1588	0.8317	0.0113	
83 3 5	292.7	86.8	202.5	3.4	0.2966	0.3001	0.6919	0.0115	
83 3 6	335.1	73.8	257.7	3.5	0.2202	0.2225	0.7693	0.0105	
83 3 7	300.2	98.1	198.4	3.7	0.3267	0.3308	0.6610	0.0123	
83 3 8	278.4	88.9	185.8	3.7	0.3192	0.3235	0.6675	0.0133	
83 3 9	315.9	79.3	231.0	5.5	0.2511	0.2556	0.7314	0.0175	
83 3 10	287.9	79.0	204.1	4.9	0.2743	0.2790	0.7088	0.0169	
83 3 11	263.2	93.1	164.7	5.4	0.3537	0.3611	0.6259	0.0204	
83 3 12	323.1	63.7	254.7	4.7	0.1972	0.2001	0.7883	0.0145	
83 3 13	273.8	47.7	221.3	4.7	0.1744	0.1774	0.8084	0.0172	
83 3 14	250.8	47.9	198.3	4.7	0.1909	0.1945	0.7904	0.0187	
83 3 15	305.5	54.5	246.4	4.7	0.1782	0.1810	0.8064	0.0154	
83 3 16	387.7	64.9	318.1	4.7	0.1674	0.1695	0.8204	0.0121	
83 3 17	364.1	75.9	283.5	4.7	0.2085	0.2112	0.7786	0.0129	
83 3 18	361.2	48.7	307.8	4.7	0.1349	0.1366	0.8521	0.0130	
83 3 19	322.6	85.5	232.4	4.7	0.2651	0.2691	0.7203	0.0146	
83 3 20	321.1	40.0	276.4	4.7	0.1246	0.1264	0.8608	0.0146	
83 3 21	334.6	36.2	293.6	4.7	0.1083	0.1098	0.8776	0.0140	
83 3 22	373.5	33.5	335.2	4.7	0.0897	0.0909	0.8977	0.0126	
83 3 23	362.0	46.6	310.7	4.7	0.1285	0.1303	0.8584	0.0130	
83 3 24	299.1	81.6	211.6	5.9	0.2728	0.2783	0.7074	0.0198	
83 3 25	238.0	72.1	161.5	4.7	0.3027	0.3088	0.6775	0.0197	
83 3 26	303.2	104.2	195.3	3.7	0.3435	0.3478	0.6442	0.0122	
83 3 27	313.8	136.7	173.9	3.2	0.4355	0.4400	0.5543	0.0102	
83 3 28	324.6	123.7	197.0	3.9	0.3810	0.3856	0.6071	0.0119	
83 3 29	296.2	104.4	188.4	3.4	0.3524	0.3565	0.6362	0.0114	
83 3 30	306.4	102.5	201.5	2.5	0.3344	0.3372	0.6575	0.0081	
83 3 31	312.0	102.6	205.9	3.5	0.3288	0.3326	0.6599	0.0113	
83 4 1	287.9	72.0	212.5	3.3	0.2501	0.2530	0.7383	0.0116	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 4 2	309.7	121.0	185.3	3.4	0.3907	0.3950	0.5985	0.0109	
83 4 3	239.4	82.7	153.1	3.5	0.3455	0.3507	0.6397	0.0148	
83 4 4	253.2	94.4	155.6	3.2	0.3729	0.3777	0.6145	0.0126	
83 4 5	247.9	112.2	132.3	3.4	0.4527	0.4589	0.5337	0.0136	
83 4 6	231.1	143.0	84.4	3.7	0.6187	0.6288	0.3653	0.0160	
83 4 7	248.7	140.9	104.3	3.5	0.5664	0.5746	0.4194	0.0142	
83 4 8	201.6	198.4	0.0	3.2	0.9841	1.0000	0.0000	0.0159	
83 4 9	206.5	187.7	15.4	3.4	0.9093	0.9244	0.0744	0.0163	
83 4 10	206.3	188.5	14.4	3.4	0.9138	0.9290	0.0698	0.0163	
83 4 11	245.4	191.0	51.0	3.4	0.7785	0.7893	0.2078	0.0137	
83 4 12	224.1	184.7	36.1	3.4	0.8239	0.8365	0.1611	0.0150	
83 4 13	240.2	154.0	82.7	3.5	0.6411	0.6507	0.3442	0.0147	
83 4 14	238.7	160.4	75.0	3.4	0.6719	0.6815	0.3140	0.0141	
83 4 15	203.5	121.9	78.4	3.2	0.5990	0.6085	0.3853	0.0157	
83 4 16	251.1	173.4	74.4	3.4	0.6904	0.6997	0.2962	0.0134	
83 4 17	213.2	144.6	64.9	3.7	0.6782	0.6902	0.3045	0.0174	
83 4 18	193.2	142.5	47.5	3.2	0.7375	0.7499	0.2459	0.0166	
83 4 19	221.5	141.6	76.7	3.2	0.6391	0.6485	0.3464	0.0144	
83 4 20	218.3	137.1	77.5	3.7	0.6281	0.6390	0.3549	0.0169	
83 4 21	216.9	178.3	35.1	3.5	0.8217	0.8353	0.1620	0.0163	
83 4 22	171.2	160.1	7.7	3.4	0.9352	0.9540	0.0451	0.0197	
83 4 23	225.7	143.5	78.6	3.5	0.6360	0.6461	0.3483	0.0157	
83 4 24	242.5	65.9	172.8	3.8	0.2719	0.2762	0.7126	0.0155	* HOURLY RECORD MISSING *
83 4 25	281.2	65.2	212.6	3.4	0.2319	0.2347	0.7561	0.0120	
83 4 26	330.1	107.8	218.7	3.5	0.3266	0.3302	0.6627	0.0107	
83 4 27	290.9	69.1	218.1	3.7	0.2377	0.2407	0.7496	0.0127	
83 4 28	317.9	79.8	234.6	3.5	0.2509	0.2537	0.7380	0.0111	
83 4 29	299.8	151.5	145.0	3.2	0.5055	0.5109	0.4838	0.0107	
83 4 30	270.3	91.9	175.3	3.5	0.3393	0.3438	0.6476	0.0130	
83 5 1	268.4	81.9	182.8	3.7	0.3052	0.3095	0.6810	0.0138	
83 5 2	313.3	117.3	192.4	3.5	0.3745	0.3787	0.6143	0.0113	
83 5 3	285.3	108.7	173.3	3.2	0.3812	0.3855	0.6076	0.0112	
83 5 4	282.0	135.5	143.1	3.5	0.4803	0.4864	0.5072	0.0125	
83 5 5	315.3	107.6	203.9	3.5	0.3421	0.3459	0.6467	0.0112	
83 5 6	275.4	154.0	117.7	3.6	0.5593	0.5668	0.4275	0.0132	
83 5 7	301.0	130.2	167.5	3.4	0.4325	0.4374	0.5564	0.0112	
83 5 8	306.3	102.4	200.3	3.5	0.3343	0.3382	0.6541	0.0115	
83 5 9	282.8	106.8	172.6	3.4	0.3777	0.3823	0.6104	0.0119	
83 5 10	296.2	134.2	158.8	3.2	0.4531	0.4581	0.5361	0.0108	
83 5 11	337.5	92.2	241.8	3.5	0.2732	0.2761	0.7164	0.0105	
83 5 12	298.6	60.4	235.0	3.2	0.2023	0.2045	0.7870	0.0107	
83 5 13	293.7	142.2	148.2	3.4	0.4341	0.4897	0.5044	0.0115	
83 5 14	299.9	89.4	206.8	3.7	0.2980	0.3017	0.6896	0.0124	
83 5 15	265.5	104.6	157.2	3.6	0.3941	0.3995	0.5924	0.0135	
83 5 16	289.6	119.0	167.2	3.4	0.4109	0.4158	0.5775	0.0116	
83 5 17	269.7	191.5	74.8	3.4	0.7101	0.7191	0.2774	0.0125	
83 5 18	239.6	188.8	47.4	3.4	0.7881	0.7994	0.1978	0.0141	
83 5 19	228.2	166.3	58.9	3.0	0.7288	0.7386	0.2580	0.0132	
83 5 20	295.6	193.9	98.2	3.5	0.6560	0.6639	0.3320	0.0120	
83 5 21	276.1	197.1	75.6	3.4	0.7139	0.7227	0.2739	0.0122	
83 5 22	230.2	156.4	70.2	3.5	0.6797	0.6903	0.3050	0.0154	
83 5 23	252.7	125.5	124.0	3.2	0.4965	0.5029	0.4908	0.0127	
83 5 24	314.4	96.4	214.8	3.2	0.3067	0.3099	0.6832	0.0101	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 5 25	261.4	190.8	67.1	3.5	0.7298	0.7398	0.2567	0.0135	
83 5 26	357.0	132.8	221.1	3.2	0.3718	0.3752	0.6192	0.0090	
83 5 27	346.6	133.4	210.0	3.2	0.3848	0.3884	0.6059	0.0092	
83 5 28	404.9	200.9	200.4	3.6	0.4962	0.5006	0.4949	0.0089	
83 5 29	356.5	177.7	175.1	3.7	0.4984	0.5037	0.4912	0.0104	
83 5 30	409.9	194.9	211.6	3.4	0.4755	0.4794	0.5163	0.0082	
83 5 31	392.2	196.9	192.0	3.2	0.5022	0.5063	0.4897	0.0082	
83 6 1	383.7	200.1	179.6	3.9	0.5215	0.5269	0.4682	0.0103	
83 6 2	343.2	123.0	216.8	3.4	0.3583	0.3618	0.6319	0.0098	
83 6 3	381.7	141.4	236.9	3.4	0.3704	0.3737	0.6207	0.0088	
83 6 4	368.5	201.5	163.8	3.2	0.5467	0.5515	0.4446	0.0087	
83 6 5	365.6	201.3	160.8	3.5	0.5506	0.5560	0.4397	0.0097	
83 6 6	363.5	203.1	157.2	3.2	0.5587	0.5637	0.4324	0.0088	
83 6 7	319.0	199.3	116.5	3.3	0.6246	0.6311	0.3651	0.0103	
83 6 8	346.5	197.0	146.2	3.2	0.5686	0.5739	0.4221	0.0092	
83 6 9	357.7	199.4	154.6	3.7	0.5575	0.5633	0.4322	0.0103	
83 6 10	335.6	200.2	132.1	3.2	0.5967	0.6024	0.3938	0.0095	
83 6 11	329.0	200.8	125.0	3.2	0.6104	0.6164	0.3799	0.0097	
83 6 12	311.0	199.4	108.2	3.4	0.6413	0.6483	0.3479	0.0108	
83 6 13	290.6	197.3	90.1	3.2	0.6789	0.6865	0.3101	0.0110	
83 6 14	328.4	197.6	127.6	3.2	0.6017	0.6076	0.3886	0.0097	
83 6 15	288.9	199.3	86.1	3.5	0.6899	0.6984	0.2979	0.0122	
83 6 16	262.5	196.9	62.2	3.4	0.7502	0.7600	0.2370	0.0128	
83 6 17	276.7	198.4	74.9	3.4	0.7171	0.7259	0.2707	0.0122	
83 6 18	277.8	199.2	75.4	3.2	0.7170	0.7254	0.2714	0.0115	
83 6 19	224.1	197.2	23.2	3.7	0.8800	0.8948	0.1035	0.0165	
83 6 20	260.6	196.5	60.7	3.4	0.7542	0.7640	0.2329	0.0129	
83 6 21	246.9	189.8	54.0	3.2	0.7685	0.7786	0.2185	0.0130	
83 6 22	243.4	179.5	60.7	3.2	0.7374	0.7473	0.2494	0.0131	
83 6 23	240.2	226.6	10.0	3.5	0.9436	0.9577	0.0416	0.0147	
83 6 24	225.7	222.5	0.0	3.2	0.9858	1.0000	0.0000	0.0142	
83 6 25	194.2	191.0	0.0	3.2	0.9835	1.0000	0.0000	0.0165	
83 6 26	211.3	207.7	0.0	3.5	0.9833	1.0000	0.0000	0.0167	
83 6 27	176.5	173.1	0.0	3.4	0.9809	1.0000	0.0000	0.0191	
83 6 28	206.7	203.3	0.0	3.4	0.9837	1.0000	0.0000	0.0163	
83 6 29	205.5	202.0	0.0	3.5	0.9828	1.0000	0.0000	0.0172	
83 6 30	213.0	209.5	0.0	3.5	0.9834	1.0000	0.0000	0.0166	
83 7 1	174.2	170.8	0.0	3.4	0.9807	1.0000	0.0000	0.0193	
83 7 2	157.2	153.9	0.0	3.4	0.9786	1.0000	0.0000	0.0214	
83 7 3	165.6	162.1	0.0	3.5	0.9787	1.0000	0.0000	0.0213	
83 7 4	190.9	187.7	0.0	3.2	0.9832	1.0000	0.0000	0.0168	
83 7 5	171.2	167.9	0.0	3.4	0.9803	1.0000	0.0000	0.0197	
83 7 6	197.8	194.5	0.0	3.3	0.9830	0.9999	0.0001	0.0169	
83 7 7	231.5	228.3	0.0	3.2	0.9862	1.0000	0.0000	0.0138	
83 7 8	228.9	225.3	0.0	3.5	0.9845	1.0000	0.0000	0.0154	
83 7 9	206.4	203.1	0.0	3.4	0.9837	1.0000	0.0000	0.0163	
83 7 10	144.7	141.4	0.0	3.4	0.9767	1.0000	0.0000	0.0233	
83 7 11	153.7	149.8	0.0	3.9	0.9748	1.0000	0.0000	0.0252	
83 7 12	196.1	192.7	0.0	3.4	0.9828	1.0000	0.0000	0.0172	
83 7 13	205.4	201.9	0.0	3.5	0.9828	1.0000	0.0000	0.0172	
83 7 14	210.3	206.7	0.0	3.5	0.9832	1.0000	0.0000	0.0168	
83 7 15	163.2	160.0	0.0	3.2	0.9804	1.0000	0.0000	0.0196	
83 7 16	191.8	188.3	0.0	3.5	0.9816	1.0000	0.0000	0.0184	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
83 7 17	180.5	106.5	100.0	-25.9	0.5900	0.5159	0.5536	-.1436	
83 7 18	231.8	228.6	0.0	3.2	0.9862	1.0000	0.0000	0.0138	
83 7 19	228.4	221.7	3.3	3.4	0.9707	0.9852	0.0146	0.0147	
83 7 20	226.3	222.6	0.0	3.7	0.9837	1.0000	0.0000	0.0163	
83 7 21	232.3	228.9	0.0	3.4	0.9855	1.0000	0.0000	0.0145	
83 7 22	232.6	229.2	0.0	3.4	0.9855	1.0000	0.0000	0.0145	
83 7 23	195.6	192.4	0.0	3.2	0.9835	1.0000	0.0000	0.0164	
83 7 24	173.2	169.5	0.0	3.7	0.9786	1.0000	0.0000	0.0214	
83 7 25	154.7	151.2	0.0	3.5	0.9772	1.0000	0.0000	0.0228	
83 7 26	178.9	175.2	0.0	3.7	0.9793	1.0000	0.0000	0.0207	
83 7 27	221.1	217.6	0.0	3.5	0.9840	1.0000	0.0000	0.0160	
83 7 28	172.4	169.0	0.0	3.4	0.9805	1.0000	0.0000	0.0195	
83 7 29	214.6	211.4	0.0	3.2	0.9851	1.0000	0.0000	0.0149	
83 7 30	207.2	204.2	0.0	3.0	0.9854	1.0000	0.0000	0.0146	
83 7 31	224.3	221.2	0.0	3.5	0.9843	1.0000	0.0000	0.0157	
83 8 1	208.2	205.0	0.0	3.2	0.9846	1.0000	0.0000	0.0154	
83 8 2	210.5	206.9	0.0	3.5	0.9832	1.0000	0.0000	0.0168	
83 8 3	168.5	165.2	0.0	3.4	0.9800	1.0000	0.0000	0.0200	
83 8 4	168.0	164.3	0.0	3.7	0.9780	1.0000	0.0000	0.0220	
83 8 5	178.2	172.6	0.0	5.6	0.9686	1.0000	0.0000	0.0314	
83 8 6	189.6	186.2	0.0	3.4	0.9822	1.0000	0.0000	0.0178	
83 8 7	167.1	163.4	0.0	3.7	0.9779	1.0000	0.0000	0.0221	
83 8 8	162.8	159.6	0.0	3.2	0.9803	1.0000	0.0000	0.0197	
83 8 9	208.2	204.8	0.0	3.4	0.9838	1.0000	0.0000	0.0162	
83 8 10	146.3	142.5	0.0	3.8	0.9736	1.0000	0.0000	0.0264	
83 8 11	178.4	175.1	0.0	3.4	0.9811	1.0000	0.0000	0.0189	
83 8 12	146.9	143.3	0.0	3.5	0.9759	1.0000	0.0000	0.0241	
83 8 13	125.8	122.1	0.0	3.7	0.9706	1.0000	0.0000	0.0294	
83 8 14	123.4	119.6	0.0	3.9	0.9687	1.0000	0.0000	0.0313	
83 8 15	125.4	122.1	0.0	3.4	0.9732	1.0000	0.0000	0.0268	
83 8 16	102.8	99.3	0.0	3.5	0.9656	1.0000	0.0000	0.0344	
83 8 17	144.3	140.6	0.0	3.8	0.9740	1.0000	0.0000	0.0260	
83 8 18	154.1	150.4	0.0	3.7	0.9760	1.0000	0.0000	0.0240	
83 8 19	137.6	134.4	0.0	3.2	0.9767	1.0000	0.0000	0.0233	
83 8 20	179.5	176.3	0.0	3.2	0.9822	1.0000	0.0000	0.0178	
83 8 21	144.3	140.6	0.0	3.7	0.9744	1.0000	0.0000	0.0256	
83 8 22	108.2	104.8	0.0	3.4	0.9689	1.0000	0.0000	0.0311	
83 8 23	107.9	104.7	0.0	3.2	0.9703	1.0000	0.0000	0.0297	
83 8 24	130.4	127.0	0.0	3.4	0.9742	1.0000	0.0000	0.0258	
83 8 25	96.6	93.2	0.0	3.4	0.9651	1.0000	0.0000	0.0349	
83 8 26	93.5	90.3	0.0	3.2	0.9658	1.0000	0.0000	0.0342	
83 8 27	103.4	100.0	0.0	3.4	0.9674	1.0000	0.0000	0.0326	
83 8 28	112.3	108.9	0.0	3.4	0.9700	1.0000	0.0000	0.0300	
83 8 29	90.7	87.3	0.0	3.4	0.9629	1.0000	0.0000	0.0371	
83 8 30	105.5	102.2	0.0	3.4	0.9681	1.0000	0.0000	0.0319	
83 8 31	128.2	124.8	0.0	3.5	0.9731	1.0000	0.0000	0.0269	
83 9 1	134.6	131.0	0.0	3.5	0.9737	1.0000	0.0000	0.0263	
83 9 2	141.5	138.1	0.0	3.4	0.9762	1.0000	0.0000	0.0238	
83 9 3	121.6	118.2	0.0	3.4	0.9723	1.0000	0.0000	0.0277	
83 9 4	79.6	76.3	0.0	3.4	0.9577	1.0000	0.0000	0.0423	
83 9 5	68.6	65.2	0.0	3.4	0.9509	1.0000	0.0000	0.0491	
83 9 6	77.5	73.9	0.0	3.5	0.9544	1.0000	0.0000	0.0456	
83 9 7	86.6	83.3	0.0	3.4	0.9611	1.0000	0.0000	0.0389	

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83 9 8	133.0	129.8	0.0	3.2	0.9759	1.0000	0.0000	0.0241	
83 9 9	84.8	81.3	0.0	3.5	0.9583	1.0000	0.0000	0.0417	
83 9 10	118.4	114.9	0.0	3.5	0.9702	1.0000	0.0000	0.0298	
83 9 11	99.4	96.0	0.0	3.4	0.9661	1.0000	0.0000	0.0339	
83 9 12	68.3	65.0	0.0	3.4	0.9507	1.0000	0.0000	0.0493	
83 9 13	74.9	71.0	0.0	3.9	0.9484	1.0000	0.0000	0.0516	
83 9 14	78.2	74.6	0.0	3.5	0.9548	1.0000	0.0000	0.0452	
83 9 15	74.2	70.7	0.0	3.5	0.9524	1.0000	0.0000	0.0476	
83 9 16	78.0	74.7	0.0	3.4	0.9569	1.0000	0.0000	0.0431	
83 9 17	109.7	106.3	0.0	3.4	0.9693	1.0000	0.0000	0.0307	
83 9 18	73.9	70.5	0.0	3.4	0.9544	1.0000	0.0000	0.0456	
83 9 19	83.3	80.1	0.0	3.2	0.9616	1.0000	0.0000	0.0384	
83 9 20	94.0	90.8	0.0	3.2	0.9660	1.0000	0.0000	0.0340	
83 9 21	86.2	82.5	0.0	3.7	0.9571	1.0000	0.0000	0.0429	
83 9 22	149.7	146.3	0.0	3.4	0.9775	1.0000	0.0000	0.0225	
83 9 23	84.4	81.2	0.0	3.2	0.9621	1.0000	0.0000	0.0379	
83 9 24	87.7	84.3	0.0	3.4	0.9616	1.0000	0.0000	0.0384	
83 9 25	65.1	61.7	0.0	3.4	0.9482	1.0000	0.0000	0.0518	
83 9 26	66.9	63.6	0.0	3.4	0.9497	1.0000	0.0000	0.0503	
83 9 27	73.3	69.7	0.0	3.5	0.9518	1.0000	0.0000	0.0482	
83 9 28	77.0	73.7	0.0	3.4	0.9563	1.0000	0.0000	0.0437	
83 9 29	71.4	68.0	0.0	3.4	0.9529	1.0000	0.0000	0.0471	
83 9 30	69.4	66.2	0.0	3.2	0.9539	1.0000	0.0000	0.0461	
83 10 1	81.4	78.0	0.0	3.4	0.9586	1.0000	0.0000	0.0414	
83 10 2	84.8	81.3	0.0	3.5	0.9583	1.0000	0.0000	0.0417	
83 10 3	67.2	63.8	0.0	3.4	0.9499	1.0000	0.0000	0.0501	
83 10 4	90.2	86.8	0.0	3.4	0.9627	1.0000	0.0000	0.0373	
83 10 5	69.3	66.1	0.0	3.2	0.9538	1.0000	0.0000	0.0462	
83 10 6	88.7	85.1	0.0	3.5	0.9601	1.0000	0.0000	0.0399	
83 10 7	84.3	81.0	0.0	3.4	0.9601	1.0000	0.0000	0.0399	
83 10 8	89.9	86.7	0.0	3.2	0.9644	1.0000	0.0000	0.0356	
83 10 9	55.4	51.7	0.0	3.7	0.9332	1.0000	0.0000	0.0668	
83 10 10	60.0	56.7	0.0	3.4	0.9439	1.0000	0.0000	0.0561	
83 10 11	84.4	81.2	0.0	3.2	0.9621	1.0000	0.0000	0.0379	
83 10 12	99.1	95.6	0.0	3.5	0.9644	1.0000	0.0000	0.0356	
83 10 13	91.8	88.1	0.0	3.7	0.9597	1.0000	0.0000	0.0403	
83 10 14	56.4	52.8	0.0	3.5	0.9373	1.0000	0.0000	0.0627	
83 10 15	69.8	66.4	0.0	3.4	0.9517	1.0000	0.0000	0.0483	
83 10 16	80.5	77.1	0.0	3.4	0.9582	1.0000	0.0000	0.0418	
83 10 17	55.5	52.0	0.0	3.5	0.9363	1.0000	0.0000	0.0637	
83 10 18	93.0	89.8	0.0	3.2	0.9656	1.0000	0.0000	0.0344	
83 10 19	97.2	93.7	0.0	3.5	0.9637	1.0000	0.0000	0.0363	
83 10 20	103.9	100.5	0.0	3.4	0.9676	1.0000	0.0000	0.0324	
83 10 21	103.9	100.7	0.0	3.2	0.9692	1.0000	0.0000	0.0308	
83 10 22	85.2	81.5	0.0	3.7	0.9566	1.0000	0.0000	0.0434	
83 10 23	87.0	83.6	0.0	3.4	0.9613	1.0000	0.0000	0.0387	
83 10 24	70.4	66.9	0.0	3.5	0.9498	1.0000	0.0000	0.0502	
83 10 25	93.4	90.1	0.0	3.4	0.9640	1.0000	0.0000	0.0360	
83 10 26	101.9	98.4	0.0	3.5	0.9653	1.0000	0.0000	0.0347	
83 10 27	82.6	78.8	0.0	3.8	0.9545	1.0000	0.0000	0.0455	
83 10 28	76.8	73.5	0.0	3.4	0.9562	1.0000	0.0000	0.0438	
83 10 29	110.2	106.9	0.0	3.4	0.9695	1.0000	0.0000	0.0305	
83 10 30	91.1	87.9	0.0	3.2	0.9649	1.0000	0.0000	0.0351	

THIS REPORT WAS PRODUCED TO SHOW, FOR A USER SPECIFIED TIME PERIOD, THE AVERAGE WATER FLOWS ASSOCIATED WITH A PARTICULAR DAMSITE, AND SEVERAL RATIOS OF THESE FLOWS. THE SPECIFIED TIME PERIOD USED FOR THIS REPORT IS INDICATED BY ASTERISKS BENEATH ALL INCLUDED HOURS. THE DATE COLUMN HAS THE DATE OF THE LAST HOUR FOR THE SPECIFIED TIME PERIOD. FLOWS ARE MEASURED IN KILO CUBIC FEET PER SECOND (KCFS).

SPECIFIED TIME PERIOD

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(FIRST DAY)    1 1 1 1 1 1 1 1 1 1 2 2 2 2 2    (SECOND DAY)   1 1 1 1 1 1 1 1 1 1 2 2 2 2 2
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
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RIVER FLOW DATA AT THE JOHN DAY DAM SITE

DATE YY/MM/DD	*** AVERAGE HOURLY FLOWS ***** TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	SELECTED FLOW RATIOS *** TURBINE TOTAL	TURBINE TRB+SPL	UNIT #3 TRB+SPL	SPILL TOTAL	OTHER TOTAL	*** COMMENTS ***
83 1 1	140.3	139.4	13.5	0.0	0.9	0.9936	1.0000	0.0968	0.0000	0.0064	* HOURLY RECORD MISSING *
83 1 2	140.1	139.3	14.3	0.0	0.8	0.9943	1.0000	0.1023	0.0000	0.0057	
83 1 3	115.4	114.6	14.3	0.0	0.8	0.9931	1.0000	0.1250	0.0000	0.0069	
83 1 4	129.6	129.2	14.7	0.0	0.4	0.9969	1.0000	0.1139	0.0000	0.0031	
83 1 5	129.3	128.9	14.2	0.0	0.4	0.9969	1.0000	0.1098	0.0000	0.0031	
83 1 6	162.7	161.9	15.2	0.0	0.8	0.9951	1.0000	0.0938	0.0000	0.0049	
83 1 7	171.8	171.4	15.0	0.0	0.4	0.9977	1.0000	0.0874	0.0000	0.0023	
83 1 8	155.1	154.3	16.1	0.0	0.8	0.9948	1.0000	0.1047	0.0000	0.0052	
83 1 9	159.6	159.2	17.1	0.0	0.4	0.9975	1.0000	0.1071	0.0000	0.0025	
83 1 10	112.4	112.0	15.1	0.0	0.4	0.9964	1.0000	0.1343	0.0000	0.0036	
83 1 11	154.8	154.1	15.2	0.0	0.7	0.9955	1.0000	0.0989	0.0000	0.0045	
83 1 12	117.1	116.4	13.3	0.0	0.7	0.9940	1.0000	0.1139	0.0000	0.0060	
83 1 13	191.5	126.0	14.0	64.6	0.9	0.6580	0.6611	0.0735	0.3373	0.0047	
83 1 14	243.4	166.9	14.6	75.9	0.5	0.6860	0.6874	0.0601	0.3119	0.0021	
83 1 15	182.6	181.7	13.6	0.0	0.9	0.9951	1.0000	0.0750	0.0000	0.0049	
83 1 16	155.0	154.3	13.1	0.0	0.7	0.9955	1.0000	0.0849	0.0000	0.0045	
83 1 17	150.4	149.7	12.5	0.0	0.7	0.9953	1.0000	0.0833	0.0000	0.0047	
83 1 18	173.6	173.3	14.1	0.0	0.3	0.9983	1.0000	0.0811	0.0000	0.0017	
83 1 19	183.3	182.6	14.3	0.0	0.7	0.9962	1.0000	0.0783	0.0000	0.0038	
83 1 20	181.8	181.1	14.3	0.0	0.7	0.9962	1.0000	0.0789	0.0000	0.0038	
83 1 21	159.1	158.8	13.5	0.0	0.3	0.9981	1.0000	0.0849	0.0000	0.0019	
83 1 22	190.2	139.9	15.4	0.0	0.3	0.9984	1.0000	0.0811	0.0000	0.0016	
83 1 23	112.6	112.1	13.6	0.0	0.5	0.9956	1.0000	0.1216	0.0000	0.0044	
83 1 24	128.6	127.7	13.4	0.0	0.9	0.9930	1.0000	0.1047	0.0000	0.0070	
83 1 25	84.5	83.8	14.5	0.0	0.7	0.9917	1.0000	0.1731	0.0000	0.0083	
83 1 26	130.7	130.2	14.5	0.0	0.5	0.9962	1.0000	0.1111	0.0000	0.0038	
83 1 27	160.6	160.1	15.3	0.0	0.5	0.9969	1.0000	0.0957	0.0000	0.0031	
83 1 28	168.8	168.5	14.2	0.0	0.3	0.9982	1.0000	0.0841	0.0000	0.0018	
83 1 29	147.6	146.9	13.8	0.0	0.7	0.9953	1.0000	0.0938	0.0000	0.0047	
83 1 30	152.6	151.9	13.3	0.0	0.7	0.9954	1.0000	0.0874	0.0000	0.0046	
83 1 31	128.4	128.1	15.4	0.0	0.3	0.9977	1.0000	0.1200	0.0000	0.0023	
83 2 1	177.2	176.7	14.9	0.0	0.5	0.9971	1.0000	0.0841	0.0000	0.0029	
83 2 2	160.1	159.4	14.5	0.0	0.7	0.9956	1.0000	0.0909	0.0000	0.0044	
83 2 3	177.7	176.8	15.6	0.0	0.9	0.9949	1.0000	0.0882	0.0000	0.0051	
83 2 4	238.0	237.5	17.0	0.0	0.5	0.9979	1.0000	0.0714	0.0000	0.0021	
83 2 5	208.1	207.4	16.1	0.0	0.7	0.9966	1.0000	0.0776	0.0000	0.0034	
83 2 6	105.3	104.8	13.3	0.0	0.5	0.9953	1.0000	0.1268	0.0000	0.0047	
83 2 7	165.7	165.2	14.4	0.0	0.5	0.9970	1.0000	0.0874	0.0000	0.0030	

THIS REPORT WAS PRODUCED TO SHOW, FOR A USER SPECIFIED TIME PERIOD, THE AVERAGE WATER FLOWS ASSOCIATED WITH A PARTICULAR DAMSITE, AND SEVERAL RATIOS OF THESE FLOWS. THE SPECIFIED TIME PERIOD USED FOR THIS REPORT IS INDICATED BY ASTERISKS BENEATH ALL INCLUDED HOURS. THE DATE COLUMN HAS THE DATE OF THE LAST HOUR FOR THE SPECIFIED TIME PERIOD. FLOWS ARE MEASURED IN KILO CUBIC FEET PER SECOND (KCFS).

SPECIFIED TIME PERIOD

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(FIRST DAY)    1 1 1 1 1 1 1 1 1 1 2 2 2 2 2    (SECOND DAY)   1 1 1 1 1 1 1 1 1 1 2 2 2 2 2
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
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RIVER FLOW DATA AT THE JOHN DAY DAM SITE

DATE YY/MM/DD	*** AVERAGE HOURLY FLOWS ***** TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	SELECTED FLOW RATIOS *** TURBINE/TOTAL	TURBINE/TRB+SPL	UNIT #3/TRB+SPL	SPILL/TOTAL	OTHER/TOTAL	*** COMMENTS ***
83 1 1	140.3	139.4	13.5	0.0	0.9	0.9936	1.0000	0.0968	0.0000	0.0064	* HOURLY RECORD MISSING *
83 1 2	140.1	139.3	14.3	0.0	0.8	0.9943	1.0000	0.1023	0.0000	0.0057	
83 1 3	115.4	114.6	14.3	0.0	0.8	0.9931	1.0000	0.1250	0.0000	0.0069	
83 1 4	129.6	129.2	14.7	0.0	0.4	0.9969	1.0000	0.1139	0.0000	0.0031	
83 1 5	129.3	128.9	14.2	0.0	0.4	0.9969	1.0000	0.1098	0.0000	0.0031	
83 1 6	162.7	161.9	15.2	0.0	0.8	0.9951	1.0000	0.0938	0.0000	0.0049	
83 1 7	171.8	171.4	15.0	0.0	0.4	0.9977	1.0000	0.0874	0.0000	0.0023	
83 1 8	155.1	154.3	16.1	0.0	0.8	0.9948	1.0000	0.1047	0.0000	0.0052	
83 1 9	159.6	159.2	17.1	0.0	0.4	0.9975	1.0000	0.1071	0.0000	0.0025	
83 1 10	112.4	112.0	15.1	0.0	0.4	0.9964	1.0000	0.1343	0.0000	0.0036	
83 1 11	154.8	154.1	15.2	0.0	0.7	0.9955	1.0000	0.0939	0.0000	0.0045	
83 1 12	117.1	116.4	13.3	0.0	0.7	0.9940	1.0000	0.1139	0.0000	0.0060	
83 1 13	191.5	126.0	14.0	64.6	0.9	0.6580	0.6611	0.0735	0.3373	0.0047	
83 1 14	243.4	166.9	14.6	75.9	0.5	0.6860	0.6874	0.0601	0.3119	0.0021	
83 1 15	182.6	181.7	13.6	0.0	0.9	0.9951	1.0000	0.0750	0.0000	0.0049	
83 1 16	155.0	154.3	13.1	0.0	0.7	0.9955	1.0000	0.0849	0.0000	0.0045	
83 1 17	150.4	149.7	12.5	0.0	0.7	0.9953	1.0000	0.0833	0.0000	0.0047	
83 1 18	173.6	173.3	14.1	0.0	0.3	0.9983	1.0000	0.0811	0.0000	0.0017	
83 1 19	183.3	182.6	14.3	0.0	0.7	0.9962	1.0000	0.0783	0.0000	0.0038	
83 1 20	181.8	181.1	14.3	0.0	0.7	0.9962	1.0000	0.0789	0.0000	0.0038	
83 1 21	159.1	158.8	13.5	0.0	0.3	0.9981	1.0000	0.0849	0.0000	0.0019	
83 1 22	190.2	139.9	15.4	0.0	0.3	0.9984	1.0000	0.0811	0.0000	0.0016	
83 1 23	112.6	112.1	13.6	0.0	0.5	0.9956	1.0000	0.1216	0.0000	0.0044	
83 1 24	128.6	127.7	13.4	0.0	0.9	0.9930	1.0000	0.1047	0.0000	0.0070	
83 1 25	84.5	83.8	14.5	0.0	0.7	0.9917	1.0000	0.1731	0.0000	0.0083	
83 1 26	130.7	130.2	14.5	0.0	0.5	0.9962	1.0000	0.1111	0.0000	0.0038	
83 1 27	160.6	160.1	15.3	0.0	0.5	0.9969	1.0000	0.0957	0.0000	0.0031	
83 1 28	168.8	168.5	14.2	0.0	0.3	0.9982	1.0000	0.0841	0.0000	0.0018	
83 1 29	147.6	146.9	13.8	0.0	0.7	0.9953	1.0000	0.0938	0.0000	0.0047	
83 1 30	152.6	151.9	13.3	0.0	0.7	0.9954	1.0000	0.0874	0.0000	0.0046	
83 1 31	128.4	128.1	15.4	0.0	0.3	0.9977	1.0000	0.1200	0.0000	0.0023	
83 2 1	177.2	176.7	14.9	0.0	0.5	0.9971	1.0000	0.0841	0.0000	0.0029	
83 2 2	160.1	159.4	14.5	0.0	0.7	0.9956	1.0000	0.0909	0.0000	0.0044	
83 2 3	177.7	176.8	15.6	0.0	0.9	0.9949	1.0000	0.0832	0.0000	0.0051	
83 2 4	238.0	237.5	17.0	0.0	0.5	0.9979	1.0000	0.0714	0.0000	0.0021	
83 2 5	208.1	207.4	16.1	0.0	0.7	0.9966	1.0000	0.0776	0.0000	0.0034	
83 2 6	105.3	104.8	13.3	0.0	0.5	0.9953	1.0000	0.1268	0.0000	0.0047	
83 2 7	165.7	165.2	14.4	0.0	0.5	0.9970	1.0000	0.0874	0.0000	0.0030	

*** AVERAGE HOURLY FLOWS ***** SELECTED FLOW RATIOS ***

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE / TOTAL	TURBINE / TRB+SPL	UNIT #3 / TRB+SPL	SPILL / TOTAL	OTHER / TOTAL	COMMENTS
83 2 8	164.0	163.5	14.9	0.0	0.5	0.9970	1.0000	0.0909	0.0000	0.0030	
83 2 9	171.7	170.8	14.9	0.0	0.9	0.9948	1.0000	0.0874	0.0000	0.0052	
83 2 10	196.4	195.3	16.6	0.0	1.1	0.9944	1.0000	0.0849	0.0000	0.0056	
83 2 11	188.1	187.6	15.8	0.0	0.5	0.9973	1.0000	0.0841	0.0000	0.0027	
83 2 12	186.7	186.2	15.7	0.0	0.5	0.9973	1.0000	0.0841	0.0000	0.0027	
83 2 13	155.9	155.2	15.2	0.0	0.7	0.9956	1.0000	0.0978	0.0000	0.0044	
83 2 14	149.1	148.8	14.9	0.0	0.3	0.9980	1.0000	0.1000	0.0000	0.0020	
83 2 15	130.3	129.6	15.0	0.0	0.7	0.9945	1.0000	0.1154	0.0000	0.0055	
83 2 16	179.5	178.8	15.2	0.0	0.7	0.9961	1.0000	0.0849	0.0000	0.0039	
83 2 17	179.1	178.8	15.0	0.0	0.3	0.9983	1.0000	0.0841	0.0000	0.0017	
83 2 18	126.5	125.6	13.6	0.0	0.9	0.9929	1.0000	0.1084	0.0000	0.0071	
83 2 19	156.8	156.5	14.4	0.0	0.3	0.9981	1.0000	0.0913	0.0000	0.0019	
83 2 20	211.2	126.2	15.1	84.5	0.5	0.5974	0.5988	0.0719	0.4002	0.0024	
83 2 21	257.5	113.3	15.2	143.1	1.1	0.4399	0.4419	0.0594	0.5557	0.0044	
83 2 22	281.9	143.2	13.9	137.5	1.1	0.5082	0.5102	0.0494	0.4878	0.0039	
83 2 23	267.6	119.6	13.8	147.7	0.3	0.4468	0.4473	0.0516	0.5520	0.0011	
83 2 24	276.8	126.1	14.4	150.1	0.7	0.4554	0.4566	0.0520	0.5421	0.0025	
83 2 25	286.5	143.8	14.9	142.0	0.7	0.5019	0.5031	0.0520	0.4956	0.0026	
83 2 26	255.7	138.4	16.6	117.0	0.3	0.5413	0.5419	0.0650	0.4576	0.0012	
83 2 27	251.2	99.9	13.2	150.4	0.9	0.3976	0.3990	0.0528	0.5988	0.0036	
83 2 28	285.4	139.9	16.1	144.8	0.7	0.4901	0.4913	0.0567	0.5074	0.0025	
83 3 1	320.8	188.4	15.7	131.9	0.5	0.5873	0.5882	0.0490	0.4111	0.0016	
83 3 2	323.9	180.8	15.8	142.2	0.8	0.5582	0.5597	0.0489	0.4392	0.0026	
83 3 3	341.6	191.6	14.8	148.7	1.1	0.5615	0.5633	0.0433	0.4353	0.0032	
83 3 4	350.3	215.7	16.5	133.8	0.7	0.6159	0.6172	0.0471	0.3821	0.0020	
83 3 5	381.7	235.7	15.7	145.0	1.1	0.6174	0.6191	0.0413	0.3798	0.0029	
83 3 6	317.2	174.0	14.1	142.0	1.2	0.5485	0.5506	0.0446	0.4477	0.0037	
83 3 7	327.1	196.9	14.1	129.7	0.5	0.6020	0.6029	0.0431	0.3965	0.0015	
83 3 8	377.9	237.2	16.9	139.8	0.9	0.6276	0.6291	0.0449	0.3701	0.0024	
83 3 9	359.2	223.9	14.9	134.4	0.9	0.6234	0.6250	0.0417	0.3741	0.0025	
83 3 10	339.1	199.3	16.3	137.9	2.0	0.5876	0.5910	0.0484	0.4065	0.0059	
83 3 11	318.8	199.1	15.4	118.6	1.1	0.6245	0.6267	0.0486	0.3720	0.0035	
83 3 12	326.8	176.3	17.6	150.0	0.6	0.5393	0.5402	0.0540	0.4590	0.0018	
83 3 13	331.1	180.2	16.4	150.4	0.5	0.5442	0.5451	0.0496	0.4542	0.0015	
83 3 14	348.0	221.8	16.6	125.6	0.7	0.6372	0.6385	0.0479	0.3607	0.0021	
83 3 15	351.4	212.1	18.5	138.7	0.5	0.6037	0.6046	0.0528	0.3949	0.0014	
83 3 16	362.7	211.2	18.6	151.0	0.5	0.5822	0.5830	0.0514	0.4164	0.0014	
83 3 17	374.5	224.0	17.1	149.9	0.5	0.5983	0.5991	0.0457	0.4004	0.0013	
83 3 18	391.6	251.2	17.8	140.9	-0.5	0.6415	0.6407	0.0454	0.3598	-.0012	
83 3 19	390.9	249.7	16.6	140.7	0.5	0.6388	0.6396	0.0426	0.3599	0.0013	
83 3 20	382.2	231.3	17.8	150.4	0.5	0.6051	0.6059	0.0466	0.3936	0.0013	
83 3 21	361.2	210.3	16.2	150.4	0.5	0.5823	0.5831	0.0449	0.4164	0.0014	
83 3 22	347.0	212.9	15.8	134.1	-0.0	0.6135	0.6135	0.0456	0.3866	-.0001	
83 3 23	345.4	209.3	14.7	135.6	0.5	0.6059	0.6068	0.0427	0.3927	0.0014	
83 3 24	341.1	198.8	16.9	141.8	0.5	0.5827	0.5835	0.0495	0.4156	0.0015	
83 3 25	332.9	217.4	16.2	115.0	0.5	0.6530	0.6540	0.0486	0.3454	0.0015	
83 3 26	304.1	223.3	16.7	80.7	0.1	0.7343	0.7345	0.0551	0.2654	0.0004	
83 3 27	266.4	184.5	15.4	80.7	1.1	0.6928	0.6958	0.0580	0.3029	0.0043	
83 3 28	320.8	239.4	16.1	80.6	0.8	0.7465	0.7483	0.0503	0.2511	0.0024	
83 3 29	303.0	221.1	15.8	80.7	1.1	0.7299	0.7326	0.0523	0.2664	0.0037	
83 3 30	336.3	253.6	18.1	80.7	2.0	0.7540	0.7586	0.0542	0.2399	0.0060	
83 3 31	295.0	213.0	15.2	80.7	1.3	0.7220	0.7252	0.0518	0.2736	0.0044	
83 4 1	305.4	223.7	14.9	80.7	1.0	0.7326	0.7349	0.0490	0.2642	0.0031	

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE / TOTAL	TURBINE / TRB+SPL	UNIT #3 / TRB+SPL	SPILL / TOTAL	OTHER / TOTAL	COMMENTS
83 4 2	314.1	232.7	15.5	80.7	0.7	0.7408	0.7425	0.0495	0.2570	0.0023	
83 4 3	319.5	237.7	15.8	80.7	1.1	0.7439	0.7465	0.0498	0.2526	0.0035	
83 4 4	274.3	192.8	15.8	80.7	0.8	0.7028	0.7049	0.0577	0.2942	0.0030	
83 4 5	255.6	174.2	16.7	80.7	0.7	0.6815	0.6834	0.0654	0.3158	0.0028	
83 4 6	245.7	164.6	14.2	80.1	0.9	0.6701	0.6726	0.0582	0.3262	0.0037	
83 4 7	312.0	230.4	16.5	80.7	0.9	0.7385	0.7406	0.0529	0.2586	0.0029	
83 4 8	220.4	210.5	16.1	8.9	0.9	0.9554	0.9593	0.0732	0.0405	0.0041	
83 4 9	187.6	186.3	15.7	0.0	1.3	0.9931	1.0000	0.0841	0.0000	0.0069	
83 4 10	230.5	170.9	14.0	58.6	0.9	0.7416	0.7446	0.0609	0.2544	0.0040	
83 4 11	254.7	243.8	17.0	9.8	1.1	0.9572	0.9613	0.0671	0.0386	0.0043	
83 4 12	238.2	192.0	14.8	45.7	0.5	0.8060	0.8077	0.0621	0.1919	0.0021	
83 4 13	263.9	153.7	14.4	109.4	0.8	0.5824	0.5842	0.0548	0.4144	0.0032	
83 4 14	254.7	148.8	14.1	104.4	1.5	0.5843	0.5878	0.0557	0.4098	0.0058	
83 4 15	218.5	180.3	14.8	37.7	0.5	0.8252	0.8271	0.0677	0.1725	0.0023	
83 4 16	240.4	133.2	14.1	106.5	0.7	0.5543	0.5559	0.0589	0.4428	0.0029	
83 4 17	225.9	111.6	14.0	113.6	0.7	0.4942	0.4958	0.0620	0.5027	0.0031	
83 4 18	213.3	111.4	14.3	100.2	1.7	0.5224	0.5265	0.0677	0.4697	0.0079	
83 4 19	239.2	121.6	14.6	116.7	0.9	0.5085	0.5104	0.0612	0.4878	0.0038	
83 4 20	218.4	120.2	14.1	97.3	0.9	0.5505	0.5528	0.0646	0.4454	0.0041	
83 4 21	166.7	129.9	15.0	35.7	1.1	0.7790	0.7842	0.0905	0.2144	0.0066	
83 4 22	187.2	128.1	14.7	60.2	1.0	0.6733	0.6768	0.0791	0.3215	0.0052	
83 4 23	258.0	143.6	16.4	113.9	0.5	0.5566	0.5576	0.0635	0.4416	0.0019	
83 4 24	259.9	129.8	16.2	129.1	0.9	0.4995	0.5014	0.0627	0.4968	0.0036	* HOURLY RECORD MISSING *
83 4 25	306.0	155.6	16.7	149.9	0.5	0.5084	0.5092	0.0546	0.4900	0.0016	
83 4 26	366.7	235.8	16.8	130.3	0.7	0.6429	0.6441	0.0460	0.3552	0.0019	
83 4 27	294.7	144.2	14.1	149.9	0.6	0.4892	0.4903	0.0480	0.5086	0.0022	
83 4 28	339.6	167.5	16.8	170.8	1.3	0.4933	0.4952	0.0495	0.5029	0.0038	
83 4 29	316.5	156.9	14.3	158.6	0.9	0.4959	0.4974	0.0452	0.5012	0.0029	
83 4 30	338.4	172.0	15.6	165.7	0.7	0.5084	0.5094	0.0463	0.4896	0.0021	
83 5 1	285.1	141.8	15.8	142.6	0.7	0.4975	0.4987	0.0554	0.5000	0.0025	
83 5 2	322.0	160.5	17.8	160.7	0.9	0.4983	0.4997	0.0555	0.4989	0.0028	
83 5 3	304.2	149.4	14.2	153.9	0.9	0.4911	0.4925	0.0467	0.5060	0.0029	
83 5 4	300.1	151.3	14.8	148.3	0.5	0.5042	0.5051	0.0494	0.4941	0.0017	
83 5 5	252.4	124.5	14.4	126.9	0.9	0.4935	0.4953	0.0572	0.5028	0.0037	
83 5 6	323.5	160.9	14.2	162.0	0.7	0.4973	0.4983	0.0440	0.5006	0.0022	
83 5 7	311.2	155.6	15.1	155.1	0.5	0.5000	0.5008	0.0485	0.4984	0.0016	
83 5 8	324.9	162.5	16.2	161.5	0.9	0.5001	0.5015	0.0501	0.4971	0.0028	
83 5 9	305.5	153.1	15.5	151.7	0.7	0.5011	0.5022	0.0508	0.4966	0.0023	
83 5 10	326.8	163.5	15.8	162.7	0.6	0.5004	0.5013	0.0485	0.4978	0.0017	
83 5 11	344.0	194.7	16.8	148.5	0.8	0.5659	0.5672	0.0491	0.4318	0.0023	
83 5 12	370.6	225.7	17.4	144.1	0.9	0.6090	0.6104	0.0470	0.3887	0.0023	
83 5 13	297.0	146.1	14.6	150.3	0.6	0.4920	0.4930	0.0493	0.5059	0.0021	
83 5 14	316.0	136.4	17.1	178.7	0.8	0.4316	0.4329	0.0541	0.5657	0.0025	
83 5 15	281.3	122.9	14.4	157.6	0.8	0.4366	0.4381	0.0512	0.5603	0.0029	
83 5 16	287.0	147.2	15.2	139.2	0.6	0.5129	0.5140	0.0532	0.4850	0.0021	
83 5 17	265.5	138.6	14.5	126.1	0.8	0.5219	0.5236	0.0561	0.4750	0.0031	
83 5 18	271.1	135.5	15.1	134.0	1.6	0.4998	0.5027	0.0559	0.4943	0.0059	
83 5 19	255.1	125.6	14.5	128.9	0.6	0.4923	0.4935	0.0569	0.5054	0.0024	
83 5 20	268.6	132.8	15.3	135.0	0.8	0.4946	0.4960	0.0572	0.5025	0.0029	
83 5 21	262.0	131.0	14.4	129.6	1.4	0.5000	0.5027	0.0552	0.4946	0.0053	
83 5 22	203.1	98.4	14.1	104.1	0.8	0.4847	0.4861	0.0694	0.5124	0.0029	
83 5 23	243.3	116.5	14.3	125.9	0.8	0.4790	0.4806	0.0609	0.5177	0.0033	
83 5 24	285.3	144.0	15.6	140.6	0.8	0.5046	0.5060	0.0549	0.4926	0.0028	

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE / TOTAL	TURBINE / TRB+SPL	UNIT #3 / TRB+SPL	SPILL / TOTAL	OTHER / TOTAL	COMMENTS
*** AVERAGE HOURLY FLOWS *****						SELECTED FLOW RATIOS ***					
83 5 25	284.5	143.9	15.6	139.8	0.8	0.5057	0.5071	0.0550	0.4915	0.0028	
83 5 26	358.5	177.0	17.7	180.5	1.0	0.4938	0.4951	0.0495	0.5035	0.0028	
83 5 27	390.2	196.1	18.8	193.1	1.0	0.5025	0.5038	0.0482	0.4949	0.0026	
83 5 28	402.4	202.2	15.4	199.3	1.0	0.5024	0.5036	0.0384	0.4951	0.0025	
83 5 29	414.9	214.6	17.9	199.5	0.8	0.5173	0.5183	0.0432	0.4808	0.0019	
83 5 30	417.6	217.3	18.1	199.5	0.8	0.5204	0.5214	0.0434	0.4777	0.0019	
83 5 31	422.0	228.1	19.0	193.1	0.8	0.5405	0.5415	0.0451	0.4576	0.0019	
83 6 1	418.0	217.5	14.5	199.5	1.0	0.5203	0.5215	0.0348	0.4773	0.0024	
83 6 2	421.4	221.1	17.0	199.5	0.8	0.5247	0.5257	0.0404	0.4734	0.0018	
83 6 3	421.5	220.9	14.7	199.4	1.2	0.5240	0.5255	0.0350	0.4732	0.0028	
83 6 4	379.8	194.1	16.2	184.9	0.8	0.5111	0.5122	0.0427	0.4868	0.0020	
83 6 5	379.0	184.0	15.3	194.1	1.0	0.4853	0.4866	0.0405	0.5121	0.0026	
83 6 6	359.6	175.2	15.5	183.6	0.8	0.4872	0.4883	0.0431	0.5105	0.0023	
83 6 7	374.5	183.3	15.3	190.7	0.6	0.4893	0.4901	0.0408	0.5091	0.0016	
83 6 8	352.9	177.7	15.4	174.2	1.0	0.5035	0.5050	0.0437	0.4936	0.0029	
83 6 9	349.7	174.9	16.6	174.4	0.4	0.5001	0.5007	0.0474	0.4988	0.0011	
83 6 10	334.3	182.5	15.8	151.1	0.6	0.5460	0.5470	0.0473	0.4522	0.0019	
83 6 11	341.8	170.1	16.6	171.0	0.7	0.4977	0.4987	0.0488	0.5003	0.0020	
83 6 12	342.7	170.5	17.1	171.0	1.2	0.4976	0.4993	0.0499	0.4989	0.0035	
83 6 13	343.0	170.8	17.1	171.0	1.2	0.4979	0.4997	0.0500	0.4985	0.0036	
83 6 14	307.5	153.4	15.3	153.1	1.0	0.4990	0.5006	0.0501	0.4978	0.0033	
83 6 15	268.0	134.4	14.7	133.0	0.6	0.5014	0.5025	0.0552	0.4964	0.0022	
83 6 16	268.1	134.1	14.9	133.3	0.8	0.5000	0.5015	0.0557	0.4970	0.0030	
83 6 17	304.0	162.5	15.2	140.5	1.0	0.5346	0.5363	0.0503	0.4622	0.0032	
83 6 18	268.2	141.6	17.0	125.9	0.8	0.5278	0.5294	0.0635	0.4692	0.0030	
83 6 19	226.4	122.9	14.9	102.5	1.0	0.5428	0.5451	0.0663	0.4529	0.0043	
83 6 20	224.1	120.8	14.5	102.0	1.2	0.5391	0.5421	0.0651	0.4553	0.0056	
83 6 21	251.9	138.4	14.0	112.8	0.6	0.5495	0.5509	0.0557	0.4480	0.0025	
83 6 22	249.6	136.5	13.8	112.4	0.6	0.5470	0.5484	0.0555	0.4504	0.0026	
83 6 23	260.8	216.2	15.4	43.9	0.8	0.8288	0.8313	0.0594	0.1681	0.0031	
83 6 24	236.5	181.5	15.0	54.2	0.8	0.7673	0.7700	0.0636	0.2292	0.0034	
83 6 25	212.3	148.9	13.3	62.4	1.0	0.7012	0.7046	0.0628	0.2939	0.0043	
83 6 26	209.1	127.5	16.2	80.7	0.8	0.6101	0.6125	0.0776	0.3860	0.0039	
83 6 27	202.8	130.6	13.8	71.4	0.8	0.6439	0.6464	0.0684	0.3522	0.0039	
83 6 28	216.3	128.7	13.3	86.7	0.8	0.5951	0.5974	0.0618	0.4011	0.0038	
83 6 29	193.3	121.2	14.5	70.9	1.2	0.6269	0.6308	0.0757	0.3669	0.0062	
83 6 30	186.6	132.3	14.9	53.1	1.2	0.7088	0.7134	0.0803	0.2848	0.0064	
83 7 1	179.3	160.7	15.7	18.1	0.6	0.8959	0.8990	0.0879	0.1007	0.0034	
83 7 2	167.5	138.8	9.1	27.5	1.2	0.8287	0.8346	0.0544	0.1642	0.0071	
83 7 3	199.7	98.3	13.5	99.7	1.2	0.4947	0.4977	0.0679	0.4993	0.0060	
83 7 4	215.7	115.1	15.5	99.7	0.8	0.5338	0.5358	0.0720	0.4624	0.0038	
83 7 5	192.3	91.2	13.5	99.7	1.4	0.4742	0.4776	0.0705	0.5186	0.0072	
83 7 6	200.3	100.3	13.7	99.3	0.6	0.5010	0.5025	0.0685	0.4960	0.0030	
83 7 7	246.9	126.0	14.7	120.3	0.6	0.5103	0.5115	0.0598	0.4873	0.0024	
83 7 8	238.3	137.6	13.8	99.7	1.0	0.5774	0.5799	0.0580	0.4183	0.0042	
83 7 9	220.7	140.2	15.6	79.7	0.7	0.6353	0.6374	0.0708	0.3614	0.0034	
83 7 10	166.6	86.2	13.6	79.6	0.8	0.5174	0.5198	0.0821	0.4780	0.0047	
83 7 11	150.8	70.7	12.7	79.4	0.8	0.4685	0.4710	0.0848	0.5263	0.0052	
83 7 12	190.6	111.3	13.7	78.8	0.6	0.5837	0.5855	0.0722	0.4133	0.0029	
83 7 13	219.1	156.4	14.8	61.7	1.1	0.7136	0.7171	0.0679	0.2816	0.0043	
83 7 14	204.5	132.0	15.6	71.1	1.4	0.6455	0.6499	0.0770	0.3477	0.0067	
83 7 15	186.2	114.2	15.8	71.6	0.8	0.6135	0.6161	0.0853	0.3822	0.0043	
83 7 16	276.7	135.9	15.9	140.0	0.8	0.4913	0.4927	0.0576	0.5058	0.0029	

DATE YY/MM/DD	*** AVERAGE HOURLY FLOWS ***** TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	SELECTED FLOW RATIOS *** TURBINE TOTAL	TURBINE TRB+SPL	UNIT #3 TRB+SPL	SPILL TOTAL	OTHER TOTAL	COMMENTS ***
83 7 17	227.7	98.3	16.1	128.4	1.0	0.4317	0.4336	0.0709	0.5639	0.0044	
83 7 18	245.3	93.7	7.7	150.6	1.0	0.3820	0.3835	0.0317	0.6140	0.0039	
83 7 19	260.6	133.7	14.5	126.4	0.6	0.5129	0.5140	0.0557	0.4849	0.0023	
83 7 20	199.8	78.7	13.1	120.3	0.8	0.3940	0.3956	0.0659	0.6019	0.0041	
83 7 21	240.8	96.1	13.7	143.3	1.4	0.3991	0.4014	0.0573	0.5951	0.0058	
83 7 22	221.4	78.5	13.3	142.7	0.2	0.3544	0.3547	0.0626	0.6446	0.0010	
83 7 23	212.3	94.2	13.5	117.2	1.0	0.4434	0.4456	0.0637	0.5518	0.0048	
83 7 24	204.2	87.1	13.8	116.1	1.0	0.4264	0.4286	0.0677	0.5686	0.0050	
83 7 25	203.0	81.9	14.7	120.3	0.8	0.4033	0.4049	0.0729	0.5927	0.0039	
83 7 26	203.3	81.8	15.0	120.5	1.0	0.4023	0.4043	0.0743	0.5927	0.0050	
83 7 27	246.6	111.5	14.5	134.1	1.0	0.4521	0.4540	0.0592	0.5438	0.0041	
83 7 28	222.1	71.2	14.9	149.6	1.2	0.3207	0.3224	0.0675	0.6739	0.0054	
83 7 29	239.1	94.5	14.4	143.3	1.2	0.3955	0.3975	0.0606	0.5994	0.0051	
83 7 30	218.7	83.2	12.7	134.9	0.6	0.3803	0.3814	0.0582	0.6169	0.0028	
83 7 31	237.4	97.5	13.7	139.1	0.8	0.4108	0.4121	0.0580	0.5359	0.0034	
83 8 1	216.6	79.9	13.6	135.5	1.2	0.3687	0.3708	0.0630	0.6257	0.0055	
83 8 2	196.2	123.3	16.8	72.3	0.6	0.6283	0.6303	0.0860	0.3685	0.0031	
83 8 3	192.9	162.1	17.4	29.9	0.8	0.8406	0.8442	0.0904	0.1552	0.0041	
83 8 4	219.7	147.9	16.4	70.6	1.2	0.6732	0.6769	0.0752	0.3214	0.0055	
83 8 5	176.9	148.7	15.7	27.2	1.0	0.8406	0.8453	0.0895	0.1538	0.0056	
83 8 6	162.3	134.5	14.9	26.9	0.9	0.8286	0.8332	0.0926	0.1659	0.0055	
83 8 7	170.3	142.6	14.1	26.9	0.8	0.8372	0.8411	0.0832	0.1581	0.0047	
83 8 8	152.7	80.3	13.4	71.6	0.8	0.5259	0.5286	0.0881	0.4690	0.0050	
83 8 9	143.1	115.2	14.2	27.3	0.6	0.8051	0.8085	0.0997	0.1907	0.0042	
83 8 10	149.5	131.1	15.3	17.6	0.8	0.8772	0.8818	0.1031	0.1175	0.0053	
83 8 11	144.0	125.7	15.5	17.5	0.8	0.8726	0.8775	0.1082	0.1218	0.0056	
83 8 12	130.4	109.0	15.1	20.6	0.8	0.8358	0.8410	0.1165	0.1580	0.0062	
83 8 13	153.2	81.3	14.1	71.1	0.8	0.5306	0.5333	0.0923	0.4644	0.0050	
83 8 14	146.8	75.4	13.6	70.6	0.8	0.5137	0.5164	0.0929	0.4812	0.0051	
83 8 15	143.1	124.2	16.0	18.1	0.8	0.8678	0.8727	0.1122	0.1266	0.0056	
83 8 16	102.7	85.0	14.7	16.9	0.8	0.8276	0.8341	0.1444	0.1646	0.0078	
83 8 17	149.2	81.3	13.5	67.1	0.8	0.5449	0.5477	0.0913	0.4500	0.0051	
83 8 18	132.2	114.5	13.6	16.8	1.0	0.8657	0.8723	0.1033	0.1267	0.0076	
83 8 19	144.8	87.9	14.9	55.9	1.0	0.6069	0.6113	0.1038	0.3859	0.0072	
83 8 20	181.1	136.1	15.1	44.2	0.8	0.7516	0.7550	0.0839	0.2439	0.0044	
83 8 21	153.9	153.1	13.6	0.0	0.8	0.9948	1.0000	0.0891	0.0000	0.0052	
83 8 22	146.0	100.7	13.7	44.3	1.0	0.6900	0.6947	0.0947	0.3033	0.0067	
83 8 23	116.5	115.5	15.3	0.0	1.0	0.9914	1.0000	0.1324	0.0000	0.0086	
83 8 24	126.9	67.9	12.7	58.2	0.8	0.5355	0.5387	0.1010	0.4585	0.0060	
83 8 25	94.2	93.0	13.1	0.0	1.2	0.9873	1.0000	0.1406	0.0000	0.0127	
83 8 26	101.3	100.3	13.1	0.0	1.0	0.9901	1.0000	0.1304	0.0000	0.0099	
83 8 27	111.5	110.7	13.5	0.0	0.8	0.9928	1.0000	0.1216	0.0000	0.0072	
83 8 28	116.3	115.1	6.4	0.0	1.2	0.9897	1.0000	0.0552	0.0000	0.0103	
83 8 29	97.0	95.8	14.1	0.0	1.2	0.9876	1.0000	0.1475	0.0000	0.0124	
83 8 30	94.7	94.1	13.2	0.0	0.6	0.9937	1.0000	0.1406	0.0000	0.0063	
83 8 31	115.2	114.0	12.7	0.0	1.2	0.9897	1.0000	0.1111	0.0000	0.0103	
83 9 1	150.0	149.4	14.8	0.0	0.6	0.9960	1.0000	0.0989	0.0000	0.0040	
83 9 2	132.2	131.2	14.9	0.0	1.0	0.9924	1.0000	0.1139	0.0000	0.0076	
83 9 3	120.0	118.7	14.4	0.0	1.3	0.9889	1.0000	0.1216	0.0000	0.0111	
83 9 4	115.0	114.2	13.4	0.0	0.8	0.9932	1.0000	0.1169	0.0000	0.0068	
83 9 5	94.5	93.7	13.0	0.0	0.8	0.9915	1.0000	0.1385	0.0000	0.0085	
83 9 6	86.0	85.2	13.0	0.0	0.8	0.9907	1.0000	0.1525	0.0000	0.0093	
83 9 7	121.2	120.4	15.3	0.0	0.8	0.9934	1.0000	0.1268	0.0000	0.0066	

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE / TOTAL	TURBINE / TRB+SPL	UNIT #3 / TRB+SPL	SPILL / TOTAL	OTHER / TOTAL	COMMENTS
	*** AVERAGE HOURLY FLOWS *****					SELECTED FLOW RATIOS ***					
83 9 8	118.4	117.0	14.2	0.0	1.4	0.9882	1.0000	0.1216	0.0000	0.0118	
83 9 9	83.4	81.9	14.2	0.0	1.5	0.9825	1.0000	0.1731	0.0000	0.0175	
83 9 10	98.0	97.4	15.1	0.0	0.6	0.9940	1.0000	0.1552	0.0000	0.0060	
83 9 11	112.9	111.9	13.8	0.0	1.0	0.9911	1.0000	0.1233	0.0000	0.0089	
83 9 12	80.6	79.8	13.6	0.0	0.8	0.9905	1.0000	0.1698	0.0000	0.0095	
83 9 13	90.3	89.5	14.4	0.0	0.7	0.9919	1.0000	0.1607	0.0000	0.0081	
83 9 14	87.2	86.4	13.2	0.0	0.8	0.9904	1.0000	0.1525	0.0000	0.0096	
83 9 15	89.9	88.9	13.6	0.0	1.0	0.9889	1.0000	0.1525	0.0000	0.0111	
83 9 16	89.6	88.6	6.9	0.0	1.0	0.9888	1.0000	0.0776	0.0000	0.0112	
83 9 17	98.6	97.8	14.0	0.0	0.8	0.9919	1.0000	0.1429	0.0000	0.0081	
83 9 18	103.1	101.7	13.3	0.0	1.4	0.9864	1.0000	0.1304	0.0000	0.0136	
83 9 19	86.3	85.5	13.7	0.0	0.8	0.9907	1.0000	0.1607	0.0000	0.0093	
83 9 20	104.1	103.3	14.1	0.0	0.8	0.9923	1.0000	0.1364	0.0000	0.0077	
83 9 21	104.0	102.8	16.5	0.0	1.2	0.9885	1.0000	0.1607	0.0000	0.0115	
83 9 22	118.0	117.0	14.0	0.0	1.0	0.9915	1.0000	0.1200	0.0000	0.0085	
83 9 23	102.9	101.5	14.5	0.0	1.4	0.9864	1.0000	0.1429	0.0000	0.0136	
83 9 24	78.6	77.4	12.9	0.0	1.2	0.9842	1.0000	0.1667	0.0000	0.0158	
83 9 25	75.9	75.1	13.2	0.0	0.8	0.9895	1.0000	0.1765	0.0000	0.0105	
83 9 26	82.5	81.9	13.7	0.0	0.6	0.9927	1.0000	0.1667	0.0000	0.0073	
83 9 27	76.7	75.7	12.4	0.0	1.0	0.9870	1.0000	0.1636	0.0000	0.0130	
83 9 28	83.5	82.5	12.0	0.0	1.0	0.9880	1.0000	0.1452	0.0000	0.0120	
83 9 29	88.3	87.1	12.4	0.0	1.2	0.9864	1.0000	0.1429	0.0000	0.0136	
83 9 30	94.3	93.5	13.0	0.0	0.8	0.9915	1.0000	0.1385	0.0000	0.0085	
83 10 1	90.9	90.0	12.3	0.0	0.9	0.9901	1.0000	0.1364	0.0000	0.0099	
83 10 2	87.2	86.0	12.9	0.0	1.2	0.9862	1.0000	0.1500	0.0000	0.0138	
83 10 3	75.0	74.0	12.8	0.0	1.0	0.9867	1.0000	0.1731	0.0000	0.0133	
83 10 4	93.4	92.4	12.8	0.0	1.0	0.9893	1.0000	0.1385	0.0000	0.0107	
83 10 5	99.4	98.6	13.9	0.0	0.8	0.9919	1.0000	0.1406	0.0000	0.0081	
83 10 6	95.5	94.1	13.0	0.0	1.4	0.9853	1.0000	0.1385	0.0000	0.0147	
83 10 7	90.7	89.9	14.0	0.0	0.8	0.9912	1.0000	0.1552	0.0000	0.0088	
83 10 8	78.8	78.2	12.4	0.0	0.6	0.9924	1.0000	0.1579	0.0000	0.0076	
83 10 9	70.7	69.1	13.5	0.0	1.6	0.9774	1.0000	0.1957	0.0000	0.0226	
83 10 10	59.9	58.9	12.9	0.0	1.0	0.9833	1.0000	0.2195	0.0000	0.0167	
83 10 11	90.2	89.2	12.2	0.0	1.0	0.9889	1.0000	0.1364	0.0000	0.0111	
83 10 12	132.6	131.9	15.2	0.0	0.7	0.9945	1.0000	0.1154	0.0000	0.0055	
83 10 13	110.0	109.0	14.0	0.0	1.0	0.9908	1.0000	0.1286	0.0000	0.0092	
83 10 14	69.4	68.2	12.8	0.0	1.2	0.9827	1.0000	0.1875	0.0000	0.0173	
83 10 15	95.9	94.7	12.5	0.0	1.2	0.9875	1.0000	0.1324	0.0000	0.0125	
83 10 16	73.5	72.3	12.5	0.0	1.2	0.9837	1.0000	0.1731	0.0000	0.0163	
83 10 17	77.0	76.0	15.2	0.0	1.0	0.9870	1.0000	0.2000	0.0000	0.0130	
83 10 18	104.0	103.0	14.0	0.0	1.0	0.9904	1.0000	0.1364	0.0000	0.0096	
83 10 19	108.6	108.0	13.9	0.0	0.6	0.9945	1.0000	0.1286	0.0000	0.0055	
83 10 20	88.7	87.5	13.3	0.0	1.2	0.9865	1.0000	0.1525	0.0000	0.0135	
83 10 21	104.3	103.2	14.1	0.0	1.1	0.9893	1.0000	0.1364	0.0000	0.0107	
83 10 22	95.8	95.0	13.4	0.0	0.8	0.9917	1.0000	0.1406	0.0000	0.0083	
83 10 23	67.2	66.2	14.2	0.0	1.0	0.9851	1.0000	0.2143	0.0000	0.0149	
83 10 24	72.4	71.4	13.4	0.0	1.0	0.9862	1.0000	0.1875	0.0000	0.0138	
83 10 25	97.1	96.3	14.7	0.0	0.8	0.9918	1.0000	0.1525	0.0000	0.0082	
83 10 26	93.2	92.6	14.6	0.0	0.6	0.9936	1.0000	0.1579	0.0000	0.0064	
83 10 27	91.6	90.8	13.9	0.0	0.8	0.9914	1.0000	0.1525	0.0000	0.0086	
83 10 28	87.0	86.0	14.3	0.0	1.0	0.9885	1.0000	0.1667	0.0000	0.0115	
83 10 29	92.8	91.6	13.5	0.0	1.2	0.9868	1.0000	0.1475	0.0000	0.0132	
83 10 30	103.9	102.9	13.4	0.0	1.0	0.9904	1.0000	0.1304	0.0000	0.0096	

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE TOTAL	TURBINE TRB+SPL	UNIT #3 TRB+SPL	SPILL TOTAL	OTHER TOTAL	COMMENTS
	*** AVERAGE HOURLY FLOWS *****					SELECTED FLOW RATIOS ***					
83 10 31	86.7	85.9	13.3	0.0	0.8	0.9908	1.0000	0.1552	0.0000	0.0092	
83 11 1	84.9	84.1	13.5	0.0	0.8	0.9906	1.0000	0.1607	0.0000	0.0094	
83 11 2	84.3	83.5	13.7	0.0	0.8	0.9905	1.0000	0.1636	0.0000	0.0095	
83 11 3	81.6	80.6	13.2	0.0	1.0	0.9878	1.0000	0.1636	0.0000	0.0122	
83 11 4	93.7	92.7	13.9	0.0	1.0	0.9893	1.0000	0.1500	0.0000	0.0107	
83 11 5	107.3	106.1	12.9	0.0	1.2	0.9888	1.0000	0.1216	0.0000	0.0112	
83 11 6	90.5	89.3	14.4	0.0	1.2	0.9867	1.0000	0.1607	0.0000	0.0133	
83 11 7	100.7	100.1	14.1	0.0	0.6	0.9940	1.0000	0.1406	0.0000	0.0060	
83 11 8	111.4	110.8	13.9	0.0	0.6	0.9946	1.0000	0.1250	0.0000	0.0054	
83 11 9	120.1	118.9	14.7	0.0	1.2	0.9900	1.0000	0.1233	0.0000	0.0100	
83 11 10	129.2	128.4	13.8	0.0	0.8	0.9938	1.0000	0.1071	0.0000	0.0062	
83 11 11	98.2	97.2	13.3	0.0	1.0	0.9898	1.0000	0.1364	0.0000	0.0102	
83 11 12	80.7	79.7	12.8	0.0	1.0	0.9876	1.0000	0.1607	0.0000	0.0124	
83 11 13	79.3	78.5	12.8	0.0	0.8	0.9896	1.0000	0.1636	0.0000	0.0104	
83 11 14	82.4	81.2	13.3	0.0	1.2	0.9854	1.0000	0.1636	0.0000	0.0146	
83 11 15	72.9	71.9	12.7	0.0	1.0	0.9863	1.0000	0.1765	0.0000	0.0137	
83 11 16	73.7	72.7	12.8	0.0	1.0	0.9864	1.0000	0.1765	0.0000	0.0136	
83 11 17	118.2	116.8	14.2	0.0	1.4	0.9882	1.0000	0.1216	0.0000	0.0118	
83 11 18	113.8	113.0	13.7	0.0	0.8	0.9930	1.0000	0.1216	0.0000	0.0070	
83 11 19	141.5	140.7	14.9	0.0	0.8	0.9943	1.0000	0.1059	0.0000	0.0057	
83 11 20	111.2	110.0	14.3	0.0	1.2	0.9892	1.0000	0.1304	0.0000	0.0108	
83 11 21	105.8	104.6	14.5	0.0	1.2	0.9887	1.0000	0.1385	0.0000	0.0113	
83 11 22	166.0	164.5	14.5	0.0	1.4	0.9914	1.0000	0.0882	0.0000	0.0086	
83 11 23	129.6	128.2	15.4	0.0	1.4	0.9894	1.0000	0.1200	0.0000	0.0106	
83 11 24	123.9	122.9	14.9	0.0	1.0	0.9919	1.0000	0.1216	0.0000	0.0081	
83 11 25	123.2	122.4	14.3	0.0	0.8	0.9935	1.0000	0.1169	0.0000	0.0065	
83 11 26	130.1	129.5	14.7	0.0	0.6	0.9954	1.0000	0.1139	0.0000	0.0046	
83 11 27	107.5	106.7	15.5	0.0	0.8	0.9926	1.0000	0.1452	0.0000	0.0074	
83 11 28	94.3	93.3	14.5	0.0	1.0	0.9895	1.0000	0.1552	0.0000	0.0105	
83 11 29	112.1	111.5	14.1	0.0	0.6	0.9946	1.0000	0.1268	0.0000	0.0054	
83 11 30	123.1	122.1	13.9	0.0	1.0	0.9919	1.0000	0.1139	0.0000	0.0081	
83 12 1	138.0	136.8	16.2	0.0	1.2	0.9913	1.0000	0.1184	0.0000	0.0087	
83 12 2	132.4	131.5	13.9	0.0	0.9	0.9930	1.0000	0.1059	0.0000	0.0070	
83 12 3	128.3	127.1	14.7	0.0	1.2	0.9906	1.0000	0.1154	0.0000	0.0094	
83 12 4	125.3	124.1	14.5	0.0	1.2	0.9904	1.0000	0.1169	0.0000	0.0096	
83 12 5	126.8	126.0	14.5	0.0	0.8	0.9937	1.0000	0.1154	0.0000	0.0063	
83 12 6	156.4	155.4	14.7	0.0	1.0	0.9936	1.0000	0.0947	0.0000	0.0064	
83 12 7	129.1	128.1	15.0	0.0	1.0	0.9923	1.0000	0.1169	0.0000	0.0077	
83 12 8	127.6	126.7	14.4	0.0	0.9	0.9929	1.0000	0.1139	0.0000	0.0071	
83 12 9	112.6	111.9	14.0	0.0	0.8	0.9933	1.0000	0.1250	0.0000	0.0067	
83 12 10	110.6	109.5	13.9	0.0	1.1	0.9901	1.0000	0.1268	0.0000	0.0099	
83 12 11	90.8	89.7	13.5	0.0	1.1	0.9879	1.0000	0.1500	0.0000	0.0121	
83 12 12	73.3	72.6	13.1	0.0	0.7	0.9905	1.0000	0.1800	0.0000	0.0095	
83 12 13	116.1	115.2	14.4	0.0	0.9	0.9923	1.0000	0.1250	0.0000	0.0077	
83 12 14	106.3	105.2	13.9	0.0	1.1	0.9897	1.0000	0.1324	0.0000	0.0103	
83 12 15	114.5	113.8	14.4	0.0	0.7	0.9939	1.0000	0.1268	0.0000	0.0061	
83 12 16	113.1	112.3	15.8	0.0	0.8	0.9929	1.0000	0.1406	0.0000	0.0071	
83 12 17	157.1	156.1	14.2	0.0	0.9	0.9940	1.0000	0.0909	0.0000	0.0060	
83 12 18	132.1	131.3	15.2	0.0	0.8	0.9939	1.0000	0.1154	0.0000	0.0061	
83 12 19	155.2	154.2	16.9	0.0	1.0	0.9936	1.0000	0.1098	0.0000	0.0064	
83 12 20	125.8	124.8	16.3	0.0	1.0	0.9921	1.0000	0.1304	0.0000	0.0079	
83 12 21	161.0	160.0	17.6	0.0	1.0	0.9939	1.0000	0.1098	0.0000	0.0061	
83 12 22	153.9	152.7	16.0	0.0	1.2	0.9922	1.0000	0.1047	0.0000	0.0078	

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE / TOTAL	TURBINE / TRB+SPL	UNIT #3 / TRB+SPL	SPILL / TOTAL	OTHER / TOTAL	COMMENTS
	*** AVERAGE HOURLY FLOWS *****					SELECTED FLOW RATIOS ***					
83 12 23	137.9	137.3	15.1	0.0	0.6	0.9956	1.0000	0.1098	0.0000	0.0044	
83 12 24	116.2	115.4	15.3	0.0	0.8	0.9931	1.0000	0.1324	0.0000	0.0069	
83 12 25	111.3	110.7	15.6	0.0	0.6	0.9946	1.0000	0.1406	0.0000	0.0054	
83 12 26	144.3	143.5	15.6	0.0	0.8	0.9945	1.0000	0.1084	0.0000	0.0055	
83 12 27	119.0	118.4	15.9	0.0	0.6	0.9950	1.0000	0.1343	0.0000	0.0050	
83 12 28	153.6	152.4	14.7	0.0	1.2	0.9922	1.0000	0.0968	0.0000	0.0078	* HOURLY RECORD MISSING *

TOTAL RECORD(S) READ = 8663

APPENDIX I

Steelhead and Yearling Chinook Salmon Survival Calculations, 1983

Table II.--Survival estimates for chinook salmon, 1983

Symbol[a/]	Brand: All effic. brands combined	SU3	T	12	
A	35,154	11,330	63,849	13,508	
B	8,654	2,731	14,815	3,354	
C	26,500	8,599	49,034	10,154	
D	23,916	7,761	44,253	9,164	
E	700	600	4,600	600	
F	23,216	7,161	39,653	8,564	
G	17,350	2,979	34,571	8,624	
H	2,789	470	4,992	1,313	
I	14,561	2,509	29,579	7,311	
J	13,130	2,258	26,621	6,580	
G_1	17,873	3,229	38,581	9,228	
J_1	16,117	2,906	34,723	8,305	
S_1	0.67	0.38	0.78	0.91	$\bar{X}$ = 0.69
S_2	0.61	0.34	0.71	0.82	$\bar{X}$ = 0.62
S_3	0.91	0.89	0.91	0.90	$\bar{X}$ = 0.90

a/ Key

A = No. arr. L. Granite
B = No. collected L. Granite
C = No. passing L. Granite (A-B)
D = No. arr. L. Goose (C X .95 x .95)
E = No. coll. L. Goose
F = No. passing L. Goose (D-E)
G = No. arr. McNary
H = No. coll. McNary
I = No. passing McNary (G-H)
J = No. arr. John Day

G_1 = Est. no. arr. McNary with no collection at L. Goose (DG/F)

J_1 = Est. no. arr. John Day with no collection L. Goose or McNary (G_1J/I)

S_1 = Est. survival L. Granite to McNary (G_1/C)

S_2 = Est. survival L. Granite to John Day (J_1/C)

S_3 = Est. survival McNary to John Day (S_2/S_1)

Table I2.--Survival estimates for steelhead, 1983.

Symbol[a/]	Brand F	S	W	12	
A	29,112	28,846	25,393	16,949	
B	12,811	14,708	11,081	7,962	
C	16,301	14,138	14,312	8,987	
D	14,712	12,760	12,917	8,111	
E	6,500	6,500	4,200	3,500	
F	8,212	6,260	8,717	4,611	
G	5,170	2,177	8,673	2,437	
H	294	153	441	675	
I	4,876	2,024	8,232	1,762	
J	5,458	1,675	8,019	607	
G_1	9,262	4,437	12,852	4,288	
J_1	10,368	3,672	12,519	1,477	
S_1	0.57	0.31	0.90	0.48	$\bar{X} = 0.57$
S_2	0.64	0.26	0.87	0.16	$\bar{X} = 0.48$
S_3	1.12	0.84	0.97	0.34	$\bar{X} = 0.84$

a/ Key

A = No. arr. L. Granite
B = No. collected L. Granite
C = No. passing L. Granite (A-B)
D = No. arr. L. Goose (C X .95 x .95)
E = No. coll. L. Goose
F = No. passing L. Goose (D-E)
G = No. arr. McNary
H = No. coll. McNary
I = No. passing McNary (G-H)
J = No. arr. John Day

G_1 = Est. no. arr. McNary with no collection at L. Goose (DG/F)

J_1 = Est. no. arr. John Day with no collection L. Goose or McNary (G_1J/I)

S_1 = Est. survival L. Granite to McNary (G_1/C)

S_2 = Est. survival L. Granite to John Day (J_1/C)

S_3 = Est. survival McNary to John Day (S_2/S_1)

APPENDIX J

Efficiency Release Data used to Generate the Sampling Efficiency to Powerhouse Flow Relationships

Table J1.--Collection efficiency data for steelhead at McNary Dam, 1983.

Brands	No. released	Adj. no. released[a]	Total no. recovered	Powerhouse discharge (%)[b]	Collection efficiency (%)[c]
1982					
LAAN1/LA31	626	563	328	76	58
LAAN2/LA32	1312	1181	684	73	58
LAAN3/LA33	806	725	396	69	55
RAAN1/RA31	1070	963	365	68	38
RAAN3/RA33	1196	1076	511	57	47
RAAN4/RA34	748	673	384	58	57
RA1D1/RAI+1	711	640	389	61	61
RA1D3/RAI+3	697	627	185	59	30
RAAN2/RA32	1002	902	386	56	43
LDAN2/LD32	1189	1070	122	51	11
LAAN4/LA34	1007	906	431	66	48
LA1D1/LAI+1	1001	901	421	64	47
RDAN1/RD31	741	667	100	51	15
LAI+3/LAID3	1081	973	189	66	19
RAIS1/LAIS1	4040	3232*	1318	73	41
LAIS2/RAIS2	5074	4059*	2174	62	54
RAIS3/LAIS3	4253	3402*	580	52	17
LAIS4/RAIS4	3987	3190*	920	52	30
LAIS1/RPIS1	4149	3319*	315	55	09
1983					
LA133/LA7U3	2310	2079	791	44	38
RA+T1/RA151	1626	1463	98	33	07
RA+T3/RA153	1278	1150	154	32	13
LA+T1/LA151	1061	955	286	33	30
LA+T3/LA153	1244	1120	337	64	30
LA3J1/RA3J1	3717	3345	871	51	26
LA3J2/RA3J2	5614	5053	1747	49	35
RA3J3/LA3J3	4187	3768	228	49	06
LA3J4/RA3J4	4095	3686	497	58	13
RD7U3/RD133	2394	2155	895	47	42
LD7U1/LD131	2251	2026	160	46	08
LD7U3/LD133	1827	1644	97	49	06
RD+T1/RD151	1024	922	67	42	07
RD+T3/RD153	1569	1412	392	55	28

a/ Number of fish released less an assumed 10% post handling, marking, transport, and reservoir related mortality.

b/ Powerhouse discharge rate during 2100-0600 h, averaged over the first 3 days of recovery for a specific mark.

c/ Collection efficiency is the ratio of the total number of marks collected to the number of test fish released less the assumed 10% post related mortality.

* Fish trucked from Lower Granite to Port Kelly release site. Number of fish released is less an assumed 20% mortality.

Table J2.--Collection efficiency data for chinook salmon at McNary Dam, 1983.

Brands	No. released	Adj. no. released[a]	Total no. recovered	Powerhouse discharge (%)[b]	Collection efficiency (%)[c]
1982					
LAAN1/LA31	980	882	200	76.1	23
LAAN2/LA32	2837	2553	568	72.6	22
LAAN3/LA33	2518	2266	857	69.0	38
LAAN4/LA34	3154	2839	804	65.9	28
LAI+1/LA1D1	2322	2090	421	64.0	20
RAAN1/RA31	3028	2725	494	67.7	18
RAAN3/RA33	3020	2718	693	59.2	26
RAAN4/RA34	1337	1203	382	59.7	32
RAI+1/RA1D1	1742	1568	448	60.8	29
RAI+3/RA1D3	1294	1165	227	59.2	20
LDAN2/LD32	1214	1093	158	47.1	15
1983					
RA131/RA7U1	2971	2674	201	27.7	8
RA133/RA7U3	2980	2682	235	36.5	9
LA131/LA7U1	3267	2940	225	35.4	8
LA133/LA7U3	3943	3549	713	44.5	20
RA151/RA+T1	2692	2423	513	38.2	21
RA153/RA+T3	2978	2680	313	37.0	12
LA151/LA+T1	2390	2151	152	32.8	7
LA153/LA+T3	2687	2418	725	50.0	30
RD13 1/RD7U1	2753	2478	991	70.0	40
RD133/RD7U3	2096	1886	762	49.4	40

a/ Number of fish released less an assumed 10% post handling, marking, transport, and reservoir related mortality.

b/ Powerhouse discharge rate during 2100-0600 h, averaged over the first 3 days of recovery for a specific mark.

c/ Collection efficiency is the ratio of the total number of marks collected to the number of test fish released less the assumed 10% post-release mortality.

Table J3.--Collection efficiency data for steelhead at Lower Granite Dam, 1983.

Brand	No. released	Adj. no. released[a]	No. recovered	No. of recoveries, adjusted 100% powerhouse flow	Est. efficiency at 100% powerhouse flow
1981					
LAP1	1554	1321	1169	1197	0.906
LAP2	1723	1378	448	502	0.364
LAP3	5537	4430	2218	2301	0.519
LAP4	11192	8954	5278	5598	0.625
LAS1	2200	1760	361	408	0.232
LAS2	6810	5448	2776	2791	0.512
LAY1	7334	5867	3059	4319	0.736
1982					
LAF1	7167	5734	3734	5498	0.959
LAF2	5316	4253	1564	2386	0.561
LAF3	4474	3579	1089	1617	0.452
LAF4	3069	2455	1225	1595	0.650
RAF1	2853	2282	1178	1761	0.772
RAF2	4723	3778	731	1091	0.289
RAF3	5626	4501	1017	1440	0.320
					$\bar{X}$ = 0.564

The regression line for sampling efficiency relative to % powerhouse flow would be expressed by the formula $Y = 0.000 + 0.564\ X$, where Y = estimated sampling efficiency and X = % powerhouse flow.

a/ No. of fish released less an assumed 20% post handling marking, transport, and reservoir related mortality. Since fish marked at Lower Granite Dam were trucked longer distances to the release sites than those at McNary Dam, we apply a larger mortality factor to them.

Table J4.--Collection efficiency data for chinook salmon at Lower Granite Dam, 1983.

Brand	No. released	Adj. no. released[a]	No. recovered	No. of recoveries, adjusted 100% powerhouse flow	Est. efficiency 100% powerhouse flow (%)
RA3C1	4822	3858	1019	1467	0.380
LA3C1	5390	4312	1352	1683	0.390
RA3C3	3036	2428	622	760	0.313
LA3C3	4003	3202	720	925	0.289
RD3C1	4483	3586	726	1017	0.284
LD3C1	5259	4207	738	1177	0.280
RD3C3	3707	2966	910	1308	0.441
LD3C3	2816	2252	711	982	0.436
RD3L1	3612	2890	636	729	0.252
RA3L1	2687	2150	570	820	0.381
LA3L1	4129	3303	650	912	0.276

$\bar{X} = 0.338$

The regression line for sampling efficiency relative to % powerhouse flow would be expressed by the formula $Y = 0.000 + .338\ X$, where Y = estimated sampling efficiency and X = % powerhouse flow.

a/ No. released less an assumed 20% post handling, marking, transport, and reservoir related mortality. Since fish marked at Lower Granite Dam were trucked longer distances to the release sites than those at McNary Dam, we apply a larger mortality factor to them.

APPENDIX K

Confidence Interval Estimates for Population Sizes of Steelhead and Yearling Chinook Salmon at McNary Dam

Appendix Table K1.--Procedure for calculating confidence intervals about the annual populations estimates for yearling chinook salmon and steelhead.

1) Calculate the mean powerhouse discharge (%) through the 90th percentile of the migration (Appendix B). Use that value as an estimate of a representative, effective powerhouse discharge during the migration. Calculate the corresponding estimate of collection efficiency from the relationships presented in Figures 2 and 3. Use that estimate to calculate the standard error according to the formula:

$$S_{yi} = \sqrt{S^2_{yx}\left[\frac{1}{n} + \frac{(Xi-\bar{X})^2}{\Sigma x^2}\right]}$$

Yearling chinook salmon	Steelhead
$S^2_{yx} = 65.3$	$S^2_{yx} = 209.3$
Xi = 41.8% powerhouse flow	$Xi = 45.0$
$\Sigma x^2 = 4,379$	$\Sigma x^2 = 42,477$
$n = 21$	$n = 33$
$\bar{X} = 5.5$	$X = 55.2$
$S_{\hat{y}i} = 2.27$	$S_{\hat{y}i} = 2.53$

2) Confidence intervals (95%) for collection efficiencies were calculated as:

CI = representative collection efficiency for the migration $\pm$ t ($S_{\hat{y}i}$)

3) Upper and lower 95% limits for collection efficiency are then used to calculate the corresponding population estimates at those levels.

Yearling chinook salmon	Steelhead
95% CI = 12.9 to 21.7% CE	95% CI = 15.7 to 26.0% CE
Population est:	Population est:
Upper = 5.3 million	Upper = 2.0 million
Lower = 3.0 million	Lower = 1.2 million

APPENDIX G

Mark Release Summary, 1982

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA	+J	1			5		MCNARY D	BIGGS RAMP	335	820506	820506	1000		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	LA	+J	3			5		MCNARY D	BIGGS RAMP	335	820507	820507	1000		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	RA	+J	1			5		MCNARY D	BIGGS RAMP	335	820520	820520	404		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	RA	+J	1			6		MCNARY D	BIGGS RAMP	335	820520	820520	57			
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	LA	+N	1			5		MCNARY D	HORSETHIEF LK	311	820508	820508	1002		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	LA	+N	3			5		MCNARY D	BIGGS GRAIN DOCK	334	820514	820514	946		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	RA	+N	1			5		MCNARY D	JOHN DAY TAIL	346	820521	820521	472		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	RA	+N	1			6		MCNARY D	JOHN DAY TAIL	346	820521	820521	406			
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	LA	+T	1			5		MCNARY D	JOHN DAY TAIL	346	820516	820516	511		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	LA	+T	3			5		MCNARY D	JOHN DAY TAIL	346	820515	820515	936		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	RA	+T	1			5		MCNARY D	JOHN DAY TAIL	346	820522	820522	575		13	
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	RA	+T	1			6		MCNARY D	JOHN DAY TAIL	346	820522	820522	396			
					SLUICEWAY BYPASS EFFICIENCY@THE DALLES D											
	LA	+U	1			9		MCNARY D	MCNARY TAIL	469	820817	820817	3450			
*					JOHN DAY EFFICIENCY				(231615)							
	LA	+U	2			9		MCNARY D	MCNARY TAIL	469	820831	820831	1594			
*					JOHN DAY EFFICIENCY				(231615)							
	LA	+U	3			9		MCNARY D	MCNARY TAIL	469	820824	820824	1467			
*					JOHN DAY EFFICIENCY				(231615)							

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA		+U	4		9		MCNARY D	MCNARY TAIL	469	820303	820303	4575			
*					JOHN DAY EFFICIENCY				(231615)							
	LA		+Y	1		9		MCNARY D	MCNARY TAIL	469	820810	820810	3000			
*					JOHN DAY EFFICIENCY				(231615)							
	LA		+Y	2		9		MCNARY D	MCNARY TAIL	469	820820	820820	3005			
*					JOHN DAY EFFICIENCY				(231615)							
	LA		+Y	3		9		MCNARY D	MCNARY TAIL	469	820813	820813	2571			
*					JOHN DAY EFFICIENCY				(231615)							
	LA		+Y	4		9		MCNARY D	MCNARY TAIL	469	820827	820827	3581			
*					JOHN DAY EFFICIENCY				(231615)							
	LA	13	2		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820315	820319	25			
*					WILD STOCK EVAL				(072353)							
	LA	13	4		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820509	820515	18			
*					WILD STOCK EVAL				(072353)							
	LD	13	2		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820322	820326	73			
*					WILD STOCK EVAL				(072353)							
	LD	13	3		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820418	820424	50			
*					WILD STOCK EVAL				(072353)							
	RA	13	1		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820308	820312	31			
*					WILD STOCK EVAL				(072353)							
	RA	13	2		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820405	820409	331			
*					WILD STOCK EVAL				(072353)							
	RA	13	3		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820502	820508	16			
*					WILD STOCK EVAL				(072353)							
	RD	13	1		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820301	820305	7			
*					WILD STOCK EVAL				(072353)							
	RD	13	2		AD	5		JOHN DAY R	JOHN DAY R@RM 175	629	820329	820402	96			
*					WILD STOCK EVAL				(072353)							
	LA	2	1			6		LO GRANITE D	LIT GOOSE TAIL	633	820428	820428	2823			
					LO GRANITE EFFICIENCY											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE			REMARKS							
	LA	2	2			6	LO GRANITE D	LIT GOOSE TAIL	633	820505	820505	4696			
					LO GRANITE EFFICIENCY										
	LA	2	3			6	LO GRANITE D	LIT GOOSE TAIL	633	820512	820512	4109			
					LO GRANITE EFFICIENCY										
	LA	2	4			6	LO GRANITE D	LIT GOOSE TAIL	633	820519	820519	4030			
					LO GRANITE EFFICIENCY										
	RA	2	1			6	LO GRANITE D	LIT GOOSE TAIL	633	820429	820429	5604			
					LO GRANITE EFFICIENCY										
	RA	2	2			6	LO GRANITE D	LIT GOOSE TAIL	633	820506	820506	3518			
					LO GRANITE EFFICIENCY										
	RA	2	3			6	LO GRANITE D	LIT GOOSE TAIL	633	820513	820513	4171			
					LO GRANITE EFFICIENCY										
	RA	2	4			6	LO GRANITE D	LIT GOOSE TAIL	633	820526	820526	2004			
					LO GRANITE EFFICIENCY										
	LO	2T	1			5	DWORSHAK HAT	LO GRANITE D	693	820409	820409	2000			
					UNIV OF IDAHO										
	RA	2T	1			5	DWORSHAK HAT	N FK CLEARWATER	809	820518	820518	100			
					UNIV OF IDAHO										
	RD	2T	1			5	DWORSHAK HAT	N FK CLEARWATER	809	820420	820420	100			
					UNIV OF IDAHO										
	RD	2T	1			6	DWORSHAK HAT	N FK CLEARWATER	809	820518	820518	100			
					UNIV OF IDAHO										
	RD	2T	3			5	DWORSHAK HAT	N FK CLEARWATER	809	820505	820505	100			
					UNIV OF IDAHO										
	RD	2T	3			6	DWORSHAK HAT	N FK CLEARWATER	809	820602	820602	100			
					UNIV OF IDAHO										
	LA	3	1			5	MCNARY D	PORT KELLY ORE	501	820429	820429	488			
					MCNARY EFFICIENCY										
	LA	3	1			6	MCNARY D	PORT KELLY ORE	501	820429	820429	312			
					MCNARY EFFICIENCY										

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK PURPOSE OF RELEASE	SP	BY HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA	3	2		MCNARY EFFICIENCY	5	MCNARY D	PORT KELLY WASH	501	820430	820430	1460			
	LA	3	2		MCNARY EFFICIENCY	6	MCNARY D	PORT KELLY WASH	501	820430	820430	681			
	LA	3	3		MCNARY EFFICIENCY	5	MCNARY D	PORT KELLY ORE	501	820501	820501	1261			
	LA	3	3		MCNARY EFFICIENCY	6	MCNARY D	PORT KELLY ORE	501	820501	820501	405			
	LA	3	4		MCNARY EFFICIENCY	5	MCNARY D	PORT KELLY ORE	501	820502	820502	1577			
	LA	3	4		MCNARY EFFICIENCY	6	MCNARY D	PORT KELLY ORE	501	820502	820502	505			
	LD	3	2		MCNARY EFFICIENCY	5	MCNARY D	PORT KELLY ORE	501	820516	820516	607			
	LD	3	2		MCNARY EFFICIENCY	6	MCNARY D	PORT KELLY ORE	501	820516	820516	595			
	LD	3	3		MCNARY EFFICIENCY	5	MCNARY D	PORT KELLY ORE	501	820517	820517	261			
	LD	3	3		MCNARY EFFICIENCY	6	MCNARY D	PORT KELLY ORE	501	820517	820517	280			
	LD	3	4		MCNARY EFFICIENCY	5	MCNARY D	PORT KELLY ORE	501	820518	820518	339			
	LD	3	4		MCNARY EFFICIENCY	6	MCNARY D	PORT KELLY ORE	501	820518	820518	362			
	RA	3	1		MCNARY EFFICIENCY	5	MCNARY D	PORT KELLY ORE	501	820505	820505	1512			
	RA	3	1		MCNARY EFFICIENCY	6	MCNARY D	PORT KELLY ORE	501	820505	820505	540			
	RA	3	2		MCNARY EFFICIENCY	5	MCNARY D	PORT KELLY ORE	501	820513	820513	287			

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	RA	3	2			6		MCNARY D	PORT KELLY ORE	501	820513	820513	500			
					MCNARY EFFICIENCY											
	RA	3	3			5		MCNARY D	PORT KELLY ORE	501	820509	820509	1510			
					MCNARY EFFICIENCY											
	RA	3	3			6		MCNARY D	PORT KELLY ORE	501	820509	820509	598			
					MCNARY EFFICIENCY											
	RA	3	4			5		MCNARY D	PORT KELLY ORE	501	820510	820510	668			
					MCNARY EFFICIENCY											
	RA	3	4			6		MCNARY D	PORT KELLY ORE	501	820510	820510	356			
					MCNARY EFFICIENCY											
	RD	3	1			4		MCNARY D	PORT KELLY ORE	501	820523	820523	413			
					MCNARY EFFICIENCY											
	RD	3	1			5		MCNARY D	PORT KELLY ORE	501	820523	820523	375			
					MCNARY EFFICIENCY											
	RD	3	1			6		MCNARY D	PORT KELLY ORE	501	820523	820523	367			
					MCNARY EFFICIENCY											
	RD	3	2			4		MCNARY D	PORT KELLY ORE	501	820524	820524	359			
					MCNARY EFFICIENCY											
	RD	3	2			5		MCNARY D	PORT KELLY ORE	501	820524	820524	233			
					MCNARY EFFICIENCY											
	RD	3	2			6		MCNARY D	PORT KELLY ORE	501	820524	820524	367			
					MCNARY EFFICIENCY											
	RD	3	3			4		MCNARY D	PORT KELLY ORE	501	820525	820525	231			
					MCNARY EFFICIENCY											
	RD	3	3			5		MCNARY D	PORT KELLY ORE	501	820525	820525	133			
					MCNARY EFFICIENCY											
	RD	3	3			6		MCNARY D	PORT KELLY ORE	501	820525	820525	196			
					MCNARY EFFICIENCY											
	RD	3	4			4		MCNARY D	PORT KELLY ORE	501	820526	820526	223			
					MCNARY EFFICIENCY											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE			REMARKS							
	RD	3	4			5	MCNARY D	PORT KELLY ORE	501	820526	820526	141			
					MCNARY EFFICIENCY										
	RD	3	4			6	MCNARY D	PORT KELLY ORE	501	820526	820526	166			
					MCNARY EFFICIENCY										
	RD	4	1			5	RAPID R HAT	RAPID R HAT	967	820327	820327	11072		28	
*					TIMING TO LO GRANITE DAM			(102414;102415)							
	RD	4	1			6	HAGERMAN HAT	PAHSIMEROI R	1311	820510	820510	6950		3	
					TIMING TO LO GRANITE DAM										
	LA	5	1			4	TURTLE ROCK PD	ROCK ISLAND D	725	820412	820412	3050			
					CHELAN PUD										
	LA	5	1			6	CHELAN HAT	ROCK ISLAND D	725	820413	820413	3120			
					CHELAN PUD										
	LA	5	2			4	TURTLE ROCK PD	ROCK ISLAND D	725	820519	820519	3822			
					CHELAN PUD										
	LA	5	2			6	CHELAN HAT	ROCK ISLAND D	725	820519	820519	2747			
					CHELAN PUD										
	LA	5	3			4	TURTLE ROCK PD	ROCK ISLAND D	725	820414	820414	3082			
					CHELAN PUD										
	LA	5	3			6	CHELAN HAT	ROCK ISLAND D	725	820414	820414	3139			
					CHELAN PUD										
	LA	5	4			4	TURTLE ROCK PD	ROCK ISLAND D	725	820413	820413	3104			
					CHELAN PUD										
	LA	5	4			6	CHELAN HAT	ROCK ISLAND D	725	820412	820412	3102			
					CHELAN PUD										
	RA	5	1			4	TURTLE ROCK PD	ROCK ISLAND D	725	820519	820519	864			
					CHELAN PUD										
	RA	5	1			5	PR RAPID SPAW CH	ROCK ISLAND D	725	820412	820412	5636			
					CHELAN PUD										
	RA	5	2			5	PR RAPID SPAW CH	ROCK ISLAND D	725	820519	820519	2447			
					CHELAN PUD										

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	RA	5	3			5	PR	RAPID SPAW CH	ROCK ISLAND D	725	820414	820414	4054			
					CHELAN PUD											
	RA	5	4			5	PR	RAPID SPAW CH	ROCK ISLAND D	725	820413	820413	4052			
					CHELAN PUD											
	LA	AN	1			5		MCNARY D	PORT KELLY WASH	501	820429	820429	492			
					MCNARY EFFICIENCY											
	LA	AN	1			6		MCNARY D	PORT KELLY WASH	501	820429	820429	314			
					MCNARY EFFICIENCY											
	LA	AN	2			5		MCNARY D	PORT KELLY ORE	501	820430	820430	1377			
					MCNARY EFFICIENCY											
	LA	AN	2			6		MCNARY D	PORT KELLY ORE	501	820430	820430	631			
					MCNARY EFFICIENCY											
	LA	AN	3			5		MCNARY D	PORT KELLY WASH	501	820501	820501	1257			
					MCNARY EFFICIENCY											
	LA	AN	3			6		MCNARY D	PORT KELLY WASH	501	820501	820501	401			
					MCNARY EFFICIENCY											
	LA	AN	4			5		MCNARY D	PORT KELLY WASH	501	820502	820502	1577			
					MCNARY EFFICIENCY											
	LA	AN	4			6		MCNARY D	PORT KELLY WASH	501	820502	820502	502			
					MCNARY EFFICIENCY											
	LD	AN	2			5		MCNARY D	PORT KELLY WASH	501	820516	820516	607			
					MCNARY EFFICIENCY											
	LD	AN	2			6		MCNARY D	PORT KELLY WASH	501	820516	820516	594			
					MCNARY EFFICIENCY											
	LD	AN	3			5		MCNARY D	PORT KELLY ORE	501	820517	820517	258			
					MCNARY EFFICIENCY											
	LD	AN	3			6		MCNARY D	PORT KELLY ORE	501	820517	820517	283			
					MCNARY EFFICIENCY											
	LD	AN	4			5		MCNARY D	PORT KELLY WASH	501	820518	820518	340			
					MCNARY EFFICIENCY											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	LD	AN	4			6		MCNARY D	PORT KELLY WASH	501	820518	820518	361			
					MCNARY EFFICIENCY											
	RA	AN	1			5		MCNARY D	PORT KELLY WASH	501	820505	820505	1516			
					MCNARY EFFICIENCY											
	RA	AN	1			6		MCNARY D	PORT KELLY WASH	501	820505	820505	530			
					MCNARY EFFICIENCY											
	RA	AN	2			5		MCNARY D	PORT KELLY WASH	501	820513	820513	285			
					MCNARY EFFICIENCY											
	RA	AN	2			6		MCNARY D	PORT KELLY WASH	501	820513	820513	502			
					MCNARY EFFICIENCY											
	RA	AN	3			5		MCNARY D	PORT KELLY WASH	501	820509	820509	1510			
					MCNARY EFFICIENCY											
	RA	AN	3			6		MCNARY D	PORT KELLY WASH	501	820509	820509	598			
					MCNARY EFFICIENCY											
	RA	AN	4			5		MCNARY D	PORT KELLY WASH	501	820510	820510	669			
					MCNARY EFFICIENCY											
	RA	AN	4			6		MCNARY D	PORT KELLY WASH	501	820510	820510	392			
					MCNARY EFFICIENCY											
	RD	AN	1			4		MCNARY D	PORT KELLY WASH	501	820523	820523	417			
					MCNARY EFFICIENCY											
	RD	AN	1			5		MCNARY D	PORT KELLY WASH	501	820523	820523	375			
					MCNARY EFFICIENCY											
	RD	AN	1			6		MCNARY D	PORT KELLY WASH	501	820523	820523	374			
					MCNARY EFFICIENCY											
	RD	AN	2			4		MCNARY D	PORT KELLY WASH	501	820524	820524	361			
					MCNARY EFFICIENCY											
	RD	AN	2			5		MCNARY D	PORT KELLY WASH	501	820524	820524	231			
					MCNARY EFFICIENCY											
	RD	AN	2			6		MCNARY D	PORT KELLY WASH	501	820524	820524	367			
					MCNARY EFFICIENCY											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE			REMARKS							
	RD	AN	3			4	MCNARY D	PORT KELLY WASH	501	820525	820525	231			
					MCNARY EFFICIENCY										
	RD	AN	3			5	MCNARY D	PORT KELLY WASH	501	820525	820525	131			
					MCNARY EFFICIENCY										
	RD	AN	3			6	MCNARY D	PORT KELLY WASH	501	820525	820525	195			
					MCNARY EFFICIENCY										
	RD	AN	4			4	MCNARY D	PORT KELLY ORE	501	820526	820526	223			
					MCNARY EFFICIENCY										
	RD	AN	4			5	MCNARY D	PORT KELLY ORE	501	820526	820526	141			
					MCNARY EFFICIENCY										
	RD	AN	4			6	MCNARY D	PORT KELLY ORE	501	820526	820526	166			
					MCNARY EFFICIENCY										
	LA	AR	3		AD	5	JOHN DAY R	N FK JOHN D@RM 60	744	820411	820417	184			
					WILD STOCK EVAL			(072661)							
	LD	AR	2		AD	5	JOHN DAY R	N FK JOHN D@RM 60	744	820322	820326	30			
					WILD STOCK EVAL			(072661)							
	LD	AR	3		AD	5	JOHN DAY R	N FK JOHN D@RM 60	744	820418	820424	189			
					WILD STOCK EVAL			(072661)							
	RA	AR	2		AD	5	JOHN DAY R	N FK JOHN D@RM 60	744	820405	820409	14			
					WILD STOCK EVAL			(072661)							
	RD	AR	2		AD	5	JOHN DAY R	N FK JOHN D@RM 60	744	820329	820402	2			
					WILD STOCK EVAL			(072661)							
	LA	D	1			9	JOHN DAY RES	CROW BUTTE@RM 267	430	820729	820729	246			
					SUMMER FLOW STUDY										
	LA	D	2			9	JOHN DAY RES	ARLINGTON@RM 242	389	820730	820730	939			
					SUMMER FLOW STUDY										
	LA	D	3			9	JOHN DAY RES	BLALOCK@RM 232	373	820803	820803	281			
					SUMMER FLOW STUDY										
	LA	D	4			9	JOHN DAY RES	GOODNOE@RM 222	357	820804	820804	714			
					SUMMER FLOW STUDY										

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LD	D	1			9	JOHN DAY RES	JOHN D FOREBAY	348	820805	820805	433			
					SUMMER FLOW STUDY										
	LD	D	2			9	JOHN DAY RES	WILLOW CR@RM 253	407	820812	820812	401			
					SUMMER FLOW STUDY										
	LD	D	3			9	JOHN DAY RES	ARLINGTON@RM 242	389	820813	820813	311			
					SUMMER FLOW STUDY										
	LD	D	4			9	JOHN DAY RES	BLALOCK@RM 232	373	820825	820825	359			
					SUMMER FLOW STUDY										
	LP	D	1			9	JOHN DAY RES	GOODNOE@RM 222	357	820826	820826	147			
					SUMMER FLOW STUDY										
	LP	D	2			9	JOHN DAY RES	WILLOW CR@RM 253	407	820831	820831	300			
					SUMMER FLOW STUDY										
	LP	D	3			9	JOHN DAY RES	CROW BUTTE@RM 267	430	820902	820902	244			
					SUMMER FLOW STUDY										
	LP	D	4			9	JOHN DAY RES	ARLINGTON@RM 242	389	820903	820903	215			
					SUMMER FLOW STUDY										
	RA	D	1			9	JOHN DAY RES	BLALOCK@RM 232	373	820624	820624	334			
					SUMMER FLOW STUDY										
	RA	D	2			9	JOHN DAY RES	GOODNOE@RM 222	357	820625	820625	657			
					SUMMER FLOW STUDY										
	RA	D	3			9	JOHN DAY RES	WILLOW CR@RM 253	407	820626	820626	118			
					SUMMER FLOW STUDY										
	RA	D	4			9	JOHN DAY RES	CROW BUTTE@RM 267	430	820701	820701	100			
					SUMMER FLOW STUDY										
	RD	D	1			9	JOHN DAY RES	ARLINGTON@RM 242	389	820702	820702	73			
					SUMMER FLOW STUDY										
	RD	D	2			9	JOHN DAY RES	BLALOCK@RM 232	373	820707	820707	41			
					SUMMER FLOW STUDY										
	RD	D	3			9	JOHN DAY RES	GOODNOE@RM 222	357	820708	820708	479			
					SUMMER FLOW STUDY										

RELEASE DATA 1982

MAG TAG MULT	LOC	DR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE			REMARKS							
	RD	D	4			9	JOHN DAY RES	ARLINGTON@RM 242	389	820716	820716	1916			
					SUMMER FLOW STUDY										
	RP	D	1			9	JOHN DAY RES	BLALOCK@RM 232	373	820720	820720	262			
					SUMMER FLOW STUDY										
	RP	D	2			9	JOHN DAY RES	GOODNOE@RM 222	357	820721	820721	419			
					SUMMER FLOW STUDY										
	RP	D	3			9	JOHN DAY RES	JOHN D FOREBAY	348	820722	820722	1136			
					SUMMER FLOW STUDY										
	RP	D	4			9	JOHN DAY RES	WILLOW CR@RM 253	407	820727	820727	345			
					SUMMER FLOW STUDY										
	LA	E	2		AD	5	JOHN DAY R	M FK JOHN D@RM 31	747	820315	820319	8			
					WILD STOCK EVAL			(072660)							
	LA	E	4		AD	5	JOHN DAY R	M FK JOHN D@RM 31	747	820509	820515	5			
					WILD STOCK EVAL			(072660)							
	LO	E	2		AD	5	JOHN DAY R	M FK JOHN D@RM 31	747	820322	820326	10			
					WILD STOCK EVAL			(072660)							
	LO	E	3		AD	5	JOHN DAY R	M FK JOHN D@RM 31	747	820418	820424	2			
					WILD STOCK EVAL			(072660)							
	RA	E	1		AD	5	JOHN DAY R	M FK JOHN D@RM 31	747	820308	820312	8			
					WILD STOCK EVAL			(072660)							
	RA	E	2		AD	5	JOHN DAY R	M FK JOHN D@RM 31	747	820405	820409	20			
					WILD STOCK EVAL			(072660)							
	LA	F	1			6	LO GRANITE D	LO GRANITE RES	699	820426	820426	7167			
					LO GRANITE EFFICIENCY										
	LA	F	2			6	LO GRANITE D	CLARKSTON WASH	742	820503	820503	5316			
					LO GRANITE EFFICIENCY										
	LA	F	3			6	LO GRANITE D	CLARKSTON WASH	742	820510	820510	4474			
					LO GRANITE EFFICIENCY										
	LA	F	4			6	LO GRANITE D	CLARKSTON WASH	742	820518	820518	3069			
					LO GRANITE EFFICIENCY			1524 W/CAUDAL CLIP-1545 WITHOUT							

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	RA	F	1			6		LO GRANITE D	LO GRANITE RES	699	820427	820427	2853			
					LO GRANITE EFFICIENCY											
	RA	F	2			6		LO GRANITE D	CLARKSTON WASH	742	820504	820504	4723			
					LO GRANITE EFFICIENCY											
	RA	F	3			6		LO GRANITE D	CLARKSTON WASH	742	820511	820511	5626			
					LO GRANITE EFFICIENCY											
	LA	GL	1		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820411	820417	61			
*					WILD STOCK EVAL				(072659)							
	LA	GL	2		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820509	820515	6			
*					WILD STOCK EVAL				(072659)							
	LD	GL	1		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820418	820424	49			
*					WILD STOCK EVAL				(072659)							
	RA	GL	3		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820502	820508	11			
*					WILD STOCK EVAL				(072659)							
	RD	GL	1		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820425	820501	17			
*					WILD STOCK EVAL				(072659)							
	LA	H	1			9		MCNARY D	MCNARY TAIL	469	820624	820624	2396			
*					TRANSPORTATION CONTROL				(231609)							
	LA	H	2			9		MCNARY D	MCNARY TAIL	469	820626	820626	3235			
*					TRANSPORTATION CONTROL				(231609)							
	LA	HE	1			9		JOHN DAY RES	GOODNOE@RM 222	357	821027	821027	159			
					SUMMER FLOW STUDY											
	LA	HE	2			9		JOHN DAY RES	JOHN D FOREBAY	348	821028	821028	126			
					SUMMER FLOW STUDY											
	LA	HE	3			9		JOHN DAY RES	WILLOW CR@RM 253	407	821102	821102	162			
					SUMMER FLOW STUDY											
	LA	HE	4			9		JOHN DAY RES	CROW BUTTE@RM 267	430	821103	821103	112			
					SUMMER FLOW STUDY											
	LD	HE	1			9		JOHN DAY RES	ARLINGTON@RM 242	389	821104	821104	83			
					SUMMER FLOW STUDY											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LD	HE	2			9	JOHN DAY RES	BLALOCK@RM 232	373	821109	821109	36			
					SUMMER FLOW STUDY										
	LD	HE	3			9	JOHN DAY RES	GOODNOE@RM 222	357	821110	821110	106			
					SUMMER FLOW STUDY										
	LD	HE	4			9	JOHN DAY RES	JOHN D FOREBAY	348	821111	821111	36			
					SUMMER FLOW STUDY										
	RA	HE	1			9	JOHN DAY RES	GOODNOE@RM 222	357	820909	820909	205			
					SUMMER FLOW STUDY										
	RA	HE	2			9	JOHN DAY RES	GOODNOE@RM 222	357	820930	820930	164			
					SUMMER FLOW STUDY										
	RA	HE	3			9	JOHN DAY RES	JOHN D FOREBAY	348	821001	821001	141			
					SUMMER FLOW STUDY										
	RA	HE	4			9	JOHN DAY RES	WILLOW CR@RM 253	407	821005	821005	230			
					SUMMER FLOW STUDY										
	RD	HE	1			9	JOHN DAY RES	CROW BUTTE@RM 267	430	821006	821006	177			
					SUMMER FLOW STUDY										
	RD	HE	2			9	JOHN DAY RES	BLALOCK@RM 232	373	821013	821013	219			
					SUMMER FLOW STUDY										
	RD	HE	3			9	JOHN DAY RES	GOODNOE@RM 222	357	821014	821014	214			
					SUMMER FLOW STUDY										
	RD	HE	4			9	JOHN DAY RES	JOHN D FOREBAY	348	821015	821015	40			
					SUMMER FLOW STUDY										
	RP	HE	1			9	JOHN DAY RES	WILLOW CR@RM 253	407	821019	821019	187			
					SUMMER FLOW STUDY										
	RP	HE	2			9	JOHN DAY RES	CROW BUTTE@RM 267	430	821020	821020	78			
					SUMMER FLOW STUDY										
	RP	HE	3			9	JOHN DAY RES	ARLINGTON@RM 242	389	821021	821021	43			
					SUMMER FLOW STUDY										
	RP	HE	4			9	JOHN DAY RES	BLALOCK@RM 232	373	821026	821026	80			
					SUMMER FLOW STUDY										

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE			REMARKS							
	LA	I+	1			5	MCNARY D	PORT KELLY ORE	501	820503	820503	1161			
					MCNARY EFFICIENCY										
	LA	I+	1			6	MCNARY D	PORT KELLY ORE	501	820503	820503	501			
					MCNARY EFFICIENCY										
	LA	I+	3			5	MCNARY D	PORT KELLY WASH	501	820504	820504	1446			
					MCNARY EFFICIENCY										
	LA	I+	3			6	MCNARY D	PORT KELLY WASH	501	820504	820504	542			
					MCNARY EFFICIENCY										
	LD	I+	1			5	MCNARY D	PORT KELLY WASH	501	820519	820519	502			
					MCNARY EFFICIENCY										
	LD	I+	1			6	MCNARY D	PORT KELLY WASH	501	820519	820519	566			
					MCNARY EFFICIENCY										
	RA	I+	1			5	MCNARY D	PORT KELLY WASH	501	820511	820511	871			
					MCNARY EFFICIENCY										
	RA	I+	1			6	MCNARY D	PORT KELLY WASH	501	820511	820511	356			
					MCNARY EFFICIENCY										
	RA	I+	3			5	MCNARY D	PORT KELLY WASH	501	820512	820512	661			
					MCNARY EFFICIENCY										
	RA	I+	3			6	MCNARY D	PORT KELLY WASH	501	820512	820512	349			
					MCNARY EFFICIENCY										
	LA	IC	1			9	MCNARY D	MCNARY TAIL	469	820706	820706	461			
*					TRANSPORTATION CONTROL			(231611)							
	LA	IC	2			9	MCNARY D	MCNARY TAIL	469	820727	820727	3262			
*					TRANSPORTATION CONTROL			(231613)							
	LA	IC	3			9	MCNARY D	MCNARY TAIL	469	820713	820713	3055			
*					TRANSPORTATION CONTROL			(231611)							
	LA	IC	4			9	MCNARY D	MCNARY TAIL	469	820729	820729	4500			
*					TRANSPORTATION CONTROL			(231613)							
	LA	ID	1			5	MCNARY D	PORT KELLY ORE	501	820503	820503	1161			
					MCNARY EFFICIENCY										

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	LA	ID	1			6		MCNARY D	PORT KELLY ORE	501	820503	820503	500			
					MCNARY EFFICIENCY											
	LA	ID	3			5		MCNARY D	PORT KELLY ORE	501	820504	820504	1438			
					MCNARY EFFICIENCY											
	LA	ID	3			6		MCNARY D	PORT KELLY ORE	501	820504	820504	539			
					MCNARY EFFICIENCY											
	LD	ID	1			5		MCNARY D	PORT KELLY ORE	501	820519	820519	502			
					MCNARY EFFICIENCY											
	LD	ID	1			6		MCNARY D	PORT KELLY ORE	501	820519	820519	566			
					MCNARY EFFICIENCY											
	RA	ID	1			5		MCNARY D	PORT KELLY ORE	501	820511	820511	879			
					MCNARY EFFICIENCY											
	RA	ID	1			6		MCNARY D	PORT KELLY ORE	501	820511	820511	355			
					MCNARY EFFICIENCY											
	RA	ID	3			5		MCNARY D	PORT KELLY ORE	501	820512	820512	633			
					MCNARY EFFICIENCY											
	RA	ID	3			6		MCNARY D	PORT KELLY ORE	501	820512	820512	348			
					MCNARY EFFICIENCY											
	LA	IF	1			9		MCNARY D	MCNARY TAIL	469	820629	820629	2690			
					TRANSPORTATION CONTROL				(231609)							
	LA	IF	2			9		MCNARY D	MCNARY TAIL	469	820720	820720	5001			
					TRANSPORTATION CONTROL				(231611)							
	LA	IF	3			9		MCNARY D	MCNARY TAIL	469	820701	820701	346			
					TRANSPORTATION CONTROL				(231609)							
	LA	IF	4			9		MCNARY D	MCNARY TAIL	469	820722	820722	2012			
					TRANSPORTATION CONTROL				(231611)							
WHBLLA	LA	IH	3		AD	6		TURTLE ROCK PD	ROCKY REACH RES	762	820413	820422	14155			
					SYSTEMS TEST				(WHBLLA;LAIH3)							
	LA	IJ	1			5		DWORSHAK HAT	N FK CLEARWATER	809	820420	820420	100			
					UNIV OF IDAHO											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA	IJ	1			6		TUCANNON HAT	GRAND RONDE R	793	820507	820514	36000			
*					WASHINGTON STATE				(621650)							
	LA	IJ	2			6		DWORSHAK HAT	N FK CLEARWATER	809	820602	820602	100			
					UNIV OF IDAHO											
	LA	IJ	3			5		DWORSHAK HAT	N FK CLEARWATER	809	820505	820505	100			
					UNIV OF IDAHO											
	LA	IJ	3			6		TUCANNON HAT	LYONS FERRY	600	820518	820520	30000			
*					WASHINGTON STATE				(621650)							
	LA	IJ	4			6		DWORSHAK HAT	N FK CLEARWATER	809	820406	820406	100			
					UNIV OF IDAHO											
	LD	IJ	1			5		DWORSHAK HAT	N FK CLEARWATER	809	820322	820322	100			
					UNIV OF IDAHO											
	LD	IJ	1			6		DWORSHAK HAT	N FK CLEARWATER	809	820322	820322	100			
					UNIV OF IDAHO											
	LD	IJ	2			6		DWORSHAK HAT	N FK CLEARWATER	809	820406	820406	100			
					UNIV OF IDAHO											
	LD	IJ	3			5		DWORSHAK HAT	N FK CLEARWATER	809	820406	820406	100			
					UNIV OF IDAHO											
	LD	IJ	3			6		DWORSHAK HAT	N FK CLEARWATER	809	820420	820420	100			
					UNIV OF IDAHO											
	LD	IJ	4			6		DWORSHAK HAT	N FK CLEARWATER	809	820505	820505	100			
					UNIV OF IDAHO											
	RA	IJ	1			6		DWORSHAK HAT	N FK CLEARWATER	809	820322	820322	100			
					UNIV OF IDAHO											
	RA	IJ	2			6		DWORSHAK HAT	N FK CLEARWATER	809	820406	820406	100			
					UNIV OF IDAHO											
	RA	IJ	3			5		DWORSHAK HAT	N FK CLEARWATER	809	820406	820406	100			
					UNIV OF IDAHO											
	RA	IJ	3			6		DWORSHAK HAT	N FK CLEARWATER	809	820420	820420	100			
					UNIV OF IDAHO											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE / REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RA	IJ	4			6		DWORSHAK HAT	N FK CLEARWATER	809	820505	820505	100			
				UNIV OF IDAHO												
	RD	IJ	1			5		DWORSHAK HAT	N FK CLEARWATER	809	820518	820518	100			
				UNIV OF IDAHO												
	RD	IJ	1			6		DWORSHAK HAT	N FK CLEARWATER	809	820420	820420	100			
				UNIV OF IDAHO												
	RD	IJ	2			6		DWORSHAK HAT	N FK CLEARWATER	809	820505	820505	100			
				UNIV OF IDAHO												
	RD	IJ	3			6		DWORSHAK HAT	N FK CLEARWATER	809	820518	820518	100			
				UNIV OF IDAHO												
	RD	IJ	4			6		DWORSHAK HAT	N FK CLEARWATER	809	820602	820602	100			
				UNIV OF IDAHO												
	LD	IK	1			5	80	LEAVENWORTH	PR RAPID RES	640	820507	820509	9490			
				SYSTEMS TEST												
	LD	IK	3			5	80	LEAVENWORTH	PR RAPID RES	640	820509	820509	10042			
				SYSTEMS TEST												
	RD	IK	1			5	80	LEAVENWORTH	PORT KELLY WASH	501	820508	820508	1542			
				SYSTEMS TEST/MCNARY EFFICIENCY												
	RD	IK	3			5		MCNARY D	PORT KELLY WASH	501	820514	820514	1500			
				MCNARY EFFICIENCY												
	RD	IK	3			5	80	LEAVENWORTH	PORT KELLY WASH	501	820514	820514	1580			
				MCNARY EFFICIENCY												
	LD	IL	1			5	80	LEAVENWORTH	PATEROS FERRY	839	820422	820422	55402			
				SYSTEMS TEST												
	LD	IL	3			5	80	LEAVENWORTH	PATEROS FERRY	839	820426	820426	54115			
				SYSTEMS TEST												
	RD	IL	1			5	80	LEAVENWORTH	PORT KELLY WASH	501	820526	820526	1560			
				SYSTEMS TEST/MCNARY EFFICIENCY												
	LA	IM	1			9		MCNARY D	MCNARY TAIL (231611)	469	820715	820715	4323			
				TRANSPORTATION CONTROL												

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	LA	IM	2			9	MCNARY D	MCNARY TAIL (231613)	469	820803	820803	1007			
*	TRANSPORTATION CONTROL														
	LA	IM	3			9	MCNARY D	MCNARY TAIL (231611)	469	820717	820717	4012			
*	TRANSPORTATION CONTROL														
	LA	IM	4			9	MCNARY D	MCNARY TAIL (231613)	469	820805	820805	2383			
*	TRANSPORTATION CONTROL														
	LO	IN	1			5	80 LEAVENWORTH	PR RAPID RES	640	820503	820503	10090			
	SYSTEMS TEST														
	LO	IN	3			5	80 LEAVENWORTH	PR RAPID RES	640	820505	820505	10119			
	SYSTEMS TEST														
	RD	IN	1			5	80 LEAVENWORTH	PORT KELLY WASH	501	820506	820506	1564			
	SYSTEMS TEST/MCNARY EFFICIENCY														
	LO	IR	1			5	80 LEAVENWORTH	PR RAPID RES	640	820513	820513	10010			
	SYSTEMS TEST														
	LO	IR	3			5	80 LEAVENWORTH	PR RAPID RES	640	820517	820517	10146			
	SYSTEMS TEST														
WH8LOR	RA	IR	1	AD		6	WELLS SPAW CH	BLW PR RAPID D (WH8LOR;RAIR1)	638	820420	820424	24948			
*	SYSTEMS TEST														
	RD	IR	1			5	80 LEAVENWORTH	PORT KELLY WASH	501	820510	820510	1575			
	SYSTEMS TEST/MCNARY EFFICIENCY														
	LA	IS	1			6	LO GRANITE D	PORT KELLY ORE	501	820430	820430	2000			
	LO GRANITE EFFICIENCY														
	LA	IS	2			6	LO GRANITE D	PORT KELLY WASH	501	820507	820507	2781			
	LO GRANITE EFFICIENCY														
	LA	IS	3			6	LO GRANITE D	PORT KELLY WASH	501	820514	820514	2125			
	LO GRANITE EFFICIENCY														
	LA	IS	4			6	LO GRANITE D	PORT KELLY WASH	501	820521	820521	2096			
	LO GRANITE EFFICIENCY														
	LP	IS	1			6	LO GRANITE D	PORT KELLY WASH	501	820527	820527	2111			
	LO GRANITE EFFICIENCY														

RELEASE DATA 1982

MAG TAG / MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	RA	IS	1			6		LO GRANITE D	PORT KELLY WASH	501	820430	820430	2040			
					LO GRANITE EFFICIENCY											
	RA	IS	2			6		LO GRANITE D	PORT KELLY ORE	501	820507	820507	2293			
					LO GRANITE EFFICIENCY											
	RA	IS	3			6		LO GRANITE D	PORT KELLY ORE	501	820514	820514	2128			
					LO GRANITE EFFICIENCY											
	RA	IS	4			6		LO GRANITE D	PORT KELLY ORE	501	820521	820521	1891			
					LO GRANITE EFFICIENCY											
	RP	IS	1			6		LO GRANITE D	PORT KELLY ORE	501	820527	820527	2038			
					LO GRANITE EFFICIENCY											
	RD	IU	1		AD	5	80	KOOSKIA HAT	CLEAR CR	868	820416	820416	6100		21	
*					SIZE AT RELEASE				(050530)							
	RD	IU	1		AD	6		DWORSHAK HAT	N FK CLEARWATER	809	820503	820503	11329		7	
*					SYSTEM 1-CONTRIBUTION AND TIMING				(051024)							
	RD	IU	3		AD	5	80	KOOSKIA HAT	CLEAR CR	868	820416	820416	5275		9	
*					SIZE AT RELEASE				(050659)							
	RD	IU	3		AD	6		DWORSHAK HAT	N FK CLEARWATER	809	820503	820503	11192		7	
*					SYSTEM 3-CONTRIBUTION AND TIMING				(051025)							
	LD	IV	1			5	80	LEAVENWORTH	ROCK ISLAND D	725	820506	820506	28084			
					SYSTEMS TEST											
	LD	IV	3			5	80	LEAVENWORTH	ROCK ISLAND D	725	820508	820508	28176			
					SYSTEMS TEST											
WHBLWH	RA	IV	1		AD	6		WELLS SPAW CH	METHOW R@RM 28	883	820419	820423	24952			
*					SYSTEMS TEST				(WHBLWH;RAIV1)							
	RD	IV	1			5	80	LEAVENWORTH	PORT KELLY WASH	501	820517	820517	1549			
					SYSTEMS TEST/MCNARY EFFICIENCY											
	LD	IX	1			5	80	LEAVENWORTH	PR RAPID RES	640	820511	820511	9674			
					SYSTEMS TEST											
	LD	IX	3			5	80	LEAVENWORTH	PR RAPID RES	640	820515	820515	9883			
					SYSTEMS TEST											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RD	IX	1			5	80	LEAVENWORTH	PORT KELLY WASH	501	820504	820504	1610			
					SYSTEMS TEST/MCNARY EFFICIENCY											
	LA	IY	2		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820315	820319	2			
*					WILD STOCK EVAL				(072658)							
	LA	IY	3		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820411	820417	11			
*					WILD STOCK EVAL				(072658)							
	LD	IY	1			5	80	LEAVENWORTH	ROCK ISLAND D	725	820428	820428	28092			
					SYSTEMS TEST											
	LD	IY	2		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820322	820326	2			
*					WILD STOCK EVAL				(072658)							
	LD	IY	3			5	80	LEAVENWORTH	ROCK ISLAND D	725	820502	820502	28586			
					SYSTEMS TEST											
	LD	IY	3		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820418	820424	28			
*					WILD STOCK EVAL				(072658)							
	LD	IY	4		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820518	820520	2			
*					WILD STOCK EVAL				(072658)							
	RA	IY	1		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820308	820312	1			
*					WILD STOCK EVAL				(072658)							
	RA	IY	2		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820405	820409	6			
*					WILD STOCK EVAL				(072658)							
	RA	IY	4		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820509	820515	1			
*					WILD STOCK EVAL				(072658)							
	RD	IY	1			5	80	LEAVENWORTH	PORT KELLY WASH	501	820520	820520	1621			
					SYSTEMS TEST/MCNARY EFFICIENCY											
	RD	IY	2		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820329	820402	5			
*					WILD STOCK EVAL				(072658)							
	RD	IY	3			5	80	LEAVENWORTH	PORT KELLY WASH	501	820512	820512	1559			
					SYSTEMS TEST/MCNARY EFFICIENCY											
	RD	IY	3		AD	5		JOHN DAY R	JOHN DAY R@RM 22	384	820425	820501	20			
*					WILD STOCK EVAL				(072658)							

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	LD	IZ	1			5	80	LEAVENWORTH	PATEROS FERRY	839	820430	820430	55332			
					SYSTEMS TEST											
	LD	IZ	3			5	80	LEAVENWORTH	PATEROS FERRY	839	820504	820504	55742			
					SYSTEMS TEST											
	RD	IZ	1			5	80	LEAVENWORTH	PORT KELLY WASH	501	820523	820523	1584			
					SYSTEMS TEST/MCNARY EFFICIENCY											
	LA	J	1			5		KOOSKIA HAT	N FK CLEARWATER	809	820517	820517	100			
					UNIV OF IDAHO											
	LA	J	2			5		KOOSKIA HAT	N FK CLEARWATER	809	820602	820602	100			
					UNIV OF IDAHO											
	LA	J	3			5		KOOSKIA HAT	N FK CLEARWATER	809	820615	820615	100			
					UNIV OF IDAHO											
	LD	J	1			6		DWORSHAK HAT	N FK CLEARWATER	809	820518	820518	100			
					UNIV OF IDAHO											
	LD	J	1			9		HAGERMAN HAT	N FK CLEARWATER	809	820615	820615	100			
					UNIV OF IDAHO											
	LD	J	2			6		DWORSHAK HAT	N FK CLEARWATER	809	820602	820602	100			
					UNIV OF IDAHO											
	RA	J	1	AD		9		HAGERMAN HAT	N FK CLEARWATER	809	820603	820603	100			
					UNIV OF IDAHO											
	RA	J	2			9		HAGERMAN HAT	N FK CLEARWATER	809	820508	820508	100			
					UNIV OF IDAHO											
	RA	J	3			9		HAGERMAN HAT	N FK CLEARWATER	809	820508	820508	100			
					UNIV OF IDAHO											
	RA	J	4			9		HAGERMAN HAT	N FK CLEARWATER	809	820615	820615	100			
					UNIV OF IDAHO											
	RD	J	1			6		DWORSHAK HAT	N FK CLEARWATER	809	820322	820322	100			
					UNIV OF IDAHO											
	RD	J	1			9		HAGERMAN HAT	N FK CLEARWATER	809	820508	820508	100			
					UNIV OF IDAHO											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	ROT	CLIP	OTHER PURPOSE OF RELEASE	MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE REMARKS	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
	RD	J	2		UNIV OF IDAHO		6		DWORSHAK HAT	N FK CLEARWATER	809	820406	820406	100			
	RD	J	2		UNIV OF IDAHO		9		HAGERMAN HAT	N FK CLEARWATER	809	820518	820518	100			
	RD	J	3		UNIV OF IDAHO		6		DWORSHAK HAT	N FK CLEARWATER	809	820420	820420	100			
	RD	J	3		UNIV OF IDAHO		9		HAGERMAN HAT	N FK CLEARWATER	809	820603	820603	100			
	RD	J	4		UNIV OF IDAHO		6		DWORSHAK HAT	N FK CLEARWATER	809	820505	820505	100			
	RD	J	4		UNIV OF IDAHO		9		HAGERMAN HAT	N FK CLEARWATER	809	820603	820603	100			
231602 *	LA	K	1	AD	HOMING CONTROL #3		6		DWORSHAK HAT	N FK CLEARWATER (231602;LAK1)	809	820519	820519	31714			
231604 *	LA	K	2	AD	HOMING CONTROL #2		6		DWORSHAK HAT	N FK CLEARWATER (231604;LAK2)	809	820430	820430	31048	186	7	
230606 *	LA	K	3	AD	HOMING CONTROL #1		6		DWORSHAK HAT	N FK CLEARWATER (230606;LAK3)	809	820419	820419	29838			
	LD	L	3	AD	UNIV OF IDAHO		9		HAGERMAN HAT	N FK CLEARWATER	809	820518	820518	100			
231601 *	RA	L	1	AD	HOMING TRUCKED #4		6		DWORSHAK HAT	BEACON ROCK (231601;RAL1)	227	820531	820531	35012			
231605 *	RA	L	2	AD	HOMING TRUCKED #2		6		DWORSHAK HAT	BEACON ROCK (231605;RAL2)	227	820430	820430	36684	189	7	
230607 *	RA	L	3	AD	HOMING TRUCKED #1		6		DWORSHAK HAT	BEACON ROCK (230607;RAL3)	227	820419	820419	36454			
230608 *	RA	L	4	AD	HOMING TRUCKED #1A		6		DWORSHAK HAT	BEACON ROCK (230608;RAL4)	227	820419	820419	38278			
	LD	PI	1		MCKENZIE MORTALITY		5	80	OAKRIDGE HAT	MCKENZIE R@RM 44	508	820329	820329	30816		10	

RELEASE DATA 1982

MAG TAG MULT	LOC	OR	ROT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	LD	PI	3			5	80	OAKRIDGE HAT	MCKENZIE@LEABURG	492	820329	820329	31341		11	
					MCKENZIE MORTALITY											
	LD	PI	4			5	80	OAKRIDGE HAT	MCKENZIE ABV LEABU	493	820329	820329	32306		11	
					MCKENZIE MORTALITY											
	RA	PI	1			9	81	COWLITZ HAT	BIG WH REAR PD	273	821121	821121	171460		30	
					TIMING											
	RA	PI	2	AD		9	81	COWLITZ HAT	BIG WH REAR PD	273	821121	821121	149066		30	
					TIMING				(050952,050953,051116)							
	RD	PI	1			5	80	OAKRIDGE HAT	MCKENZIE R@RM 24	476	820329	820329	31172		13	
					MCKENZIE MORTALITY											
	RD	PI	2			5	80	OAKRIDGE HAT	MCKENZIE R@RM 26	480	820329	820329	30877		11	
					MCKENZIE MORTALITY											
231603	RA	PP	1	AD		6		DWORSHAK HAT	BEACON ROCK	227	820519	820519	33161			
					HOMING TRUCKED #3				(231603;RAPP1)							
051027	LD	SU	1			6	80	DWORSHAK HAT	N FK CLEARWATER	809	820505	820506	33225		5	
					SYSTEM 2-CONTRIBUTION				(051027;LDSU1)							
	RD	SU	1			6		DWORSHAK HAT	S FK CLEARWATER	1003	820505	820506	11823		9	
					RELEASE SITE COMP				(051026)							
	RD	SU	2			5		MCCALL HAT	S FK SALMON R	1153	820408	820410	12684		18	
					TIMING				(102413)							
	RD	SU	4			5		MCCALL HAT	S FK SALMON R	1153	820408	820410	8512		18	
					TIMING				(102412)							
621608	LA	T	2	AD		6	80	TUCANNON HAT	GRAND RONDE R	793	810504	810515	106806		7	
					IDENT BROOD STK FOR NEW LYONS FERRY HAT				(621608;LAT2)							
	LD	T	1			9	81	BONNEVILLE HAT	BONN NEW P H	233	820423	820423	51810	72		
					BONN POWERHOUSE EVAL											
	LD	T	2			9	81	BONNEVILLE HAT	BONN TAIL	232	820423	820423	52925	72		
					BONN POWERHOUSE EVAL											
	RD	T	1			9	81	BONNEVILLE HAT	BONN NEW P H	233	820423	820423	54405	72		
					BONN POWERHOUSE EVAL											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	RQT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
	RD	T	2			9	81	BONNEVILLE HAT	BONN TAIL	232	820423	820423	49861	72		
					BONN POWERHOUSE EVAL											
	RD	T	3			9	81	SPRING CR HAT	PRESCOTT ORE	115	820409	820412	48029	75		
					SURVIVAL STUDY											
	LA	TI	2		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820315	820319	33			
*					WILD STOCK EVAL				(072659)							
	LD	TI	2		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820322	820326	21			
*					WILD STOCK EVAL				(072659)							
	RA	TI	1		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820308	820312	7			
*					WILD STOCK EVAL				(072659)							
	RA	TI	2		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820405	820409	11			
*					WILD STOCK EVAL				(072659)							
	RD	TI	1		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820301	820305	2			
*					WILD STOCK EVAL				(072659)							
	RD	TI	2		AD	5		JOHN DAY R	JOHN DAY R@RM 246	743	820329	820402	30			
*					WILD STOCK EVAL				(072659)							
	LD	U	1			9	81	BONNEVILLE HAT	PRESCOTT ORE	115	820601	820604	52156	79		
					SURVIVAL AND EFFICIENCY											
	LD	U	2			9	81	LIT WH SAL HAT	PRESCOTT ORE	115	820607	820610	52656	76		
					SURVIVAL AND EFFICIENCY											
	LD	U	3			9	81	KLICKITAT HAT	PRESCOTT ORE	115	820614	820617	51723	84		
					SURVIVAL AND EFFICIENCY											
	RD	U	1			9	81	SPRING CR HAT	PRESCOTT ORE	115	820426	820426	53839	85		
					SURVIVAL AND EFFICIENCY											
	RD	U	2			9	81	BONNEVILLE HAT	PRESCOTT ORE	115	820430	820503	52513	80		
					SURVIVAL AND EFFICIENCY											
	RD	U	3			9	81	SPRING CR HAT	PRESCOTT ORE	115	820524	820527	53682	96		
					SURVIVAL AND EFFICIENCY											
	RD	U	4			9	81	WASHOUGAL HAT	PRESCOTT ORE	115	820705	820709	51575	79		
					SURVIVAL AND EFFICIENCY											

RELEASE DATA 1982

MAG TAG MULT	LOC	BR	RQT	CLIP	OTHER MARK	SP	BY	HATCHERY OR SOURCE	RELEASE SITE	KM	ST.REL.	END.REL.	NO.REL.	MM	#/LB	NO.UNMKD
					PURPOSE OF RELEASE				REMARKS							
231610	RA	V	1			9		MCNARY D	BONN TAIL	232	820625	820702	5381			
*					TRANSPORTATION STUDY				(231610;RAV1)							
231612	RA	V	2			9		MCNARY D	BONN TAIL	232	820712	820721	18787			
*					TRANSPORTATION STUDY				(231612;RAV2)							
231614	RA	V	3			9		MCNARY D	BONN TAIL	232	820726	820806	15525			
*					TRANSPORTATION STUDY				(231614;RAV3)							
	LD	X	1			9	81	HAGERMAN HAT	LO GRANITE RES	699	820601	820603	10935			
*					RELEASE SITE COMP				(051023)							
	RD	X	1			9	81	HAGERMAN HAT	ASOTIN WASH	754	820601	820603	10023			
*					RELEASE SITE COMP				(051022)							

APPENDIX H

Average Water Flows for the Time Frame 2100-0600h at Lower Granite, McNary, and John Day Dams

THIS REPORT WAS PRODUCED TO SHOW, FOR A USER SPECIFIED TIME PERIOD, THE AVERAGE WATER FLOWS ASSOCIATED WITH A PARTICULAR DAMSITE, AND SEVERAL RATIOS OF THESE FLOWS. THE SPECIFIED TIME PERIOD USED FOR THIS REPORT IS INDICATED BY ASTERISKS BENEATH ALL INCLUDED HOURS. THE DATE COLUMN HAS THE DATE OF THE LAST HOUR FOR THE SPECIFIED TIME PERIOD. FLOWS ARE MEASURED IN KILO CUBIC FEET PER SECOND (KCFS).

SPECIFIED TIME PERIOD

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(FIRST DAY)    1 1 1 1 1 1 1 1 1 1 2 2 2 2 2    (SECOND DAY)   1 1 1 1 1 1 1 1 1 1 2 2 2 2 2
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
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RIVER FLOW DATA AT THE LOWER GRANITE DAM SITE

DATE YY/MM/DD	AVERAGE HOURLY FLOWS TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 4 1	51.9	51.6	0.0	0.3	0.9942	1.0000	0.0000	0.0058	* HOURLY RECORD MISSING *
82 4 2	53.5	53.0	0.0	0.5	0.9909	1.0000	0.0000	0.0091	
82 4 3	66.0	65.5	0.0	0.5	0.9926	1.0000	0.0000	0.0074	
82 4 4	74.0	73.7	0.0	0.3	0.9959	1.0000	0.0000	0.0041	
82 4 5	83.0	82.7	0.0	0.3	0.9964	1.0000	0.0000	0.0036	
82 4 6	46.9	46.4	0.0	0.5	0.9896	1.0000	0.0000	0.0104	
82 4 7	79.4	78.7	0.0	0.7	0.9915	1.0000	0.0000	0.0085	
82 4 8	79.0	78.5	0.0	0.5	0.9938	1.0000	0.0000	0.0062	
82 4 9	72.1	71.7	0.0	0.5	0.9932	1.0000	0.0000	0.0068	
82 4 10	70.1	69.5	0.0	0.7	0.9903	1.0000	0.0000	0.0097	
82 4 11	58.4	58.1	0.0	0.3	0.9949	1.0000	0.0000	0.0051	
82 4 12	79.4	79.1	0.0	0.3	0.9962	1.0000	0.0000	0.0038	
82 4 13	110.2	109.9	0.0	0.3	0.9973	1.0000	0.0000	0.0027	
82 4 14	97.4	97.1	0.0	0.3	0.9969	1.0000	0.0000	0.0031	
82 4 15	123.6	123.1	0.0	0.5	0.9960	1.0000	0.0000	0.0040	
82 4 16	122.1	121.6	0.0	0.5	0.9960	1.0000	0.0000	0.0040	
82 4 17	97.7	79.0	18.2	0.5	0.8086	0.8127	0.1864	0.0050	
82 4 18	120.6	87.0	33.1	0.5	0.7212	0.7242	0.2747	0.0041	
82 4 19	93.2	58.3	34.4	0.5	0.6261	0.6294	0.3687	0.0052	
82 4 20	100.4	75.7	24.3	0.5	0.7535	0.7572	0.2416	0.0049	
82 4 21	115.5	86.6	28.4	0.5	0.7500	0.7532	0.2458	0.0042	
82 4 22	99.4	77.9	20.9	0.5	0.7843	0.7882	0.2108	0.0049	
82 4 23	97.1	77.6	19.2	0.3	0.7992	0.8017	0.1977	0.0031	
82 4 24	107.6	89.9	17.2	0.5	0.8355	0.8393	0.1600	0.0045	
82 4 25	120.1	96.7	22.9	0.5	0.8051	0.8085	0.1907	0.0043	* HOURLY RECORD MISSING *
82 4 26	120.6	97.9	22.2	0.5	0.8116	0.8150	0.1843	0.0041	
82 4 27	127.4	83.2	43.7	0.5	0.6531	0.6556	0.3430	0.0038	
82 4 28	117.4	91.7	25.2	0.5	0.7810	0.7842	0.2149	0.0042	
82 4 29	121.8	93.4	28.1	0.3	0.7670	0.7689	0.2305	0.0025	
82 4 30	120.2	88.3	31.4	0.5	0.7344	0.7374	0.2615	0.0041	
82 5 1	127.2	75.8	50.9	0.5	0.5960	0.5983	0.4002	0.0038	
82 5 2	119.9	69.5	49.8	0.7	0.5792	0.5824	0.4152	0.0057	
82 5 3	118.8	68.5	49.8	0.5	0.5766	0.5790	0.4193	0.0041	
82 5 4	126.8	77.6	48.7	0.3	0.6129	0.6144	0.3847	0.0024	
82 5 5	130.7	81.5	45.7	0.5	0.6237	0.6261	0.3725	0.0037	
82 5 6	130.6	83.6	46.5	0.5	0.6400	0.6424	0.3562	0.0037	
82 5 7	122.4	78.5	43.3	0.5	0.6418	0.6444	0.3542	0.0040	
82 5 8	119.3	79.0	39.8	0.5	0.6622	0.6649	0.3337	0.0041	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 5 9	115.3	81.1	33.7	0.5	0.7031	0.7061	0.2926	0.0042	
82 5 10	117.7	80.0	37.3	0.3	0.6803	0.6821	0.3171	0.0025	
82 5 11	107.0	80.8	26.0	0.3	0.7546	0.7568	0.2426	0.0028	
82 5 12	114.4	80.4	33.7	0.3	0.7029	0.7047	0.2945	0.0026	
82 5 13	119.3	79.7	39.8	0.3	0.6654	0.6671	0.3321	0.0025	
82 5 14	114.3	79.8	33.8	0.7	0.6982	0.7024	0.2958	0.0059	
82 5 15	120.0	79.5	39.8	0.7	0.6623	0.6660	0.3321	0.0056	
82 5 16	135.9	85.3	50.1	0.5	0.6277	0.6300	0.3687	0.0036	
82 5 17	142.1	91.7	50.1	0.3	0.6453	0.6467	0.3526	0.0021	
82 5 18	154.9	111.5	43.0	0.5	0.7195	0.7218	0.2773	0.0032	
82 5 19	167.2	119.0	47.9	0.3	0.7115	0.7128	0.2867	0.0018	
82 5 20	157.3	115.9	41.4	0.5	0.7343	0.7366	0.2626	0.0031	
82 5 21	141.9	110.1	31.3	0.5	0.7756	0.7783	0.2209	0.0034	
82 5 22	136.7	129.1	7.2	0.4	0.9440	0.9469	0.0530	0.0030	
82 5 23	146.2	129.2	16.5	0.5	0.8836	0.8866	0.1131	0.0033	
82 5 24	154.5	111.7	42.5	0.3	0.7230	0.7244	0.2750	0.0019	
82 5 25	158.0	118.5	38.7	0.9	0.7498	0.7539	0.2447	0.0055	
82 5 26	164.2	118.0	45.8	0.3	0.7189	0.7202	0.2793	0.0018	
82 5 27	181.4	129.1	51.8	0.5	0.7117	0.7137	0.2856	0.0027	
82 5 28	188.7	126.6	61.4	0.7	0.6708	0.6733	0.3256	0.0036	
82 5 29	167.7	115.4	51.8	0.5	0.6880	0.6900	0.3091	0.0029	
82 5 30	142.4	114.1	27.6	0.7	0.8015	0.8053	0.1938	0.0048	
82 5 31	120.7	114.6	5.5	0.5	0.9500	0.9539	0.0460	0.0041	
82 6 1	116.4	115.9	0.0	0.5	0.9958	1.0000	0.0000	0.0042	
82 6 2	105.3	104.9	0.0	0.5	0.9954	1.0000	0.0000	0.0046	
82 6 3	113.8	113.1	0.0	0.7	0.9940	1.0000	0.0000	0.0060	
82 6 4	121.2	110.2	10.8	0.3	0.9088	0.9110	0.0887	0.0025	
82 6 5	140.6	112.3	27.8	0.5	0.7990	0.8018	0.1976	0.0035	
82 6 6	138.5	111.9	26.3	0.3	0.8078	0.8096	0.1900	0.0022	
82 6 7	135.1	112.6	22.2	0.3	0.8336	0.8355	0.1641	0.0022	
82 6 8	126.1	110.0	15.8	0.3	0.8723	0.8744	0.1253	0.0024	
82 6 9	118.3	105.6	11.3	0.5	0.9006	0.9043	0.0953	0.0041	
82 6 10	102.3	101.8	0.0	0.5	0.9952	1.0000	0.0000	0.0048	
82 6 11	117.2	106.5	10.2	0.5	0.9088	0.9126	0.0870	0.0042	
82 6 12	112.5	112.0	0.0	0.5	0.9957	1.0000	0.0000	0.0043	
82 6 13	116.0	115.5	0.0	0.5	0.9958	1.0000	0.0000	0.0042	
82 6 14	134.0	114.6	18.9	0.5	0.8553	0.8584	0.1411	0.0036	
82 6 15	155.9	114.9	40.3	0.7	0.7371	0.7403	0.2586	0.0043	
82 6 16	178.1	114.4	63.2	0.5	0.6423	0.6441	0.3549	0.0027	
82 6 17	199.8	117.6	81.5	0.7	0.5886	0.5906	0.4080	0.0034	
82 6 18	202.0	119.5	82.0	0.5	0.5916	0.5930	0.4060	0.0024	
82 6 19	206.3	119.9	86.1	0.3	0.5813	0.5821	0.4173	0.0013	
82 6 20	195.5	119.2	75.8	0.5	0.6097	0.6112	0.3878	0.0025	
82 6 21	192.7	119.2	73.0	0.5	0.6187	0.6202	0.3788	0.0025	
82 6 22	200.2	119.8	79.8	0.7	0.5981	0.6001	0.3985	0.0034	
82 6 23	203.4	120.0	83.1	0.3	0.5900	0.5908	0.4086	0.0015	
82 6 24	197.6	99.1	98.2	0.3	0.5015	0.5023	0.4970	0.0015	
82 6 25	188.0	113.9	74.4	0.5	0.6032	0.6048	0.3942	0.0026	
82 6 26	179.5	97.6	81.4	0.5	0.5437	0.5452	0.4536	0.0027	
82 6 27	172.9	73.4	99.0	0.5	0.4243	0.4256	0.5728	0.0028	
82 6 28	174.8	87.3	86.9	0.5	0.4997	0.5011	0.4975	0.0028	
82 6 29	171.0	89.2	81.3	0.5	0.5216	0.5231	0.4755	0.0029	
82 6 30	167.7	89.3	77.9	0.5	0.5325	0.5341	0.4646	0.0029	

DATE YY/MM/DD			*** AVERAGE HOURLY FLOWS ***** TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS *** TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS ***
82	7	1	167.0	119.3	46.5	0.7	0.7173	0.7203	0.2786	0.0041	
82	7	2	168.5	119.3	48.5	0.7	0.7079	0.7107	0.2881	0.0040	
82	7	3	160.2	119.5	40.4	0.3	0.7459	0.7473	0.2523	0.0019	
82	7	4	151.2	118.9	31.8	0.5	0.7864	0.7890	0.2104	0.0032	
82	7	5	138.6	117.8	20.5	0.3	0.8500	0.8519	0.1478	0.0022	
82	7	6	129.6	117.2	11.9	0.5	0.9044	0.9078	0.0918	0.0038	
82	7	7	110.9	110.6	0.0	0.3	0.9973	1.0000	0.0000	0.0027	
82	7	8	115.9	115.4	0.0	0.5	0.9958	1.0000	0.0000	0.0042	
82	7	9	114.1	113.5	0.0	0.7	0.9941	1.0000	0.0000	0.0059	
82	7	10	107.3	106.6	0.0	0.7	0.9937	1.0000	0.0000	0.0063	
82	7	11	97.5	96.7	0.0	0.9	0.9911	1.0000	0.0000	0.0089	
82	7	12	81.4	80.7	0.0	0.7	0.9917	1.0000	0.0000	0.0083	
82	7	13	87.5	86.8	0.0	0.5	0.9944	1.0000	0.0000	0.0056	
82	7	14	81.0	80.7	0.0	0.3	0.9963	1.0000	0.0000	0.0037	
82	7	15	90.3	90.3	0.0	0.5	0.9946	1.0000	0.0000	0.0054	
82	7	16	85.4	84.9	0.0	0.5	0.9943	1.0000	0.0000	0.0057	
82	7	17	75.6	75.2	0.0	0.5	0.9935	1.0000	0.0000	0.0065	
82	7	18	68.7	68.0	0.0	0.7	0.9901	1.0000	0.0000	0.0099	
82	7	19	60.4	60.1	0.0	0.3	0.9950	1.0000	0.0000	0.0050	
82	7	20	57.2	56.7	0.0	0.5	0.9915	1.0000	0.0000	0.0085	
82	7	21	63.0	62.7	0.0	0.3	0.9952	1.0000	0.0000	0.0048	
82	7	22	52.8	52.3	0.0	0.5	0.9907	1.0000	0.0000	0.0093	
82	7	23	55.0	54.5	0.0	0.5	0.9911	1.0000	0.0000	0.0089	
82	7	24	39.0	38.7	0.0	0.3	0.9923	1.0000	0.0000	0.0077	
82	7	25	36.8	36.5	0.0	0.3	0.9919	1.0000	0.0000	0.0081	
82	7	26	35.4	34.7	0.0	0.7	0.9809	1.0000	0.0000	0.0191	
82	7	27	35.7	35.2	0.0	0.5	0.9863	1.0000	0.0000	0.0137	
82	7	28	37.7	37.4	0.0	0.3	0.9920	1.0000	0.0000	0.0080	
82	7	29	40.2	39.8	0.0	0.5	0.9879	1.0000	0.0000	0.0121	
82	7	30	36.2	35.7	0.0	0.5	0.9865	1.0000	0.0000	0.0135	
82	7	31	37.8	37.5	0.0	0.3	0.9921	1.0000	0.0000	0.0079	
82	8	1	20.8	20.5	0.0	0.3	0.9856	1.0000	0.0000	0.0144	
82	8	2	29.7	29.0	0.0	0.7	0.9772	1.0000	0.0000	0.0228	
82	8	3	25.7	25.4	0.0	0.3	0.9883	1.0000	0.0000	0.0117	
82	8	4	24.6	24.3	0.0	0.3	0.9878	1.0000	0.0000	0.0122	
82	8	5	24.2	23.9	0.0	0.3	0.9876	1.0000	0.0000	0.0124	
82	8	6	22.1	21.8	0.0	0.3	0.9864	1.0000	0.0000	0.0136	
82	8	7	23.2	22.7	0.0	0.5	0.9789	1.0000	0.0000	0.0211	
82	8	8	27.9	27.4	0.0	0.5	0.9825	1.0000	0.0000	0.0175	
82	8	9	25.6	25.3	0.0	0.3	0.9883	1.0000	0.0000	0.0117	
82	8	10	47.6	46.9	0.0	0.7	0.9858	1.0000	0.0000	0.0142	
82	8	11	40.6	40.3	0.0	0.3	0.9926	1.0000	0.0000	0.0074	
82	8	12	18.1	17.6	0.0	0.5	0.9730	1.0000	0.0000	0.0270	
82	8	13	16.7	16.4	0.0	0.3	0.9821	1.0000	0.0000	0.0179	
82	8	14	19.4	18.9	0.0	0.5	0.9748	1.0000	0.0000	0.0252	
82	8	15	15.4	14.9	0.0	0.5	0.9682	1.0000	0.0000	0.0318	
82	8	16	16.1	15.6	0.0	0.5	0.9697	1.0000	0.0000	0.0303	
82	8	17	15.7	15.2	0.0	0.5	0.9688	1.0000	0.0000	0.0312	
82	8	18	13.7	13.4	0.0	0.3	0.9781	1.0000	0.0000	0.0219	
82	8	19	13.3	12.8	0.0	0.5	0.9633	1.0000	0.0000	0.0367	
82	8	20	16.4	15.9	0.0	0.5	0.9701	1.0000	0.0000	0.0299	
82	8	21	13.5	13.2	0.0	0.3	0.9778	1.0000	0.0000	0.0222	
82	8	22	12.8	12.5	0.0	0.3	0.9766	1.0000	0.0000	0.0234	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 8 23	12.9	12.6	0.0	0.3	0.9767	1.0000	0.0000	0.0233	
82 8 24	13.0	12.6	0.0	0.5	0.9633	1.0000	0.0000	0.0367	
82 8 25	13.4	13.2	0.0	0.3	0.9785	1.0000	0.0000	0.0215	
82 8 26	16.0	15.9	0.0	0.1	0.9938	1.0000	0.0000	0.0062	
82 8 27	13.0	12.5	0.0	0.5	0.9632	1.0000	0.0000	0.0368	
82 8 28	13.5	13.2	0.0	0.3	0.9786	1.0000	0.0000	0.0214	
82 8 29	15.4	15.0	0.0	0.5	0.9690	1.0000	0.0000	0.0310	
82 8 30	13.1	12.8	0.0	0.3	0.9780	1.0000	0.0000	0.0220	
82 8 31	13.8	13.5	0.0	0.3	0.9791	1.0000	0.0000	0.0209	
82 9 1	15.7	15.2	0.0	0.5	0.9695	1.0000	0.0000	0.0305	
82 9 2	18.6	18.3	0.0	0.3	0.9845	1.0000	0.0000	0.0155	
82 9 3	16.1	15.6	0.0	0.5	0.9703	1.0000	0.0000	0.0297	
82 9 4	20.0	19.7	0.0	0.3	0.9856	1.0000	0.0000	0.0144	
82 9 5	17.3	17.0	0.0	0.3	0.9833	1.0000	0.0000	0.0167	
82 9 6	16.9	16.8	0.0	0.1	0.9941	1.0000	0.0000	0.0059	
82 9 7	14.6	14.5	0.0	0.1	0.9932	1.0000	0.0000	0.0068	
82 9 8	19.9	19.6	0.0	0.3	0.9855	1.0000	0.0000	0.0145	
82 9 9	21.9	21.8	0.0	0.1	0.9954	1.0000	0.0000	0.0046	
82 9 10	18.9	18.4	0.0	0.5	0.9747	1.0000	0.0000	0.0253	
82 9 11	24.5	24.3	0.0	0.3	0.9882	1.0000	0.0000	0.0118	
82 9 12	20.7	20.6	0.0	0.1	0.9952	1.0000	0.0000	0.0048	
82 9 13	15.2	15.1	0.0	0.1	0.9934	1.0000	0.0000	0.0066	
82 9 14	18.1	18.0	0.0	0.1	0.9945	1.0000	0.0000	0.0055	
82 9 15	14.3	14.2	0.0	0.1	0.9930	1.0000	0.0000	0.0070	
82 9 16	20.1	20.0	0.0	0.1	0.9950	1.0000	0.0000	0.0050	
82 9 17	17.5	17.2	0.0	0.3	0.9835	1.0000	0.0000	0.0165	
82 9 18	16.4	16.3	0.0	0.1	0.9939	1.0000	0.0000	0.0061	
82 9 19	27.2	26.9	0.0	0.3	0.9894	1.0000	0.0000	0.0106	
82 9 20	17.7	17.5	0.0	0.3	0.9837	1.0000	0.0000	0.0163	
82 9 21	16.9	16.8	0.0	0.1	0.9941	1.0000	0.0000	0.0059	
82 9 22	15.3	15.0	0.0	0.3	0.9811	1.0000	0.0000	0.0189	
82 9 23	19.8	19.5	0.0	0.3	0.9854	1.0000	0.0000	0.0146	
82 9 24	17.5	17.0	0.0	0.5	0.9726	1.0000	0.0000	0.0274	
82 9 25	16.9	16.5	0.0	0.5	0.9718	1.0000	0.0000	0.0282	
82 9 26	18.1	18.0	0.0	0.1	0.9945	1.0000	0.0000	0.0055	
82 9 27	15.6	15.3	0.0	0.3	0.9814	1.0000	0.0000	0.0186	
82 9 28	21.5	21.2	0.0	0.3	0.9865	1.0000	0.0000	0.0135	
82 9 29	12.2	12.1	0.0	0.1	0.9918	1.0000	0.0000	0.0082	
82 9 30	15.2	15.0	0.0	0.3	0.9810	1.0000	0.0000	0.0190	
82 10 1	20.1	19.6	0.0	0.5	0.9762	1.0000	0.0000	0.0238	
82 10 2	18.7	18.4	0.0	0.3	0.9845	1.0000	0.0000	0.0155	
82 10 3	17.2	17.1	0.0	0.1	0.9942	1.0000	0.0000	0.0058	
82 10 4	18.1	18.0	0.0	0.1	0.9945	1.0000	0.0000	0.0055	
82 10 5	17.4	17.3	0.0	0.1	0.9942	1.0000	0.0000	0.0058	
82 10 6	16.7	16.6	0.0	0.1	0.9940	1.0000	0.0000	0.0060	
82 10 7	18.6	18.5	0.0	0.1	0.9946	1.0000	0.0000	0.0054	
82 10 8	20.1	20.0	0.0	0.1	0.9950	1.0000	0.0000	0.0050	
82 10 9	21.9	21.6	0.0	0.3	0.9868	1.0000	0.0000	0.0132	
82 10 10	25.6	25.5	0.0	0.1	0.9961	1.0000	0.0000	0.0039	
82 10 11	36.0	35.7	0.0	0.3	0.9920	1.0000	0.0000	0.0080	
82 10 12	35.5	35.2	0.0	0.3	0.9919	1.0000	0.0000	0.0081	
82 10 13	17.2	16.9	0.0	0.3	0.9832	1.0000	0.0000	0.0168	
82 10 14	17.7	17.4	0.0	0.3	0.9837	1.0000	0.0000	0.0163	

DATE YY/MM/DD	*** AVERAGE HOURLY FLOWS ***** TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS *** TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS ***
82 10 15	17.3	16.8	0.0	0.5	0.9723	1.0000	0.0000	0.0277	
82 10 16	17.7	17.4	0.0	0.3	0.9837	1.0000	0.0000	0.0163	
82 10 17	27.6	27.3	0.0	0.3	0.9895	1.0000	0.0000	0.0105	
82 10 18	26.3	26.0	0.0	0.3	0.9890	1.0000	0.0000	0.0110	
82 10 19	19.5	19.3	0.0	0.3	0.9852	1.0000	0.0000	0.0148	
82 10 20	19.5	19.2	0.0	0.3	0.9852	1.0000	0.0000	0.0148	
82 10 21	19.2	19.1	0.0	0.1	0.9948	1.0000	0.0000	0.0052	
82 10 22	19.5	19.4	0.0	0.1	0.9949	1.0000	0.0000	0.0051	
82 10 23	13.3	13.1	0.0	0.3	0.9784	1.0000	0.0000	0.0216	
82 10 24	18.9	18.8	0.0	0.1	0.9947	1.0000	0.0000	0.0053	
82 10 25	23.8	23.3	0.0	0.5	0.9799	1.0000	0.0000	0.0201	
82 10 26	24.1	23.6	0.0	0.5	0.9802	1.0000	0.0000	0.0198	
82 10 27	24.7	24.4	0.0	0.3	0.9883	1.0000	0.0000	0.0117	
82 10 28	27.7	27.6	0.0	0.1	0.9964	1.0000	0.0000	0.0036	
82 10 29	27.3	27.0	0.0	0.3	0.9894	1.0000	0.0000	0.0106	
82 10 30	33.6	33.1	0.0	0.5	0.9858	1.0000	0.0000	0.0142	
82 10 31	36.4	36.3	0.0	0.1	0.9973	1.0000	0.0000	0.0027	
82 11 1	32.3	31.8	0.0	0.5	0.9852	1.0000	0.0000	0.0148	
82 11 2	21.7	21.4	0.0	0.3	0.9867	1.0000	0.0000	0.0133	
82 11 3	33.7	33.6	0.0	0.1	0.9970	1.0000	0.0000	0.0030	
82 11 4	16.6	16.3	0.0	0.3	0.9826	1.0000	0.0000	0.0174	
82 11 5	28.1	27.6	0.0	0.5	0.9830	1.0000	0.0000	0.0170	
82 11 6	25.9	17.5	8.1	0.3	0.6767	0.6843	0.3122	0.0112	
82 11 7	21.9	21.6	0.0	0.3	0.9868	1.0000	0.0000	0.0132	
82 11 8	25.6	25.5	0.0	0.1	0.9961	1.0000	0.0000	0.0039	
82 11 9	33.4	32.9	0.0	0.5	0.9857	1.0000	0.0000	0.0143	
82 11 10	11.0	9.5	0.0	1.6	0.8580	1.0000	0.0000	0.1420	
82 11 11	26.4	26.1	0.0	0.3	0.9891	1.0000	0.0000	0.0109	
82 11 12	28.1	28.0	0.0	0.1	0.9964	1.0000	0.0000	0.0036	
82 11 13	30.2	30.1	0.0	0.1	0.9967	1.0000	0.0000	0.0033	
82 11 14	23.3	23.5	0.0	0.3	0.9879	1.0000	0.0000	0.0121	
82 11 15	26.0	25.7	0.0	0.3	0.9889	1.0000	0.0000	0.0111	
82 11 16	25.7	25.4	0.0	0.3	0.9887	1.0000	0.0000	0.0113	
82 11 17	27.2	27.1	0.0	0.1	0.9963	1.0000	0.0000	0.0037	
82 11 18	30.6	30.5	0.0	0.1	0.9967	1.0000	0.0000	0.0033	
82 11 19	29.8	29.8	0.0	0.0	0.9996	1.0000	0.0000	0.0004	
82 11 20	22.6	22.1	0.0	0.5	0.9789	1.0000	0.0000	0.0211	
82 11 21	22.3	22.0	0.0	0.3	0.9871	1.0000	0.0000	0.0129	
82 11 22	23.8	23.7	0.0	0.1	0.9958	1.0000	0.0000	0.0042	
82 11 23	25.3	25.0	0.0	0.3	0.9886	1.0000	0.0000	0.0114	
82 11 24	23.0	22.7	0.0	0.3	0.9874	1.0000	0.0000	0.0126	
82 11 25	18.3	18.0	0.0	0.3	0.9842	1.0000	0.0000	0.0158	
82 11 26	27.8	27.7	0.0	0.1	0.9964	1.0000	0.0000	0.0036	
82 11 27	24.5	24.2	0.0	0.3	0.9882	1.0000	0.0000	0.0118	
82 11 28	24.3	24.2	0.0	0.1	0.9959	1.0000	0.0000	0.0041	
82 11 29	26.5	26.2	0.0	0.3	0.9891	1.0000	0.0000	0.0109	
82 11 30	26.2	25.8	0.0	0.5	0.9818	1.0000	0.0000	0.0182	
82 12 1	25.2	25.1	0.0	0.1	0.9960	1.0000	0.0000	0.0040	
82 12 2	32.2	32.1	0.0	0.1	0.9969	1.0000	0.0000	0.0031	
82 12 3	25.6	25.1	0.0	0.5	0.9813	1.0000	0.0000	0.0187	
82 12 4	25.2	24.7	0.0	0.5	0.9810	1.0000	0.0000	0.0190	
82 12 5	34.2	34.1	0.0	0.1	0.9971	1.0000	0.0000	0.0029	
82 12 6	23.1	23.0	0.0	0.1	0.9957	1.0000	0.0000	0.0043	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 12 7	23.8	23.3	0.0	0.5	0.9799	1.0000	0.0000	0.0201	
82 12 8	27.0	26.8	0.0	0.3	0.9893	1.0000	0.0000	0.0107	
82 12 9	21.1	21.0	0.0	0.1	0.9953	1.0000	0.0000	0.0047	
82 12 10	14.6	14.2	0.0	0.5	0.9674	1.0000	0.0000	0.0326	
82 12 11	33.8	33.7	0.0	0.1	0.9970	1.0000	0.0000	0.0030	
82 12 12	23.9	23.8	0.0	0.1	0.9958	1.0000	0.0000	0.0042	
82 12 13	17.5	17.2	0.0	0.3	0.9835	1.0000	0.0000	0.0165	
82 12 14	18.0	17.9	0.0	0.1	0.9944	1.0000	0.0000	0.0056	
82 12 15	28.4	28.3	0.0	0.1	0.9965	1.0000	0.0000	0.0035	
82 12 16	20.0	19.9	0.0	0.1	0.9950	1.0000	0.0000	0.0050	
82 12 17	33.6	33.5	0.0	0.1	0.9970	1.0000	0.0000	0.0030	
82 12 18	23.1	22.8	0.0	0.3	0.9875	1.0000	0.0000	0.0125	
82 12 19	42.4	42.1	0.0	0.3	0.9932	1.0000	0.0000	0.0068	
82 12 20	21.8	21.5	0.0	0.3	0.9867	1.0000	0.0000	0.0133	
82 12 21	21.6	21.5	0.0	0.1	0.9954	1.0000	0.0000	0.0046	
82 12 22	20.6	20.4	0.0	0.3	0.9860	1.0000	0.0000	0.0140	
82 12 23	37.2	36.9	0.0	0.3	0.9922	1.0000	0.0000	0.0078	
82 12 24	39.5	39.4	0.0	0.1	0.9975	1.0000	0.0000	0.0025	
82 12 25	31.2	31.1	0.0	0.1	0.9968	1.0000	0.0000	0.0032	
82 12 26	25.8	25.7	0.0	0.1	0.9961	1.0000	0.0000	0.0039	
82 12 27	26.7	26.6	0.0	0.1	0.9963	1.0000	0.0000	0.0037	
82 12 28	31.2	31.1	0.0	0.1	0.9968	1.0000	0.0000	0.0032	
82 12 29	25.3	25.2	0.0	0.1	0.9961	1.0000	0.0000	0.0039	
82 12 30	22.9	22.6	0.0	0.3	0.9874	1.0000	0.0000	0.0126	
82 12 31	24.8	24.7	0.0	0.1	0.9960	1.0000	0.0000	0.0040	
83 12 1	35.5	35.4	0.0	0.1	0.9972	1.0000	0.0000	0.0028	* HOURLY RECORD MISSING *

TOTAL RECORD(S) READ = 6597

THIS REPORT WAS PRODUCED TO SHOW, FOR A USER SPECIFIED TIME PERIOD, THE AVERAGE WATER FLOWS ASSOCIATED WITH A PARTICULAR DAMSITE, AND SEVERAL RATIOS OF THESE FLOWS. THE SPECIFIED TIME PERIOD USED FOR THIS REPORT IS INDICATED BY ASTERISKS BENEATH ALL INCLUDED HOURS. THE DATE COLUMN HAS THE DATE OF THE LAST HOUR FOR THE SPECIFIED TIME PERIOD. FLOWS ARE MEASURED IN KILO CUBIC FEET PER SECOND (KCFS).

SPECIFIED TIME PERIOD

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(FIRST DAY)    1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2    (SECOND DAY)   1 1 1 1 1 1 1 1 1 1 2 2 2 2 2
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
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RIVER FLOW DATA AT THE NORBY DAM SITE

DATE YY/MM/DD	*** AVERAGE HOURLY FLOWS ***** TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS *** TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	*** COMMENTS ***
82 4 1	242.2	157.1	81.4	3.7	0.6487	0.6588	0.3360	0.0153	* HOURLY RECORD MISSING *
82 4 2	279.0	150.2	125.4	3.4	0.5384	0.5450	0.4495	0.0121	
82 4 3	227.5	224.0	0.0	3.5	0.9845	1.0000	0.0000	0.0155	
82 4 4	222.5	216.6	2.6	3.4	0.9732	0.9881	0.0117	0.0151	
82 4 5	277.7	223.2	51.1	3.4	0.8038	0.8137	0.1841	0.0121	
82 4 6	251.6	226.1	22.3	3.2	0.8987	0.9103	0.0885	0.0127	
82 4 7	281.1	225.7	52.0	3.4	0.8029	0.8126	0.1851	0.0120	
82 4 8	250.4	220.8	26.0	3.5	0.8820	0.8947	0.1038	0.0141	
82 4 9	225.3	222.1	0.0	3.2	0.9858	1.0000	0.0000	0.0142	
82 4 10	205.7	202.2	0.0	3.5	0.9823	1.0000	0.0000	0.0172	
82 4 11	227.3	223.7	0.0	3.6	0.9842	1.0000	0.0000	0.0158	
82 4 12	227.1	223.6	0.0	3.5	0.9844	1.0000	0.0000	0.0156	
82 4 13	321.6	225.2	93.0	3.4	0.7004	0.7078	0.2891	0.0105	
82 4 14	347.2	229.7	114.0	3.4	0.6618	0.6683	0.3285	0.0097	
82 4 15	322.6	179.5	139.8	3.3	0.5563	0.5621	0.4334	0.0103	
82 4 16	270.5	231.2	35.8	3.5	0.8548	0.8661	0.1322	0.0131	
82 4 17	278.2	219.9	55.5	3.4	0.7889	0.7986	0.1990	0.0121	
82 4 18	265.2	181.1	80.7	3.4	0.6830	0.6917	0.3043	0.0127	
82 4 19	322.5	232.0	86.6	3.9	0.7193	0.7281	0.2687	0.0120	
82 4 20	283.5	220.5	59.6	3.4	0.7778	0.7872	0.2103	0.0119	
82 4 21	252.7	189.5	59.6	3.5	0.7501	0.7607	0.2359	0.0140	
82 4 22	307.7	228.6	75.6	3.5	0.7428	0.7515	0.2457	0.0115	
82 4 23	253.9	230.5	20.0	3.4	0.9079	0.9201	0.0789	0.0133	
82 4 24	270.3	230.6	36.5	3.2	0.8530	0.8632	0.1351	0.0118	
82 4 25	272.9	229.4	40.1	3.4	0.8406	0.8511	0.1470	0.0124	* HOURLY RECORD MISSING *
82 4 26	227.4	206.5	17.5	3.4	0.9082	0.9218	0.0770	0.0148	
82 4 27	258.6	222.9	32.3	3.4	0.8621	0.8734	0.1249	0.0130	
82 4 28	269.5	221.7	44.1	3.7	0.8226	0.8340	0.1637	0.0137	
82 4 29	273.6	221.7	48.0	3.9	0.8105	0.8221	0.1754	0.0141	
82 4 30	260.5	213.3	43.7	3.4	0.8194	0.8301	0.1677	0.0129	
82 5 1	261.2	208.8	48.9	3.5	0.7994	0.8104	0.1870	0.0135	
82 5 2	257.4	209.7	43.8	3.9	0.8148	0.8272	0.1702	0.0150	
82 5 3	280.3	187.1	89.7	3.5	0.6675	0.6760	0.3199	0.0126	
82 5 4	311.9	217.4	90.8	3.7	0.6970	0.7054	0.2911	0.0119	
82 5 5	307.2	216.9	86.9	3.4	0.7060	0.7139	0.2830	0.0110	
82 5 6	314.0	180.6	130.1	3.4	0.5751	0.5813	0.4142	0.0107	
82 5 7	287.3	183.1	100.5	3.7	0.6374	0.6457	0.3498	0.0129	
82 5 8	278.9	216.4	58.3	3.7	0.7758	0.7862	0.2110	0.0133	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 5 9	321.1	198.7	118.7	3.7	0.6189	0.6261	0.3696	0.0115	
82 5 10	298.3	194.6	99.8	3.7	0.6530	0.6612	0.3346	0.0124	
82 5 11	355.1	212.2	139.2	3.7	0.5975	0.6038	0.3921	0.0104	
82 5 12	340.8	179.2	158.1	3.5	0.5258	0.5313	0.4638	0.0104	
82 5 13	302.8	174.6	124.3	3.9	0.5765	0.5840	0.4107	0.0128	
82 5 14	294.9	185.5	106.1	3.4	0.6289	0.6361	0.3597	0.0115	
82 5 15	294.1	182.2	108.6	3.4	0.6194	0.6266	0.3691	0.0114	
82 5 16	327.2	173.1	150.4	3.7	0.5291	0.5351	0.4596	0.0113	
82 5 17	339.9	182.2	154.0	3.7	0.5359	0.5418	0.4532	0.0109	
82 5 18	350.8	176.8	170.5	3.5	0.5040	0.5092	0.4859	0.0101	
82 5 19	347.3	179.9	164.5	3.9	0.5153	0.5211	0.4736	0.0111	
82 5 20	380.8	150.6	226.8	3.4	0.3955	0.3990	0.5957	0.0088	
82 5 21	395.8	178.5	213.7	3.5	0.4510	0.4551	0.5400	0.0089	
82 5 22	334.1	186.1	144.3	3.7	0.5570	0.5632	0.4320	0.0111	
82 5 23	328.5	174.3	150.8	3.4	0.5306	0.5361	0.4591	0.0102	
82 5 24	346.1	187.8	154.7	3.5	0.5427	0.5483	0.4471	0.0102	
82 5 25	362.6	175.4	183.8	3.5	0.4835	0.4883	0.5067	0.0097	
82 5 26	384.5	192.5	188.4	3.5	0.5008	0.5055	0.4900	0.0092	
82 5 27	404.2	195.2	205.6	3.4	0.4830	0.4871	0.5087	0.0083	
82 5 28	388.7	191.3	193.5	3.9	0.4922	0.4971	0.4979	0.0099	
82 5 29	359.5	196.5	159.6	3.4	0.5467	0.5518	0.4440	0.0094	
82 5 30	362.1	189.4	169.2	3.5	0.5231	0.5282	0.4673	0.0096	
82 5 31	332.4	188.0	141.0	3.4	0.5657	0.5715	0.4242	0.0101	
82 6 1	299.2	180.7	115.3	3.2	0.6038	0.6104	0.3855	0.0107	
82 6 2	337.7	193.8	140.2	3.7	0.5740	0.5803	0.4151	0.0110	
82 6 3	319.5	155.3	160.7	3.5	0.4861	0.4916	0.5028	0.0111	
82 6 4	345.5	184.2	157.8	3.5	0.5331	0.5386	0.4567	0.0102	
82 6 5	333.0	166.9	162.9	3.2	0.5012	0.5060	0.4892	0.0096	
82 6 6	346.6	186.1	156.8	3.7	0.5369	0.5427	0.4525	0.0107	
82 6 7	343.9	184.1	156.4	3.4	0.5354	0.5407	0.4548	0.0098	
82 6 8	342.1	184.4	154.1	3.5	0.5390	0.5447	0.4506	0.0103	
82 6 9	319.0	186.1	129.6	3.2	0.5836	0.5895	0.4064	0.0100	
82 6 10	306.8	184.1	119.2	3.5	0.5999	0.6069	0.3886	0.0115	
82 6 11	305.3	184.4	117.5	3.4	0.6041	0.6108	0.3849	0.0110	
82 6 12	296.6	181.7	111.5	3.4	0.6127	0.6197	0.3759	0.0114	
82 6 13	294.3	179.5	111.5	3.3	0.6098	0.6168	0.3789	0.0113	
82 6 14	298.6	182.7	112.6	3.4	0.6117	0.6187	0.3770	0.0113	
82 6 15	373.4	171.2	198.7	3.5	0.4585	0.4628	0.5321	0.0095	
82 6 16	394.5	192.1	198.8	3.5	0.4871	0.4915	0.5040	0.0090	
82 6 17	392.0	189.8	198.8	3.4	0.4843	0.4885	0.5071	0.0086	
82 6 18	361.5	203.2	155.1	3.2	0.5620	0.5671	0.4290	0.0090	
82 6 19	407.3	203.9	200.2	3.2	0.5007	0.5046	0.4915	0.0079	
82 6 20	397.6	205.3	188.9	3.4	0.5164	0.5208	0.4751	0.0085	
82 6 21	369.2	200.5	164.8	3.9	0.5431	0.5489	0.4464	0.0105	
82 6 22	407.4	175.8	228.2	3.4	0.4316	0.4352	0.5601	0.0083	
82 6 23	439.4	173.4	262.6	3.4	0.3946	0.3976	0.5978	0.0077	
82 6 24	438.4	155.2	280.0	3.2	0.3540	0.3566	0.6387	0.0073	
82 6 25	395.5	151.2	241.1	3.2	0.3822	0.3854	0.6097	0.0081	
82 6 26	386.0	100.1	282.4	3.5	0.2593	0.2617	0.7315	0.0092	
82 6 27	348.0	63.1	281.3	3.5	0.1814	0.1833	0.8085	0.0102	
82 6 28	408.9	103.2	302.4	3.4	0.2524	0.2545	0.7394	0.0082	
82 6 29	391.2	112.2	276.2	2.8	0.2868	0.2889	0.7060	0.0072	
82 6 30	415.1	96.7	314.9	3.5	0.2329	0.2349	0.7586	0.0085	

DATE YY/MM/OD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 7 1	420.4	118.3	298.9	3.2	0.2814	0.2836	0.7110	0.0076	
82 7 2	376.8	77.1	296.1	3.5	0.2047	0.2067	0.7859	0.0094	
82 7 3	410.5	75.0	332.2	3.4	0.1826	0.1841	0.8092	0.0082	
82 7 4	375.5	56.0	316.4	3.1	0.1492	0.1505	0.8425	0.0083	
82 7 5	376.4	66.9	306.0	3.5	0.1778	0.1795	0.8128	0.0094	
82 7 6	373.0	89.2	280.6	3.2	0.2391	0.2411	0.7524	0.0086	
82 7 7	310.8	97.4	210.1	3.4	0.3133	0.3167	0.6759	0.0108	
82 7 8	306.0	118.1	184.7	3.2	0.3860	0.3901	0.6035	0.0105	
82 7 9	321.8	195.0	123.5	3.4	0.6057	0.6122	0.3837	0.0105	
82 7 10	355.9	147.4	205.1	3.4	0.4142	0.4181	0.5764	0.0095	
82 7 11	306.8	172.8	130.6	3.4	0.5633	0.5695	0.4258	0.0110	
82 7 12	264.8	179.0	82.4	3.4	0.6760	0.6847	0.3113	0.0127	
82 7 13	280.0	182.3	94.5	3.2	0.6511	0.6586	0.3375	0.0114	
82 7 14	284.9	186.2	95.4	3.2	0.6538	0.6612	0.3350	0.0112	
82 7 15	282.5	181.5	97.6	3.4	0.6427	0.6504	0.3454	0.0119	
82 7 16	275.8	184.5	87.7	3.5	0.6690	0.6777	0.3181	0.0128	
82 7 17	252.3	186.3	62.9	3.2	0.7382	0.7477	0.2491	0.0127	
82 7 18	231.9	183.4	44.9	3.5	0.7909	0.8032	0.1938	0.0152	
82 7 19	228.8	182.9	42.5	3.4	0.7995	0.8114	0.1858	0.0147	
82 7 20	278.5	181.1	94.1	3.2	0.6504	0.6580	0.3381	0.0115	
82 7 21	231.9	190.9	37.5	3.5	0.8232	0.8360	0.1615	0.0152	
82 7 22	218.9	197.8	17.9	3.2	0.9037	0.9171	0.0817	0.0146	
82 7 23	199.4	195.9	0.0	3.5	0.9823	1.0000	0.0000	0.0177	
82 7 24	191.3	187.9	0.0	3.4	0.9824	1.0000	0.0000	0.0176	
82 7 25	186.1	182.6	0.0	3.5	0.9810	1.0000	0.0000	0.0190	
82 7 26	186.0	182.8	0.0	3.2	0.9828	1.0000	0.0000	0.0172	
82 7 27	201.3	197.7	0.0	3.5	0.9824	1.0000	0.0000	0.0176	
82 7 28	201.1	197.5	0.0	3.6	0.9823	1.0000	0.0000	0.0177	
82 7 29	201.0	197.6	0.0	3.4	0.9832	1.0000	0.0000	0.0168	
82 7 30	196.2	192.5	0.0	3.7	0.9811	1.0000	0.0000	0.0189	
82 7 31	174.9	171.3	0.0	3.5	0.9798	1.0000	0.0000	0.0202	
82 8 1	165.9	162.4	0.0	3.5	0.9787	1.0000	0.0000	0.0213	
82 8 2	181.1	177.5	0.0	3.5	0.9805	1.0000	0.0000	0.0195	
82 8 3	164.5	161.1	0.0	3.4	0.9795	1.0000	0.0000	0.0205	
82 8 4	140.1	137.0	0.0	3.1	0.9780	1.0000	0.0000	0.0220	
82 8 5	172.3	168.9	0.0	3.4	0.9805	1.0000	0.0000	0.0195	
82 8 6	211.1	207.9	0.0	3.2	0.9848	1.0000	0.0000	0.0152	
82 8 7	213.8	210.4	0.0	3.4	0.9843	1.0000	0.0000	0.0157	
82 8 8	198.3	194.9	0.0	3.4	0.9830	1.0000	0.0000	0.0170	
82 8 9	169.2	165.6	0.0	3.5	0.9791	1.0000	0.0000	0.0209	
82 8 10	174.0	170.8	0.0	3.2	0.9816	1.0000	0.0000	0.0184	
82 8 11	156.2	153.0	0.0	3.2	0.9795	1.0000	0.0000	0.0205	
82 8 12	151.4	147.8	0.0	3.5	0.9767	1.0000	0.0000	0.0233	
82 8 13	146.0	142.6	0.0	3.4	0.9769	1.0000	0.0000	0.0231	
82 8 14	164.0	160.4	0.0	3.5	0.9784	1.0000	0.0000	0.0216	
82 8 15	124.3	120.7	0.0	3.5	0.9716	1.0000	0.0000	0.0284	
82 8 16	130.1	126.9	0.0	3.2	0.9754	1.0000	0.0000	0.0246	
82 8 17	139.0	135.4	0.0	3.7	0.9735	1.0000	0.0000	0.0265	
82 8 18	139.7	136.1	0.0	3.6	0.9742	1.0000	0.0000	0.0258	
82 8 19	163.8	160.5	0.0	3.4	0.9795	1.0000	0.0000	0.0205	
82 8 20	142.9	139.4	0.0	3.5	0.9753	1.0000	0.0000	0.0247	
82 8 21	149.5	146.1	0.0	3.4	0.9775	1.0000	0.0000	0.0225	
82 8 22	101.0	97.6	0.0	3.4	0.9667	1.0000	0.0000	0.0333	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 8 23	110.6	107.4	0.0	3.2	0.9711	1.0000	0.0000	0.0289	
82 8 24	125.2	122.0	0.0	3.2	0.9744	1.0000	0.0000	0.0256	
82 8 25	122.7	119.5	0.0	3.2	0.9739	1.0000	0.0000	0.0261	
82 8 26	123.9	120.2	0.0	3.7	0.9701	1.0000	0.0000	0.0299	
82 8 27	128.7	125.0	0.0	3.7	0.9713	1.0000	0.0000	0.0287	
82 8 28	77.4	74.2	0.0	3.1	0.9594	1.0000	0.0000	0.0406	
82 8 29	81.9	78.2	0.0	3.7	0.9548	1.0000	0.0000	0.0452	
82 8 30	72.6	69.1	0.0	3.5	0.9513	1.0000	0.0000	0.0487	
82 8 31	81.9	78.5	0.0	3.4	0.9589	1.0000	0.0000	0.0411	
82 9 1	95.7	92.3	0.0	3.4	0.9648	1.0000	0.0000	0.0352	
82 9 2	92.1	88.4	0.0	3.7	0.9598	1.0000	0.0000	0.0402	
82 9 3	78.2	74.9	0.0	3.4	0.9570	1.0000	0.0000	0.0430	
82 9 4	74.1	70.8	0.0	3.4	0.9546	1.0000	0.0000	0.0454	
82 9 5	83.0	79.3	0.0	3.7	0.9554	1.0000	0.0000	0.0446	
82 9 6	72.8	69.1	0.0	3.7	0.9493	1.0000	0.0000	0.0507	
82 9 7	97.2	93.8	0.0	3.4	0.9654	1.0000	0.0000	0.0346	
82 9 8	120.3	116.9	0.0	3.4	0.9720	1.0000	0.0000	0.0280	
82 9 9	127.1	123.6	0.0	3.5	0.9722	1.0000	0.0000	0.0278	
82 9 10	110.3	107.4	0.0	3.4	0.9696	1.0000	0.0000	0.0304	
82 9 11	124.0	120.6	0.0	3.4	0.9728	1.0000	0.0000	0.0272	
82 9 12	107.2	103.3	0.0	3.4	0.9686	1.0000	0.0000	0.0314	
82 9 13	96.3	93.0	0.0	3.4	0.9651	1.0000	0.0000	0.0349	
82 9 14	97.5	94.2	0.0	3.3	0.9660	1.0000	0.0000	0.0340	
82 9 15	98.3	95.0	0.0	3.4	0.9658	1.0000	0.0000	0.0342	
82 9 16	96.2	92.7	0.0	3.5	0.9633	1.0000	0.0000	0.0367	
82 9 17	106.2	102.9	0.0	3.4	0.9683	1.0000	0.0000	0.0317	
82 9 18	78.5	75.1	0.0	3.4	0.9571	1.0000	0.0000	0.0429	
82 9 19	89.9	86.7	0.0	3.2	0.9644	1.0000	0.0000	0.0356	
82 9 20	77.3	73.9	0.0	3.4	0.9564	1.0000	0.0000	0.0436	
82 9 21	77.9	74.6	0.0	3.4	0.9568	1.0000	0.0000	0.0432	
82 9 22	79.2	75.8	0.0	3.4	0.9575	1.0000	0.0000	0.0425	
82 9 23	80.2	76.9	0.0	3.4	0.9580	1.0000	0.0000	0.0420	
82 9 24	78.9	75.5	0.0	3.4	0.9573	1.0000	0.0000	0.0427	
82 9 25	87.6	84.4	0.0	3.2	0.9635	1.0000	0.0000	0.0365	
82 9 26	68.6	65.3	0.0	3.4	0.9510	1.0000	0.0000	0.0490	
82 9 27	74.0	70.5	0.0	3.5	0.9523	1.0000	0.0000	0.0477	
82 9 28	76.9	73.5	0.0	3.4	0.9562	1.0000	0.0000	0.0438	
82 9 29	101.8	98.2	0.0	3.5	0.9653	1.0000	0.0000	0.0347	
82 9 30	67.7	64.2	0.0	3.5	0.9478	1.0000	0.0000	0.0522	
82 10 1	55.7	52.3	0.0	3.4	0.9396	1.0000	0.0000	0.0604	
82 10 2	66.9	63.5	0.0	3.4	0.9497	1.0000	0.0000	0.0503	
82 10 3	66.3	62.8	0.0	3.5	0.9467	1.0000	0.0000	0.0533	
82 10 4	64.1	60.7	0.0	3.4	0.9475	1.0000	0.0000	0.0525	
82 10 5	102.5	99.1	0.0	3.4	0.9672	1.0000	0.0000	0.0328	
82 10 6	105.2	101.7	0.0	3.5	0.9664	1.0000	0.0000	0.0336	
82 10 7	102.8	98.9	0.0	3.9	0.9624	1.0000	0.0000	0.0376	
82 10 8	93.3	89.9	0.0	3.4	0.9640	1.0000	0.0000	0.0360	
82 10 9	85.4	82.0	0.0	3.4	0.9606	1.0000	0.0000	0.0394	
82 10 10	100.2	96.7	0.0	3.5	0.9647	1.0000	0.0000	0.0353	
82 10 11	78.8	75.4	0.0	3.4	0.9573	1.0000	0.0000	0.0427	
82 10 12	106.8	103.4	0.0	3.4	0.9685	1.0000	0.0000	0.0315	
82 10 13	99.5	96.5	0.0	3.0	0.9695	1.0000	0.0000	0.0305	
82 10 14	89.8	86.0	0.0	3.8	0.9580	1.0000	0.0000	0.0420	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 10 15	108.9	105.3	0.0	3.5	0.9675	1.0000	0.0000	0.0325	
82 10 16	115.6	111.9	0.0	3.7	0.9680	1.0000	0.0000	0.0320	
82 10 17	108.0	104.6	0.0	3.4	0.9688	1.0000	0.0000	0.0312	
82 10 18	97.0	94.6	0.0	3.4	0.9656	1.0000	0.0000	0.0344	
82 10 19	176.1	172.9	0.0	3.2	0.9818	1.0000	0.0000	0.0182	
82 10 20	120.7	117.5	0.0	3.2	0.9735	1.0000	0.0000	0.0265	
82 10 21	116.1	112.6	0.0	3.5	0.9696	1.0000	0.0000	0.0304	
82 10 22	86.7	83.5	0.0	3.2	0.9631	1.0000	0.0000	0.0369	
82 10 23	102.1	98.9	0.0	3.2	0.9687	1.0000	0.0000	0.0313	
82 10 24	68.7	65.2	0.0	3.5	0.9486	1.0000	0.0000	0.0514	
82 10 25	79.2	75.7	0.0	3.5	0.9554	1.0000	0.0000	0.0446	
82 10 26	118.3	115.1	0.0	3.2	0.9730	1.0000	0.0000	0.0270	
82 10 27	117.7	114.4	0.0	3.4	0.9714	1.0000	0.0000	0.0286	
82 10 28	133.8	130.3	0.0	3.5	0.9736	1.0000	0.0000	0.0264	
82 10 29	101.8	98.6	0.0	3.2	0.9686	1.0000	0.0000	0.0314	
82 10 30	149.4	146.1	0.0	3.4	0.9775	1.0000	0.0000	0.0225	
82 10 31	116.6	112.5	0.0	4.0	0.9654	1.0000	0.0000	0.0346	
82 11 1	96.1	92.7	0.0	3.4	0.9650	1.0000	0.0000	0.0350	
82 11 2	143.8	140.1	0.0	3.7	0.9743	1.0000	0.0000	0.0257	
82 11 3	137.2	133.8	0.0	3.4	0.9755	1.0000	0.0000	0.0245	
82 11 4	108.1	104.9	0.0	3.2	0.9704	1.0000	0.0000	0.0296	
82 11 5	104.0	100.7	0.0	3.4	0.9676	1.0000	0.0000	0.0324	
82 11 6	96.0	92.6	0.0	3.4	0.9649	1.0000	0.0000	0.0351	
82 11 7	128.5	125.1	0.0	3.4	0.9738	1.0000	0.0000	0.0262	
82 11 8	123.0	119.5	0.0	3.5	0.9713	1.0000	0.0000	0.0287	
82 11 9	125.0	121.4	0.0	3.5	0.9717	1.0000	0.0000	0.0283	
82 11 10	94.2	90.6	0.0	3.5	0.9625	1.0000	0.0000	0.0375	
82 11 11	101.7	98.2	0.0	3.5	0.9653	1.0000	0.0000	0.0347	
82 11 12	137.3	133.9	0.0	3.4	0.9755	1.0000	0.0000	0.0245	
82 11 13	139.9	136.6	0.0	3.4	0.9759	1.0000	0.0000	0.0241	
82 11 14	96.6	93.1	0.0	3.5	0.9634	1.0000	0.0000	0.0366	
82 11 15	119.7	116.3	0.0	3.4	0.9719	1.0000	0.0000	0.0281	
82 11 16	166.9	163.5	0.0	3.4	0.9798	1.0000	0.0000	0.0202	
82 11 17	113.8	110.1	0.0	3.7	0.9675	1.0000	0.0000	0.0325	
82 11 18	99.8	96.4	0.0	3.4	0.9663	1.0000	0.0000	0.0337	
82 11 19	82.3	79.0	0.0	3.4	0.9591	1.0000	0.0000	0.0409	
82 11 20	112.6	109.4	0.0	3.2	0.9716	1.0000	0.0000	0.0284	
82 11 21	95.6	92.3	0.0	3.4	0.9648	1.0000	0.0000	0.0352	
82 11 22	115.6	111.7	0.0	3.9	0.9666	1.0000	0.0000	0.0334	
82 11 23	138.2	135.0	0.0	3.2	0.9768	1.0000	0.0000	0.0232	
82 11 24	154.5	151.3	0.0	3.2	0.9793	1.0000	0.0000	0.0207	
82 11 25	107.5	104.2	0.0	3.4	0.9687	1.0000	0.0000	0.0313	
82 11 26	153.8	150.3	0.0	3.5	0.9770	1.0000	0.0000	0.0230	
82 11 27	120.1	116.9	0.0	3.2	0.9734	1.0000	0.0000	0.0266	
82 11 28	111.8	108.1	0.0	3.7	0.9667	1.0000	0.0000	0.0333	
82 11 29	130.9	127.7	0.0	3.2	0.9755	1.0000	0.0000	0.0245	
82 11 30	95.2	92.0	0.0	3.2	0.9664	1.0000	0.0000	0.0336	
82 12 1	108.9	105.7	0.0	3.2	0.9706	1.0000	0.0000	0.0294	
82 12 2	176.9	173.3	0.0	3.5	0.9800	1.0000	0.0000	0.0200	
82 12 3	60.8	57.1	0.0	3.7	0.9386	1.0000	0.0000	0.0614	
82 12 4	57.4	53.9	0.0	3.5	0.9385	1.0000	0.0000	0.0615	
82 12 5	82.1	78.7	0.0	3.4	0.9590	1.0000	0.0000	0.0410	
82 12 6	95.4	91.8	0.0	3.5	0.9630	1.0000	0.0000	0.0370	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE/TOTAL	TURBINE/TUR+SPL	SPILL/TOTAL	OTHER/TOTAL	COMMENTS
82 12 7	117.1	113.5	0.0	3.5	0.9698	1.0000	0.0000	0.0302	
82 12 8	130.5	126.9	0.0	3.6	0.9721	1.0000	0.0000	0.0279	
82 12 9	122.3	118.7	0.0	3.5	0.9711	1.0000	0.0000	0.0289	
82 12 10	139.9	136.3	0.0	3.5	0.9747	1.0000	0.0000	0.0253	
82 12 11	141.8	138.4	0.0	3.4	0.9763	1.0000	0.0000	0.0237	
82 12 12	109.5	106.1	0.0	3.4	0.9693	1.0000	0.0000	0.0307	
82 12 13	106.2	102.8	0.0	3.4	0.9683	1.0000	0.0000	0.0317	
82 12 14	89.6	86.4	0.0	3.2	0.9643	1.0000	0.0000	0.0357	
82 12 15	83.5	80.3	0.0	3.2	0.9617	1.0000	0.0000	0.0383	
82 12 16	93.4	90.2	0.0	3.2	0.9658	1.0000	0.0000	0.0342	
82 12 17	88.2	85.0	0.0	3.2	0.9637	1.0000	0.0000	0.0363	
82 12 18	121.0	117.8	0.0	3.2	0.9736	1.0000	0.0000	0.0264	
82 12 19	108.0	104.8	0.0	3.2	0.9704	1.0000	0.0000	0.0296	
82 12 20	126.4	123.3	0.0	3.1	0.9751	1.0000	0.0000	0.0249	
82 12 21	133.9	130.1	0.0	3.9	0.9711	1.0000	0.0000	0.0289	
82 12 22	102.5	92.7	0.0	9.8	0.9045	1.0000	0.0000	0.0955	
82 12 23	101.5	97.9	0.0	3.5	0.9652	1.0000	0.0000	0.0348	
82 12 24	89.8	86.4	0.0	3.4	0.9625	1.0000	0.0000	0.0375	
82 12 25	111.6	108.4	0.0	3.2	0.9713	1.0000	0.0000	0.0287	
82 12 26	90.6	87.2	0.0	3.4	0.9628	1.0000	0.0000	0.0372	
82 12 27	96.6	93.2	0.0	3.4	0.9652	1.0000	0.0000	0.0348	
82 12 28	103.3	100.1	0.0	3.2	0.9690	1.0000	0.0000	0.0310	
82 12 29	119.5	116.3	0.0	3.2	0.9732	1.0000	0.0000	0.0268	
82 12 30	142.0	138.6	0.0	3.4	0.9763	1.0000	0.0000	0.0237	
82 12 31	154.9	151.7	0.0	3.2	0.9793	1.0000	0.0000	0.0207	
83 12 1	164.6	161.4	0.0	3.2	0.9806	1.0000	0.0000	0.0194	* HOURLY RECORD MISSING *

TOTAL RECORD(S) READ = 6599

THIS REPORT WAS PRODUCED TO SHOW, FOR A USER SPECIFIED TIME PERIOD, THE AVERAGE WATER FLOWS ASSOCIATED WITH A PARTICULAR DAMSITE, AND SEVERAL RATIOS OF THESE FLOWS. THE SPECIFIED TIME PERIOD USED FOR THIS REPORT IS INDICATED BY ASTERISKS BENEATH ALL INCLUDED HOURS. THE DATE COLUMN HAS THE DATE OF THE LAST HOUR FOR THE SPECIFIED TIME PERIOD. FLOWS ARE MEASURED IN KILO CUBIC FEET PER SECOND (KCFS).

SPECIFIED TIME PERIOD

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(FIRST DAY)    1 1 1 1 1 1 1 1 1 1 2 2 2 2 2    (SECOND DAY)   1 1 1 1 1 1 1 1 1 1 2 2 2 2 2
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
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RIVER FLOW DATA AT THE JOHN DAY DAM SITE

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE TOTAL	TURBINE TRB+SPL	UNIT #3 TRB+SPL	SPILL TOTAL	OTHER TOTAL	COMMENTS
82 4 1	284.9	202.0	14.4	81.8	1.2	0.7089	0.7118	0.0508	0.2871	0.0040	HOURLY RECORD MISSING
82 4 2	291.1	283.6	18.9	6.4	1.0	0.9745	0.9779	0.0652	0.0221	0.0035	
82 4 3	285.9	223.4	14.0	61.5	1.0	0.7814	0.7842	0.0490	0.2151	0.0035	
82 4 4	270.1	188.1	14.1	80.7	1.2	0.6966	0.6998	0.0525	0.2988	0.0046	
82 4 5	253.8	172.0	14.2	80.8	1.2	0.6777	0.6809	0.0562	0.3176	0.0047	
82 4 6	276.1	275.3	17.2	0.0	0.8	0.9971	1.0000	0.0625	0.0000	0.0029	
82 4 7	278.9	277.9	18.5	0.0	1.0	0.9964	1.0000	0.0667	0.0000	0.0036	
82 4 8	220.2	219.4	15.0	0.0	0.8	0.9964	1.0000	0.0682	0.0000	0.0036	
82 4 9	210.3	183.4	16.3	25.8	1.4	0.8718	0.8776	0.0782	0.1216	0.0067	
82 4 10	173.0	111.2	13.9	61.0	0.8	0.6426	0.6455	0.0807	0.3528	0.0046	
82 4 11	239.0	157.2	13.5	80.7	1.0	0.6580	0.6608	0.0566	0.3377	0.0042	
82 4 12	199.3	130.5	13.2	67.8	1.0	0.6546	0.6579	0.0665	0.3404	0.0050	
82 4 13	261.8	170.7	14.4	90.1	1.0	0.6522	0.6547	0.0551	0.3440	0.0038	
82 4 14	354.0	232.1	15.9	120.9	1.0	0.6557	0.6576	0.0452	0.3415	0.0028	
82 4 15	328.1	231.8	15.9	95.3	1.0	0.7065	0.7087	0.0487	0.2904	0.0030	
82 4 16	411.1	323.3	20.2	86.9	1.0	0.7863	0.7882	0.0493	0.2113	0.0024	
82 4 17	269.8	169.0	14.9	99.4	1.4	0.6264	0.6297	0.0556	0.3683	0.0052	
82 4 18	280.0	225.7	17.3	50.4	1.0	0.8167	0.8195	0.0620	0.1798	0.0035	
82 4 19	303.3	223.4	15.5	78.9	1.0	0.7365	0.7389	0.0512	0.2602	0.0033	
82 4 20	342.4	254.8	17.9	86.7	0.8	0.7443	0.7461	0.0525	0.2533	0.0024	
82 4 21	330.8	254.4	16.5	75.8	0.8	0.7690	0.7708	0.0499	0.2286	0.0024	
82 4 22	314.8	249.5	17.4	64.3	1.0	0.7925	0.7951	0.0555	0.2043	0.0032	
82 4 23	276.0	200.2	14.3	74.8	1.0	0.7254	0.7281	0.0520	0.2709	0.0037	
82 4 24	228.9	155.1	14.9	73.0	0.8	0.6778	0.6802	0.0651	0.3187	0.0034	
82 4 25	297.5	196.5	15.1	99.7	1.3	0.6605	0.6634	0.0510	0.3351	0.0044	HOURLY RECORD MISSING
82 4 26	250.3	149.8	14.7	99.7	0.8	0.5984	0.6004	0.0587	0.3983	0.0033	
82 4 27	251.2	150.4	14.9	99.7	1.0	0.5989	0.6013	0.0595	0.3971	0.0040	
82 4 28	275.2	181.3	13.0	92.9	1.0	0.6588	0.6612	0.0472	0.3375	0.0037	
82 4 29	267.7	196.4	14.7	70.1	1.2	0.7336	0.7370	0.0553	0.2618	0.0046	
82 4 30	249.5	160.1	13.7	88.4	1.0	0.6416	0.6442	0.0552	0.3544	0.0040	
82 5 1	268.7	168.0	15.3	99.7	1.0	0.6252	0.6275	0.0570	0.3711	0.0037	
82 5 2	285.1	184.6	15.4	99.7	0.8	0.6475	0.6493	0.0541	0.3497	0.0028	
82 5 3	281.3	180.4	15.3	99.7	1.2	0.6413	0.6440	0.0547	0.3545	0.0043	
82 5 4	327.0	232.1	18.2	94.1	0.8	0.7097	0.7114	0.0557	0.2879	0.0024	
82 5 5	341.4	234.4	15.6	105.8	1.4	0.6856	0.6894	0.0460	0.3093	0.0041	
82 5 6	326.0	204.7	14.5	120.2	1.0	0.6281	0.6300	0.0446	0.3688	0.0031	
82 5 7	306.1	185.0	13.9	120.3	0.8	0.6043	0.6059	0.0454	0.3931	0.0026	
82 5 8	275.0	153.5	13.8	120.3	1.2	0.5582	0.5606	0.0505	0.4375	0.0044	

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE / TOTAL	TURBINE / TRB+SPL	UNIT #3 / TRB+SPL	SPILL / TOTAL	OTHER / TOTAL	COMMENTS
82 5 9	331.9	210.4	19.1	120.4	1.1	0.6339	0.6360	0.0578	0.3628	0.0032	
82 5 10	328.7	212.7	17.1	115.0	1.0	0.6472	0.6491	0.0522	0.3498	0.0030	
82 5 11	352.3	231.0	16.5	120.3	1.0	0.6557	0.6576	0.0470	0.3414	0.0028	
82 5 12	338.1	223.9	16.8	113.0	1.2	0.6622	0.6646	0.0498	0.3343	0.0035	
82 5 13	307.8	191.7	16.1	115.5	0.6	0.6227	0.6240	0.0525	0.3753	0.0020	
82 5 14	314.3	192.6	14.6	120.7	1.0	0.6129	0.6149	0.0465	0.3839	0.0032	
82 5 15	322.6	205.8	13.6	115.8	1.0	0.6379	0.6399	0.0423	0.3590	0.0031	
82 5 16	334.8	213.2	14.2	120.4	1.2	0.6367	0.6390	0.0426	0.3598	0.0035	
82 5 17	353.4	231.9	16.6	120.3	1.2	0.6562	0.6585	0.0470	0.3404	0.0034	
82 5 18	396.2	246.4	17.6	150.4	1.4	0.6188	0.6210	0.0444	0.3777	0.0035	
82 5 19	368.4	217.1	15.1	150.6	0.8	0.5892	0.5905	0.0412	0.4086	0.0022	
82 5 20	386.9	235.8	17.5	149.9	1.2	0.6095	0.6114	0.0455	0.3875	0.0030	
82 5 21	443.5	296.1	19.7	146.4	1.0	0.6676	0.6691	0.0446	0.3301	0.0023	
82 5 22	397.5	248.5	17.5	147.8	1.2	0.6252	0.6271	0.0441	0.3718	0.0030	
82 5 23	362.7	210.9	16.5	150.4	1.4	0.5814	0.5837	0.0457	0.4147	0.0039	
82 5 24	394.3	243.0	17.4	150.6	0.8	0.6161	0.6174	0.0441	0.3819	0.0020	
82 5 25	393.2	241.6	16.1	150.4	1.2	0.6144	0.6163	0.0411	0.3825	0.0031	
82 5 26	403.2	251.5	16.8	150.4	1.3	0.6237	0.6258	0.0417	0.3730	0.0033	
82 5 27	413.5	262.2	16.7	150.3	1.0	0.6340	0.6356	0.0406	0.3636	0.0024	
82 5 28	408.6	257.2	17.1	150.4	1.0	0.6294	0.6310	0.0421	0.3681	0.0025	
82 5 29	354.3	202.9	16.9	150.4	1.0	0.5727	0.5743	0.0479	0.4245	0.0029	
82 5 30	401.3	219.6	15.7	180.5	1.2	0.5473	0.5489	0.0392	0.4498	0.0029	
82 5 31	345.1	163.6	14.3	180.5	1.0	0.4740	0.4754	0.0415	0.5231	0.0029	
82 6 1	265.1	83.8	15.1	179.9	1.4	0.3162	0.3179	0.0572	0.6785	0.0053	
82 6 2	331.9	179.7	15.0	150.4	1.9	0.5412	0.5444	0.0454	0.4530	0.0057	
82 6 3	301.3	147.0	14.5	153.5	0.8	0.4880	0.4893	0.0484	0.5094	0.0027	
82 6 4	372.9	221.4	15.7	150.1	1.4	0.5937	0.5959	0.0422	0.4026	0.0038	
82 6 5	313.9	187.8	14.7	125.2	1.0	0.5981	0.6000	0.0470	0.3987	0.0032	
82 6 6	350.3	198.6	16.6	150.4	1.3	0.5670	0.5691	0.0474	0.4293	0.0037	
82 6 7	367.4	216.2	17.7	150.4	0.8	0.5885	0.5897	0.0482	0.4094	0.0021	
82 6 8	339.0	187.6	18.8	150.4	1.0	0.5534	0.5550	0.0555	0.4437	0.0030	
82 6 9	324.7	205.1	15.3	118.8	0.8	0.6317	0.6332	0.0471	0.3659	0.0025	
82 6 10	316.2	214.3	16.3	101.0	1.0	0.6775	0.6797	0.0518	0.3193	0.0032	
82 6 11	306.6	194.3	15.6	111.5	0.8	0.6336	0.6353	0.0510	0.3638	0.0026	
82 6 12	326.1	174.7	15.3	150.4	1.0	0.5358	0.5374	0.0470	0.4611	0.0031	
82 6 13	318.1	166.6	16.3	150.5	1.0	0.5239	0.5255	0.0514	0.4730	0.0031	
82 6 14	276.5	125.1	16.1	150.4	1.0	0.4524	0.4541	0.0584	0.5439	0.0037	
82 6 15	397.3	246.1	17.6	150.4	0.8	0.6194	0.6207	0.0443	0.3786	0.0020	
82 6 16	400.2	262.2	16.4	137.0	1.0	0.6551	0.6568	0.0410	0.3423	0.0025	
82 6 17	419.6	275.9	17.2	143.0	0.6	0.6577	0.6586	0.0412	0.3409	0.0014	
82 6 18	424.1	268.4	16.8	155.1	0.6	0.6329	0.6337	0.0396	0.3657	0.0014	
82 6 19	438.5	287.3	18.0	149.9	1.2	0.6554	0.6572	0.0411	0.3419	0.0027	
82 6 20	438.5	237.3	18.0	150.4	0.8	0.6552	0.6564	0.0410	0.3430	0.0018	
82 6 21	437.4	287.1	17.9	149.5	0.8	0.6563	0.6575	0.0411	0.3419	0.0018	
82 6 22	436.8	256.6	16.0	179.3	1.0	0.5873	0.5887	0.0368	0.4104	0.0023	
82 6 23	434.8	255.6	16.0	178.2	1.0	0.5879	0.5892	0.0368	0.4098	0.0023	
82 6 24	438.6	254.7	15.9	183.1	0.8	0.5807	0.5818	0.0364	0.4175	0.0018	
82 6 25	440.6	257.9	16.1	181.7	1.0	0.5854	0.5867	0.0367	0.4123	0.0022	
82 6 26	420.2	272.6	17.0	146.8	0.8	0.6487	0.6500	0.0406	0.3494	0.0019	
82 6 27	423.4	270.2	16.9	152.4	0.8	0.6331	0.6394	0.0400	0.3600	0.0019	
82 6 28	421.7	268.9	16.8	152.0	0.7	0.6378	0.6389	0.0399	0.3605	0.0018	
82 6 29	421.4	269.2	16.8	151.0	1.2	0.6399	0.6407	0.0400	0.3583	0.0029	
82 6 30	420.1	269.7	17.2	149.2	1.2	0.6420	0.6438	0.0411	0.3551	0.0029	

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE TOTAL	TURBINE TRB+SPL	UNIT #3 TRB+SPL	SPILL TOTAL	OTHER TOTAL	COMMENTS
	*** AVERAGE HOURLY FLOWS *****					SELECTED FLOW RATIOS ***					
82 7 1	420.8	226.3	14.1	193.6	0.8	0.5379	0.5389	0.0337	0.4602	0.0019	
82 7 2	420.0	226.1	14.1	193.2	0.8	0.5382	0.5392	0.0337	0.4600	0.0019	
82 7 3	399.6	209.7	13.6	189.0	1.0	0.5247	0.5260	0.0341	0.4728	0.0025	
82 7 4	398.9	207.4	13.8	190.9	0.6	0.5200	0.5208	0.0347	0.4785	0.0015	
82 7 5	391.7	194.4	13.9	196.3	1.0	0.4963	0.4976	0.0355	0.5012	0.0025	
82 7 6	349.6	166.5	13.9	182.3	0.8	0.4762	0.4774	0.0398	0.5214	0.0024	
82 7 7	360.1	188.1	15.7	171.0	1.0	0.5224	0.5238	0.0437	0.4749	0.0027	
82 7 8	360.9	181.7	15.3	178.4	0.8	0.5034	0.5045	0.0424	0.4944	0.0022	
82 7 9	320.3	146.9	14.4	172.8	0.6	0.4587	0.4595	0.0450	0.5394	0.0019	
82 7 10	289.1	136.1	15.1	152.0	1.0	0.4709	0.4725	0.0525	0.5257	0.0035	
82 7 11	317.9	169.7	15.4	147.2	1.0	0.5338	0.5355	0.0487	0.4631	0.0031	
82 7 12	318.6	173.8	14.1	143.7	1.0	0.5457	0.5474	0.0444	0.4511	0.0031	
82 7 13	261.0	109.8	13.5	150.4	0.8	0.4206	0.4219	0.0520	0.5763	0.0031	
82 7 14	278.6	141.3	14.1	136.3	1.0	0.5072	0.5091	0.0509	0.4892	0.0036	
82 7 15	293.8	142.8	14.8	150.4	0.6	0.4860	0.4870	0.0504	0.5119	0.0020	
82 7 16	280.4	135.7	13.5	143.7	1.0	0.4840	0.4858	0.0486	0.5124	0.0036	
82 7 17	250.5	132.8	13.6	116.5	1.2	0.5302	0.5327	0.0545	0.4651	0.0047	
82 7 18	251.7	131.4	13.9	119.4	1.0	0.5219	0.5240	0.0555	0.4742	0.0040	
82 7 19	198.1	118.1	13.1	79.2	0.8	0.5962	0.5986	0.0665	0.3998	0.0040	
82 7 20	209.5	128.8	13.2	79.3	1.4	0.6149	0.6191	0.0633	0.3784	0.0067	
82 7 21	197.5	193.3	13.8	3.2	1.0	0.9788	0.9837	0.0703	0.0162	0.0050	
82 7 22	234.4	166.7	13.3	66.8	1.0	0.7109	0.7139	0.0569	0.2848	0.0043	
82 7 23	240.7	142.1	13.5	97.4	1.2	0.5905	0.5934	0.0562	0.4046	0.0050	
82 7 24	188.7	170.4	15.6	16.7	1.6	0.9031	0.9108	0.0836	0.0884	0.0085	
82 7 25	179.1	134.1	13.1	44.2	0.8	0.7488	0.7521	0.0736	0.2468	0.0045	
82 7 26	187.2	148.8	13.3	37.4	1.0	0.7949	0.7991	0.0712	0.1998	0.0053	
82 7 27	191.1	171.3	14.5	19.0	0.8	0.8965	0.9004	0.0764	0.0992	0.0043	
82 7 28	194.8	169.3	14.8	24.5	1.0	0.8689	0.8734	0.0763	0.1259	0.0051	
82 7 29	150.4	141.3	14.6	8.1	1.0	0.9393	0.9456	0.0978	0.0541	0.0066	
82 7 30	171.8	162.2	15.4	8.8	0.8	0.9444	0.9488	0.0899	0.0510	0.0047	
82 7 31	171.1	162.4	16.2	8.3	0.5	0.9490	0.9516	0.0952	0.0483	0.0027	
82 8 1	132.5	122.8	14.0	8.8	0.8	0.9274	0.9330	0.1063	0.0666	0.0060	
82 8 2	119.9	110.2	13.2	8.7	1.0	0.9188	0.9266	0.1112	0.0727	0.0084	
82 8 3	125.4	115.5	13.7	8.7	1.2	0.9210	0.9299	0.1101	0.0694	0.0096	
82 8 4	135.7	125.7	13.3	8.8	1.2	0.9263	0.9346	0.0990	0.0648	0.0088	
82 8 5	140.6	140.0	13.4	0.0	0.6	0.9957	1.0000	0.0957	0.0000	0.0043	
82 8 6	207.9	107.1	13.8	99.9	0.8	0.5154	0.5175	0.0665	0.4805	0.0041	
82 8 7	226.8	225.9	16.1	0.0	1.0	0.9956	1.0000	0.0714	0.0000	0.0044	
82 8 8	232.0	230.8	16.5	0.0	1.2	0.9948	1.0000	0.0714	0.0000	0.0052	
82 8 9	178.4	177.8	13.2	0.0	0.6	0.9966	1.0000	0.0744	0.0000	0.0034	
82 8 10	148.0	147.0	14.2	0.0	1.0	0.9932	1.0000	0.0968	0.0000	0.0068	
82 8 11	127.5	126.3	13.2	0.0	1.2	0.9906	1.0000	0.1047	0.0000	0.0094	
82 8 12	124.6	123.6	13.6	0.0	1.0	0.9920	1.0000	0.1098	0.0000	0.0080	
82 8 13	127.5	126.5	14.4	0.0	1.0	0.9922	1.0000	0.1139	0.0000	0.0078	
82 8 14	168.4	167.6	13.5	0.0	0.8	0.9952	1.0000	0.0804	0.0000	0.0048	
82 8 15	103.7	102.9	13.0	0.0	0.8	0.9923	1.0000	0.1268	0.0000	0.0077	
82 8 16	89.5	88.7	13.3	0.0	0.8	0.9911	1.0000	0.1500	0.0000	0.0089	
82 8 17	135.8	135.0	14.3	0.0	0.8	0.9941	1.0000	0.1059	0.0000	0.0059	
82 8 18	132.3	131.2	13.7	0.0	1.0	0.9924	1.0000	0.1047	0.0000	0.0076	
82 8 19	160.4	159.4	14.1	0.0	1.0	0.9938	1.0000	0.0882	0.0000	0.0062	
82 8 20	146.5	145.7	13.2	0.0	0.8	0.9945	1.0000	0.0909	0.0000	0.0055	
82 8 21	158.5	134.6	15.0	22.7	1.2	0.8494	0.8557	0.0951	0.1432	0.0074	
82 8 22	137.9	136.9	13.5	0.0	1.0	0.9927	1.0000	0.0989	0.0000	0.0073	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE / TOTAL	TURBINE / TRB+SPL	UNIT #3 / TRB+SPL	SPILL / TOTAL	OTHER / TOTAL	COMMENTS
82 8 23	120.6	119.6	14.2	0.0	1.0	0.9917	1.0000	0.1184	0.0000	0.0083	
82 8 24	110.5	109.7	13.2	0.0	0.8	0.9928	1.0000	0.1200	0.0000	0.0072	
82 8 25	135.1	134.2	14.9	0.0	0.9	0.9931	1.0000	0.1111	0.0000	0.0069	
82 8 26	104.6	103.8	13.7	0.0	0.8	0.9924	1.0000	0.1324	0.0000	0.0076	
82 8 27	95.2	94.6	13.1	0.0	0.6	0.9937	1.0000	0.1385	0.0000	0.0063	
82 8 28	80.3	78.9	13.2	0.0	1.4	0.9823	1.0000	0.1667	0.0000	0.0177	
82 8 29	86.3	85.3	13.2	0.0	1.0	0.9884	1.0000	0.1552	0.0000	0.0116	
82 8 30	84.0	83.0	12.9	0.0	1.0	0.9881	1.0000	0.1552	0.0000	0.0119	
82 8 31	87.2	86.2	14.6	0.0	1.0	0.9885	1.0000	0.1698	0.0000	0.0115	
82 9 1	121.8	120.8	14.3	0.0	1.0	0.9918	1.0000	0.1184	0.0000	0.0082	
82 9 2	108.2	107.4	14.0	0.0	0.8	0.9926	1.0000	0.1304	0.0000	0.0074	
82 9 3	92.6	91.6	12.7	0.0	1.0	0.9892	1.0000	0.1385	0.0000	0.0108	
82 9 4	96.6	95.4	13.0	0.0	1.2	0.9876	1.0000	0.1364	0.0000	0.0124	
82 9 5	92.7	91.9	13.1	0.0	0.8	0.9914	1.0000	0.1429	0.0000	0.0086	
82 9 6	88.8	86.0	13.6	0.0	0.8	0.9908	1.0000	0.1579	0.0000	0.0092	
82 9 7	94.8	94.0	13.9	0.0	0.8	0.9916	1.0000	0.1475	0.0000	0.0084	
82 9 8	118.7	118.1	13.5	0.0	0.6	0.9949	1.0000	0.1139	0.0000	0.0051	
82 9 9	151.5	150.5	14.1	0.0	1.0	0.9935	1.0000	0.0938	0.0000	0.0065	
82 9 10	135.3	134.3	13.3	0.0	1.0	0.9926	1.0000	0.0989	0.0000	0.0074	
82 9 11	111.0	110.2	13.6	0.0	0.8	0.9928	1.0000	0.1233	0.0000	0.0072	
82 9 12	99.9	99.0	13.5	0.0	0.9	0.9907	1.0000	0.1364	0.0000	0.0093	
82 9 13	94.0	93.4	12.7	0.0	0.6	0.9936	1.0000	0.1364	0.0000	0.0064	
82 9 14	119.6	118.7	13.7	0.0	0.8	0.9930	1.0000	0.1154	0.0000	0.0070	
82 9 15	135.1	134.1	14.5	0.0	1.0	0.9926	1.0000	0.1084	0.0000	0.0074	
82 9 16	107.8	107.2	13.8	0.0	0.6	0.9944	1.0000	0.1286	0.0000	0.0056	
82 9 17	100.4	99.6	15.2	0.0	0.8	0.9920	1.0000	0.1525	0.0000	0.0080	
82 9 18	89.5	88.5	13.5	0.0	1.0	0.9888	1.0000	0.1525	0.0000	0.0112	
82 9 19	85.6	84.6	13.4	0.0	1.0	0.9883	1.0000	0.1579	0.0000	0.0117	
82 9 20	90.4	89.8	13.0	0.0	0.6	0.9934	1.0000	0.1452	0.0000	0.0066	
82 9 21	92.0	91.2	13.7	0.0	0.8	0.9913	1.0000	0.1500	0.0000	0.0087	
82 9 22	83.1	82.1	13.7	0.0	1.0	0.9880	1.0000	0.1667	0.0000	0.0120	
82 9 23	84.9	83.7	13.2	0.0	1.2	0.9859	1.0000	0.1579	0.0000	0.0141	
82 9 24	84.9	84.3	12.9	0.0	0.6	0.9929	1.0000	0.1525	0.0000	0.0071	
82 9 25	82.8	81.8	13.6	0.0	1.0	0.9879	1.0000	0.1667	0.0000	0.0121	
82 9 26	64.7	63.9	13.4	0.0	0.8	0.9876	1.0000	0.2093	0.0000	0.0124	
82 9 27	69.0	68.2	12.8	0.0	0.8	0.9884	1.0000	0.1875	0.0000	0.0116	
82 9 28	99.8	98.8	13.1	0.0	1.0	0.9900	1.0000	0.1324	0.0000	0.0100	
82 9 29	91.6	90.8	13.4	0.0	0.8	0.9913	1.0000	0.1475	0.0000	0.0087	
82 9 30	79.5	78.3	14.1	0.0	1.2	0.9849	1.0000	0.1800	0.0000	0.0151	
82 10 1	83.0	82.0	12.7	0.0	1.0	0.9880	1.0000	0.1552	0.0000	0.0120	
82 10 2	87.6	85.8	13.5	0.0	0.8	0.9909	1.0000	0.1552	0.0000	0.0091	
82 10 3	78.3	77.5	12.7	0.0	0.8	0.9898	1.0000	0.1636	0.0000	0.0102	
82 10 4	82.3	81.3	13.8	0.0	1.0	0.9879	1.0000	0.1698	0.0000	0.0121	
82 10 5	97.5	96.5	13.9	0.0	1.0	0.9897	1.0000	0.1429	0.0000	0.0103	
82 10 6	102.0	101.2	12.6	0.0	0.8	0.9922	1.0000	0.1250	0.0000	0.0078	
82 10 7	106.0	105.3	13.0	0.0	0.7	0.9935	1.0000	0.1233	0.0000	0.0065	
82 10 8	100.2	99.4	13.3	0.0	0.8	0.9920	1.0000	0.1343	0.0000	0.0080	
82 10 9	95.3	94.5	13.9	0.0	0.8	0.9916	1.0000	0.1475	0.0000	0.0084	
82 10 10	90.1	89.3	13.2	0.0	0.8	0.9911	1.0000	0.1475	0.0000	0.0089	
82 10 11	88.5	87.5	13.6	0.0	1.0	0.9887	1.0000	0.1552	0.0000	0.0113	
82 10 12	111.3	109.9	13.4	0.0	1.4	0.9874	1.0000	0.1216	0.0000	0.0126	
82 10 13	108.6	107.8	12.9	0.0	0.8	0.9926	1.0000	0.1200	0.0000	0.0074	
82 10 14	103.8	103.0	12.5	0.0	0.8	0.9923	1.0000	0.1216	0.0000	0.0077	

DATE YY/MM/DD	AVERAGE HOURLY FLOWS: TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	SELECTED FLOW RATIOS: TURBINE TOTAL	TURBINE TRB+SPL	UNIT #3 TRB+SPL	SPILL TOTAL	OTHER TOTAL	COMMENTS
82 10 15	113.4	112.4	13.3	0.0	1.0	0.9912	1.0000	0.1184	0.0000	0.0088	
82 10 16	113.0	112.0	12.3	0.0	1.0	0.9912	1.0000	0.1139	0.0000	0.0088	
82 10 17	109.4	108.6	13.6	0.0	0.8	0.9927	1.0000	0.1250	0.0000	0.0073	
82 10 18	111.0	110.2	14.6	0.0	0.8	0.9928	1.0000	0.1324	0.0000	0.0072	
82 10 19	148.0	147.2	13.4	0.0	0.8	0.9946	1.0000	0.0909	0.0000	0.0054	
82 10 20	139.7	139.1	13.9	0.0	0.6	0.9957	1.0000	0.1000	0.0000	0.0043	
82 10 21	127.0	126.4	13.1	0.0	0.6	0.9953	1.0000	0.1034	0.0000	0.0047	
82 10 22	107.8	107.2	13.0	0.0	0.6	0.9944	1.0000	0.1216	0.0000	0.0056	
82 10 23	94.2	93.6	14.3	0.0	0.6	0.9936	1.0000	0.1525	0.0000	0.0064	
82 10 24	88.0	87.0	13.5	0.0	1.0	0.9886	1.0000	0.1552	0.0000	0.0114	
82 10 25	91.5	90.3	14.0	0.0	1.2	0.9869	1.0000	0.1552	0.0000	0.0131	
82 10 26	101.8	101.2	13.0	0.0	0.6	0.9941	1.0000	0.1286	0.0000	0.0059	
82 10 27	108.8	108.0	13.0	0.0	0.8	0.9926	1.0000	0.1200	0.0000	0.0074	
82 10 28	123.3	122.3	13.3	0.0	1.0	0.9919	1.0000	0.1084	0.0000	0.0081	
82 10 29	122.7	121.9	14.3	0.0	0.8	0.9935	1.0000	0.1169	0.0000	0.0065	
82 10 30	146.8	146.0	14.3	0.0	0.8	0.9946	1.0000	0.0978	0.0000	0.0054	
82 10 31	148.0	147.2	14.7	0.0	0.8	0.9946	1.0000	0.1000	0.0000	0.0054	
82 11 1	123.1	122.3	14.3	0.0	0.8	0.9935	1.0000	0.1169	0.0000	0.0065	
82 11 2	157.8	156.8	14.9	0.0	1.0	0.9937	1.0000	0.0947	0.0000	0.0063	
82 11 3	166.5	165.7	14.2	0.0	0.8	0.9952	1.0000	0.0857	0.0000	0.0048	
82 11 4	114.3	112.9	13.0	0.0	1.4	0.9878	1.0000	0.1154	0.0000	0.0122	
82 11 5	123.5	122.7	13.6	0.0	0.8	0.9935	1.0000	0.1111	0.0000	0.0065	
82 11 6	120.6	119.4	13.6	0.0	1.2	0.9900	1.0000	0.1139	0.0000	0.0100	
82 11 7	116.7	115.9	14.5	0.0	0.8	0.9931	1.0000	0.1250	0.0000	0.0069	
82 11 8	114.6	113.4	13.1	0.0	1.2	0.9895	1.0000	0.1154	0.0000	0.0105	
82 11 9	121.8	120.7	15.1	0.0	1.1	0.9909	1.0000	0.1250	0.0000	0.0091	
82 11 10	134.6	133.4	14.3	0.0	1.2	0.9911	1.0000	0.1071	0.0000	0.0089	
82 11 11	109.5	108.7	13.8	0.0	0.8	0.9927	1.0000	0.1268	0.0000	0.0073	
82 11 12	119.4	118.6	14.2	0.0	0.8	0.9933	1.0000	0.1200	0.0000	0.0067	
82 11 13	126.7	125.7	13.6	0.0	1.0	0.9921	1.0000	0.1084	0.0000	0.0079	
82 11 14	113.7	112.7	13.2	0.0	1.0	0.9912	1.0000	0.1169	0.0000	0.0088	
82 11 15	109.0	108.4	13.5	0.0	0.6	0.9945	1.0000	0.1250	0.0000	0.0055	
82 11 16	115.9	114.7	15.0	0.0	1.2	0.9896	1.0000	0.1304	0.0000	0.0104	
82 11 17	120.4	119.6	14.0	0.0	0.8	0.9934	1.0000	0.1169	0.0000	0.0066	
82 11 18	108.6	106.8	14.3	0.0	0.1	1.0010	1.0000	0.1343	0.0000	.0010	
82 11 19	102.1	101.3	13.6	0.0	0.8	0.9922	1.0000	0.1343	0.0000	0.0078	
82 11 20	112.9	112.1	13.5	0.0	0.8	0.9929	1.0000	0.1200	0.0000	0.0071	
82 11 21	101.9	101.1	13.2	0.0	0.8	0.9922	1.0000	0.1304	0.0000	0.0078	
82 11 22	98.2	97.8	13.3	0.0	0.4	0.9962	1.0000	0.1364	0.0000	0.0038	
82 11 23	96.6	95.8	13.3	0.0	0.8	0.9917	1.0000	0.1385	0.0000	0.0083	
82 11 24	114.7	113.5	14.0	0.0	1.2	0.9895	1.0000	0.1233	0.0000	0.0105	
82 11 25	102.5	101.7	13.5	0.0	0.8	0.9922	1.0000	0.1324	0.0000	0.0078	
82 11 26	129.6	128.8	12.9	0.0	0.8	0.9938	1.0000	0.1000	0.0000	0.0062	
82 11 27	126.3	125.7	12.6	0.0	0.6	0.9953	1.0000	0.1000	0.0000	0.0047	
82 11 28	123.3	122.5	13.1	0.0	0.8	0.9935	1.0000	0.1071	0.0000	0.0065	
82 11 29	103.9	103.3	13.7	0.0	0.6	0.9942	1.0000	0.1324	0.0000	0.0058	
82 11 30	93.2	92.6	12.8	0.0	0.6	0.9932	1.0000	0.1385	0.0000	0.0068	
82 12 1	108.6	107.2	14.2	0.0	1.4	0.9871	1.0000	0.1324	0.0000	0.0129	
82 12 2	143.3	142.0	16.0	0.0	1.3	0.9909	1.0000	0.1125	0.0000	0.0091	
82 12 3	138.4	137.9	14.3	0.0	0.5	0.9964	1.0000	0.1034	0.0000	0.0036	
82 12 4	107.9	106.8	13.2	0.0	1.1	0.9898	1.0000	0.1233	0.0000	0.0102	
82 12 5	110.1	108.8	14.6	0.0	1.2	0.9887	1.0000	0.1343	0.0000	0.0113	
82 12 6	118.3	117.6	15.8	0.0	0.7	0.9941	1.0000	0.1343	0.0000	0.0059	

DATE YY/MM/DD	TOTAL RIVER	TURBINE (ALL)	TURBINE UNIT #3	SPILL	OTHER	TURBINE TOTAL	TURBINE TRB+SPL	UNIT #3 TRB+SPL	SPILL TOTAL	OTHER TOTAL	COMMENTS
	*** AVERAGE HOURLY FLOWS *****					SELECTED FLOW RATIOS ***					
82 12 7	133.9	133.0	15.0	0.0	0.9	0.9933	1.0000	0.1125	0.0000	0.0067	
82 12 8	151.9	151.2	14.2	0.0	0.7	0.9954	1.0000	0.0938	0.0000	0.0046	
82 12 9	135.9	134.7	13.9	0.0	1.2	0.9912	1.0000	0.1034	0.0000	0.0088	
82 12 10	151.0	150.0	14.2	0.0	1.0	0.9933	1.0000	0.0947	0.0000	0.0067	
82 12 11	150.2	149.0	13.5	0.0	1.2	0.9920	1.0000	0.0909	0.0000	0.0080	
82 12 12	106.7	105.9	13.2	0.0	0.8	0.9925	1.0000	0.1250	0.0000	0.0075	
82 12 13	112.5	111.9	14.0	0.0	0.6	0.9946	1.0000	0.1250	0.0000	0.0054	
82 12 14	106.5	105.9	14.0	0.0	0.6	0.9944	1.0000	0.1324	0.0000	0.0056	
82 12 15	102.7	102.1	13.5	0.0	0.6	0.9942	1.0000	0.1324	0.0000	0.0058	
82 12 16	94.8	94.2	13.5	0.0	0.6	0.9937	1.0000	0.1429	0.0000	0.0063	
82 12 17	94.3	93.7	13.2	0.0	0.6	0.9936	1.0000	0.1406	0.0000	0.0064	
82 12 18	119.3	118.7	13.7	0.0	0.6	0.9950	1.0000	0.1154	0.0000	0.0050	
82 12 19	105.1	104.5	12.7	0.0	0.6	0.9943	1.0000	0.1216	0.0000	0.0057	
82 12 20	113.6	112.8	13.2	0.0	0.8	0.9930	1.0000	0.1169	0.0000	0.0070	
82 12 21	134.6	133.8	13.8	0.0	0.8	0.9941	1.0000	0.1034	0.0000	0.0059	
82 12 22	126.1	125.1	14.1	0.0	1.0	0.9921	1.0000	0.1125	0.0000	0.0079	
82 12 23	105.5	104.7	13.9	0.0	0.8	0.9924	1.0000	0.1324	0.0000	0.0076	
82 12 24	95.7	95.1	14.3	0.0	0.6	0.9937	1.0000	0.1500	0.0000	0.0063	
82 12 25	100.6	100.0	13.0	0.0	0.6	0.9939	1.0000	0.1304	0.0000	0.0061	
82 12 26	103.0	102.2	14.4	0.0	0.8	0.9922	1.0000	0.1406	0.0000	0.0078	
82 12 27	88.8	88.2	13.4	0.0	0.6	0.9932	1.0000	0.1525	0.0000	0.0068	
82 12 28	106.8	105.8	15.1	0.0	1.0	0.9907	1.0000	0.1429	0.0000	0.0093	
82 12 29	128.7	127.7	13.8	0.0	1.0	0.9922	1.0000	0.1084	0.0000	0.0078	
82 12 30	132.2	131.4	14.1	0.0	0.8	0.9939	1.0000	0.1071	0.0000	0.0061	
82 12 31	120.9	120.1	14.8	0.0	0.8	0.9934	1.0000	0.1233	0.0000	0.0066	
83 12 1	172.3	171.7	14.3	0.0	0.6	0.9965	1.0000	0.0833	0.0000	0.0035	* HOURLY RECORD MISSING *

TOTAL RECORD(S) READ = 6596

APPENDIX I

Steelhead and Yearling Chinook Survival Calculations, 1982

Appendix Table 11.--Steelhead survival calculations, 1982.

LITTLE GOOSE TAILRACE TO MCNARY DAM

	2 Brands (released Little Goose tailrace)			IS Brands (released Port Kelly)			
	A	B	C	D	E	F	Percent Survival
Week	No. marked	No. collected McNary	B/A	No. marked	No. collected McNary	E/D	C/F
1	8427	2709	.32	4040	1318	.33	97.0
2	8214	2668	.32	5074	2174	.43	74.4
3	8280	1009	.12	4253	580	.13	92.3
4	4030	802	.20	3987	920	.23	87.0

90% C.I. = $\overline{X}_s \pm S_{\overline{X}_s}$ (t)

$\overline{X}_s = 87.1$

$S_{X_s} = 9.4/\ 4 = 4.7$

SD = 9.4

$t_{(d.f.)} = 2.353$

S = 87.1 $\pm$ 4.7(2.4)
87.1 $\pm$ 11.3 or 75.8 to 100.0

McNARY DAM TO JOHN DAY DAM

Brand	A No. arr McNary	B No. collected McNary	C No. arr John Day	C/A-B Percent survival
LA&RA IS 1	3636	1318	3023	130.4
LA&RA IS 2	4567	2174	2199	91.9
LA&RA IS 3	3827	580	2068	63.7
LA&RA IS 4	3589	920	2939	109.7
LP&RP IS 1	3734	315	916	26.8

90% C.I. =$\overline{X}_s \pm S_{\overline{X}_s}$ (t)

$\overline{X}_s = 84.5$

$S_{\overline{X}_s} = 40.5/\sqrt{5} = 18.1$

SD = 40.5

$t_{(4\ d.f.)} = 2.132$

S = 84.5 $\pm$ 18.1(2.1)
84.5 $\pm$ 38.0 or 46.5 to >100.0

Appendix Table II.--continued

LOWER GRANITE DAM TO LITTLE GOOSE TAILRACE

Since we have no means of knowing the number of marks removed at Little Goose survival through this section of the river is estimated at 65% based on the following assumptions:

(1) 15% mortality at both Lower Granite and Little Goose Dams
(2) 10% mortality through Little Goose Pool

$$(.85)\ (.90)\ (.85) = 65\%$$

LOWER GRANITE TO JOHN DAY

Given S_1 = Survival Little Goose tailrace to McNary Dam (87%)
S_2 = Survival McNary Dam to John Day Dam (85%)
S_3 = Survival Lower Granite Dam to Little Goose tailrace (65%)

then overall survival = $S_1 \times S_2 \times S_3$ or

$$(.87)\ (.85)\ (.65) = 48\%$$

Appendix Table I2.--Yearling chinook salmon survival calculations, 1982.

LOWER GRANITE DAM TO JOHN DAY DAM

		RD IU 1	RD SU 2	RD SU 4	RD 4 1
A	No. arrive L. Granite	3423	5407	3513	9626
B	No. collected L. Granite	597	916	582	1834
C	No. passing L. Granite (A-B)	2826	4491	2931	7792
D	No. arriving L. Goose a/	2162	3436	2242	5961
E	No. collected L. Goose b/	377	582	371	1136
F	No. passing L. Goose (D-E)	1785	2854	1871	4825
G	No. arrive McNary	945	1626	1530	3847
H	No. collected McNary	175	288	269	995
I	No. passing McNary (G-H)	770	1338	1261	2852
J	No. arrive John Day	584	483	290	1517
G_1	No. arrive McNary if no collection at L. Goose (G_1 = DG/F)	1145	1958	1833	4754
J_1	No. arrive John Day if no collection at McNary or L. Goose ($J_1 = JG_1/I$)	868	707	422	2529
S	% Survival (J_1/C)	30.1	15.7	14.4	32.5

Mean survival = 23.3% Lower Granite to John Day

a/ Assumes 85% survival at Lower Granite and Little Goose Dams and 90% survival at Little Goose Pool.

b/ Assumes collection efficiency same as Lower Granite Dam.

MCNARY DAM TO JOHN DAY DAM

Based on McNary efficiency releases

Brands	A No. arrive McNary	B No. collected McNary	C No. arrive John Day	Survival(%) C/(A-B)
L An & 3	11,386	2,697	4,062	46.8
L I+ & ID	5,900	747	3,463	67.2
R An & 3	8,875	1,966	3,652	52.9
R I+ & ID	2,891	675	2,322	104.8

90% C.I. Mean survival $\bar{X}_s = 67.9$

$S_{\bar{x}_s} = 26.0/\sqrt{4} = 13.0$ $t_{(3d.f.)} = 2.4$ SD = 26.0

$\bar{X} \pm 13(2.4) = \bar{X} \pm 31.2$

36.7% to 99.1%

Appendix Table I2--continued

LOWER GRANITE DAM TO MCNARY DAM

Survival Lower Granite-John Day/survival McNary-John Day
.23/.68 = 34%

APPENDIX J

Efficiency Release Data used to Generate the Sampling Efficiency to Powerhouse Flow Relationships

Appendix Table J1.--Efficiency release data used to generate the regression line for steelhead at Lower Granite Dam 1980, 1981, 1982 (Figure 2).

Year	Brands	Powerhouse[1/] flow (%)	Sampling[2/] efficiency (%)
1980	LA IS 2	100.0	36.2
	" " 3	"	50.1
	" " 4	"	58.3
1981	LA P 1	97.1	88.5
	" " 2	95.4	25.2
	" " 3	100.0	37.2
	" " 4	97.9	54.0
	LA S 2	100.0	44.8
	LA Y 1	84.9	43.9
1982	LA F 1	69.4	55.4
	" " 2	65.4	29.9
	" " 3	67.9	28.2
	" " 4	80.4	41.5
	RA F 1	66.0	31.4
	" " 2	68.0	17.8
	" " 3	67.9	16.8

1/ If the powerhouse flow (%) did not fluctuate more than 10% during the entire recovery period, then flows were averaged over that entire time frame and all recoveries were used in the regression analysis. However, if powerhouse flow did fluctuate more than 10%, flows were averaged over the the first 5 days of recovery and only recaptures enumerated over that 5-day period were used in the regression analysis.

2/ The sampling efficiency is the estimated number of recaptures collected in the system divided by the number of branded fish released (adjusted for 20% postmarking, transportation, and reservoir related mortality). Collection estimates and release data for 1982 are detailed in Appendixes D and G, respectively. Similar data for 1980 and 1981 can be found in the final reports for those years (Sims et al., 1981, 1982).

Appendix Table J2.--Efficiency release data used to generate regression line for steelhead at McNary Dam, 1982 (Figure 1).

Brands[1]	Powerhouse[2] flow(%)	Sampling[3] efficiency (%)
LA AN 1		
" 3 1	74.7	51.2
" AN 2		
" 3 2	70.1	49.3
" AN 3		
" 3 3	66.5	48.2
RA AN 1		
" 3 1	66.5	33.5
" AN 3		
" 3 3	59.6	44.1
" AN 4		
" 3 4	58.3	54.1
RA I+ 1		
" ID 1	58.5	57.6
" I+ 3		
" ID 3	57.0	27.2
" AN 2		
" 3 2	54.7	39.5
LD AN 2		
" 3 2	49.0	10.8
LD AN 4		
" 3 4	50.0	6.6
" I+ 1		
" ID 1	51.8	4.7
RD AN 1		
" 3 1	50.6	12.2
" AN 2	51.4	12.2
" 3 2		