Fish Passage Center

Bi-Weekly Report #98-29

November 6, 1998

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PLEASE NOTE: THIS IS THE LAST REPORT FOR 1998. SEE YOU NEXT YEAR!

SUMMARY OF EVENTS:

Water Supply: Precipitation was normal or below normal for most of the basin during October. A cold front moved from the Pacific Northwest coast into eastern Washington and Oregon. This helped to generate a widespread area of 0.5 inch to 1-inch rainfall west of the Cascades, with isolated pockets of 1.5 to 2 inches near the northwest Oregon coast and mount St. Helens. Amounts were generally less than 0.25 inches west of the Cascades.

The mid range weather forecast for the region calls for continuation of light precipitation and temperatures that are close to normal for this time of year.

System Storage: The reservoirs continue drafting. A summary of actual elevations on November 5,1998 is shown in the following table:

Reservoir	Actual Elev. [ft] 11/5/98	Max. Pool [ft]
Libby	2342.96	2459.0
Hungry Horse	3529.88	3560.0
Grand Coulee	1283.40	1290.0
Brownlee	2020.90	2077.0
Dworshak	1517.19	1600.0

*elevation as of midnight 10/07/98

US reservoirs:

- Libby outflows were decreased from 8 kcfs to 6 kcfs on October 19 and will continue at this level for a while. The project is being operated to meet the December 31 flood control elevation of 2411 feet.
- Hungry Horse is currently drafting and releasing slightly more than 2 kcfs per day to maintain the minimum required flows of 3.5 kcfs at Columbia Falls.
- Grand Coulee continues to be operated at elevations between 1283 to 1284 ft.
- Brownlee is in refill and outflow was decreased from 20 kcfs on October 17 to 9 kcfs as a part of the fall chinook spawning program below Hells Canyon Dam. This outflow is expected to continue through the middle of December. It is expected that the reservoir will be about full by the beginning of December.
- Dworshak is in refill and operating at an minimum outflow of about 1.3 kcfs, for the purpose of meeting the 110% gas criteria.

System Streamflow: The summary of average bi-weekly flows for run of the river projects during October 9 through November 5 is shown in the following Table:

Project	October 9-22	October 23-November 5
Priest Rapids	74.5 kcfs	79.6 kcfs
McNary	100.4 kcfs	96.04 kcfs
Lower Granite	25.5 kcfs	17.90 kcfs
Bonneville	101.3 kcfs	106.17 kcfs

The Salmon managers are requesting minimum daily flows of 125 kcfs below Bonneville Dam through the fall/winter season to facilitate spawning of the fall chinook salmon at Hamilton/Ives Island area.

Smolt Monitoring: At the Snake River monitoring sites, the last sample of the 1998 season as processed November 1. This sample included a separator clean out which provided increased numbers at Lower Granite and Little Goose of yearling chinook and coho than have been seen for a while. Since October 23, the subyearling chinook collections had averaged 14 fish per day at Lower Granite Dam, 2 fish per day at Little Goose Dam, and 1 fish per day at Lower Monumental Dam. During this time, collection of non-salmonids at Snake River dams has also declined; the dominant species, crappie, dropped to an average of 17 fish per day at Lower Granite Dam, 345 fish per day at Little Goose Dam, and 123 fish per day at Lower Monumental Dam.

In the lower Columbia River, the last sample of the season was processed on October 29 at John Day Dam and October 31 at Bonneville Dam. Since October 23, the subyearling chinook collections had averaged 19 fish per day at John Day Dam and 20 fish per 8-hr sample period at Bonneville Dam first powerhouse. During this time, expanded collection of shad averaged nearly 15,000 fish per day at John Day Dam and nearly 69,000 fish per 8-hr period at Bonneville Dam first powerhouse. Monitoring at McNary Dam is planned to continue until mid-December. During the past two-week period, the average collection of subyearling chinook was 85 fish per day. During this same time the expanded shad collection was nearly 47,000 fish per day.

Adult Fish Passage: October 31 was the final counting day at most Corps of Engineer dams, with the exceptions being Bonneville Dam and Lower Granite Dam; the Public Utility dams normally count through the middle of November.

At Bonneville Dam, all fish counts continued to fall through the end of October and into November, with the daily count on November 5 of 62 adult fall chinook. The season total through November 5 was 188,976, about 88% and nearly equal the respective 1997 count and 10-year average. Adult fall chinook (Upriver Bright Component) at The Dalles Dam was nearly 93,000 for the season; about 80% of the 1997 count and 10-year average through the end of October; this total remained less than half the adult fall chinook counted at Bonneville Dam for the 1998 season. Adult fall chinook above McNary Dam totaled almost 64,000 for the 1998 fish passage season through October; this total was 74% and 90% of the respective 1997 count and 10-year average. The adult fall chinook counts at Ice Harbor Dam finished the 1998 season with a cumulative count through October 31 of nearly 4,300. This total was 188% of the 1997 count and 121% of the 10-year average. At Lower Granite Dam, about 1,900 adult chinook (wild and hatchery fish) have been counted along with almost 1,900 jack chinook. Of the fall chinook counted at Lower Granite Dam, approximately 1,100 adult hatchery fish have been returned to Lyons Ferry along with about 400 jack chinook. All wild and hatchery-reared fall chinook planted in the Clearwater or Snake River and intercepted at the Lower Granite trapping facility have been released back to the river to spawn above Lower Granite Dam. The number of jack chinook counted at Lower Granite Dam is from 3 to 6 times greater than the respective 1997 and 10-year average counts at the project. Fall chinook numbers returning to the Snake River should increase next season based on this year's jack returns and adult returns.

In the Mid-Columbia River, daily counts have decreased to less than 20 adult fish at each project by the end of the reporting week. At Priest Rapids Dam, the 1998 count of adult fall chinook totaled 9,423, about 84% and 88% of the 1997 and 10-year average. The number of jack chinook at the project was nearly 1,600, with that total greater than the 1997 jack count of 1,400, but well below the 10-year average of 2,400 jack chinook. Of the 9,400 adult fall chinook that passed Priest Rapids Dam, about 3,700 were counted at Rock Island Dam. This total was well below the 1997 and 10-year average. Most adult fall chinook counted at McNary Dam are destined for the Hanford Reach (wild spawners) and Ringold and Priest Rapids hatcheries located in this same stretch of river below Priest Rapids

Dam and above Richland, WA to spawn. The Yakima River Basin also has a run of fall chinook spawning in that River basin.

Steelhead passage at Bonneville Dam dropped to less than 50 fish per day for much of the report period, and was less than 20 by November 5. The Bonneville count through November 5 was just above 184,700, approximately 72% and 78.5% of the 1997 count and 10-year average, respectively. Of the steelhead counted at Bonneville Dam, about 111,000 have passed The Dalles Dam or about 60% of the Bonneville total. The wild steelhead count at Bonneville was 35,500 for the season, about 19.2% of the total steelhead run. The steelhead count at McNary Dam approached the 100,000 total for the 1998 season. The steelhead count at Ice Harbor Dam was nearly 76,000 for the passage season, with close to 64,000 of these fish above Lower Granite Dam. This total was close to 80% of the 1997 count and the 10-year average. The daily steelhead counts at PUD projects were less than 20 per day at each dam. with the season total at Priest Rapids now up to nearly 5,750. This total was approximately 64% and 65% of the respective 1997 count and 10-year average.

At Bonneville Dam, adult coho counts reduced to less than 50/day by the end of the report period, with the season total now exceeding 46,200. The 1998 coho count remained about double the 1997 count and 10-year average. These early returning coho far exceeded numbers expected back to the Columbia River above Bonneville Dam. Most coho passing Bonneville Dam normally return to Bonneville pool tributaries and hatcheries with a smaller portion destined for the Yakima River, the Umatilla River, a smaller number for the Clearwater River, and possibly a few destined for the Methow River. Approximately 8,200 adult coho have passed The Dalles Dam to date, with greater than 5,700 above McNary Dam. Only a handful has been counted into the Snake River and into the Mid-Columbia River this year.

Daily Average Flow and Spill (in kcfs) at Mid-Columbia Projects

	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
10/23/98	60.2	0.0	64.2	0.0	65.1	0.0	70.0	0.0	67.4	0.0	72.7	0.6	75.6	0.0
10/24/98	59.8	0.0	61.0	0.0	61.3	0.0	62.0	0.0	59.8	0.0	58.5	0.6	64.5	0.0
10/25/98	52.8	0.0	50.9	0.0	52.8	0.0	56.1	0.0	54.5	0.0	58.3	0.6	62.5	0.0
10/26/98	75.0	0.0	76.4	0.0	77.9	0.0	80.4	0.0	77.3	0.0	57.2	0.8	60.8	0.4
10/27/98	78.6	0.0	82.8	0.0	84.5	0.0	86.5	0.0	84.5	0.0	79.8	1.2	77.0	1.5
10/28/98	81.4	0.0	87.0	0.0	88.5	0.0	90.4	0.0	86.3	0.0	75.0	1.4	80.4	1.6
10/29/98	88.2	0.0	87.6	0.0	89.5	0.0	93.8	0.0	93.3	0.0	83.5	2.0	94.1	1.4
10/30/98	84.6	0.0	83.2	0.0	84.1	0.0	87.6	0.0	87.8	0.0	95.8	1.9	99.7	1.4
10/31/98	56.8	0.0	64.8	0.0	67.0	0.0	71.1	0.0	70.9	0.0	82.5	1.5	87.9	1.3
11/01/98	46.7	0.0	41.8	0.0	51.0	0.0	54.6	0.0	53.0	0.0	69.8	1.3	74.9	1.3
11/02/98	80.1	0.0	78.2	0.0	71.8	0.0	72.3	0.0	70.3	0.0	79.5	0.5	81.7	0.8
11/03/98	79.9	0.0	84.7	0.0	84.8	0.0	87.0	0.0	83.8	0.0	78.8	0.0	84.8	0.0
11/04/98	80.8	0.0	92.5	0.0	93.1	0.1	93.9	0.0	89.5	0.0	76.7	0.0	83.8	0.0
11/05/98	85.6	0.0	81.4	0.0	80.9	0.0	85.4	0.0	85.8	0.0	85.7	0.0	86.6	0.0

Daily Average Flow and Spill (in kcfs) at Snake Basin Projects

	Dworshak		Brownlee		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
10/23/98	1.4	0.0	---	---	17.7	0.0	17.5	0.0	19.4	0.0	19.4	0.0
10/24/98	1.4	0.0	---	---	17.7	0.0	18.9	0.0	19.1	0.0	18.9	0.0
10/25/98	1.4	0.0	---	---	19.0	0.0	18.7	0.0	20.1	0.0	19.0	0.0
10/26/98	1.4	0.0	---	---	18.0	0.0	19.2	0.0	21.3	0.0	20.5	0.0
10/27/98	1.4	0.0	---	---	17.4	0.0	17.7	0.0	18.4	0.0	17.5	0.0
10/28/98	1.4	0.0	---	---	18.0	0.0	18.1	0.0	18.4	0.0	18.1	0.0
10/29/98	1.4	0.0	---	---	18.2	0.0	18.4	0.0	20.6	0.0	21.6	0.0
10/30/98	1.3	0.0	---	---	18.6	0.0	18.2	0.0	19.0	0.0	17.3	0.0
10/31/98	1.3	0.0	---	---	17.0	0.0	17.4	0.0	18.9	0.0	19.0	0.0
11/01/98	1.3	0.0	---	---	17.8	0.0	17.2	0.0	18.6	0.0	16.9	0.0
11/02/98	1.3	0.0	---	---	18.3	0.0	18.8	0.0	19.5	0.0	18.8	0.0
11/03/98	1.3	0.0	---	---	17.5	0.0	18.6	0.0	18.9	0.0	19.0	0.0
11/04/98	1.3	0.0	---	---	17.2	0.0	18.0	0.0	19.7	0.0	18.9	0.0
11/05/98	1.3	0.0	---	---	17.7	0.0	17.9	0.0	19.4	0.0	19.4	0.0

Daily Average Flow and Spill (in kcfs) at Lower Columbia Projects

	McNary		John Day		The Dalles		Bonneville			
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
10/23/98	88.9	0.0	97.0	1.0	101.1	0.0	100.5	0.0	54.5	37.6
10/24/98	90.4	0.0	84.7	1.1	89.0	0.0	100.7	0.0	52.6	39.7
10/25/98	85.4	0.0	88.4	1.0	89.7	0.0	100.7	0.0	48.7	43.6
10/26/98	88.6	0.0	98.7	1.1	100.8	0.0	100.6	0.0	48.4	43.8
10/27/98	75.1	0.0	85.3	1.0	89.7	0.0	100.9	0.0	48.8	43.7
10/28/98	89.2	0.0	88.5	1.0	91.3	0.0	101.1	0.0	48.5	44.2
10/29/98	97.6	0.0	98.3	1.0	98.9	0.0	100.5	0.0	48.2	43.9
10/30/98	111.3	0.0	107.9	1.0	112.1	0.0	104.4	0.0	52.6	43.4
10/31/98	116.6	0.0	105.2	1.0	107.1	0.0	106.0	0.0	56.6	41.0
11/01/98	92.2	0.0	93.8	0.0	96.4	0.0	106.1	0.0	57.5	40.2
11/02/98	97.4	0.0	99.1	0.0	100.7	0.0	105.4	0.0	55.2	41.8
11/03/98	108.0	0.0	108.4	0.0	108.7	0.0	110.5	0.0	53.9	48.2
11/04/98	99.9	0.0	107.6	0.0	113.0	0.0	125.0	0.0	M	M
11/05/98	104.0	0.0	112.5	0.0	114.8	0.0	---	---	67.5	49.1

M = Missing data from COE.

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High[2]

Total Dissolved Gas Saturation Data at Upper Columbia Sites

	Can. Boundary				Grand Coulee				Tlwtr G. Coulee				Chief Joseph				Wells				Rocky Reach			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
10/22	107	108	109	24	100	100	100	24	100	101	103	24	---	---	---	0	---	---	---	0	---	---	---	0
10/23	107	108	109	24	100	100	100	24	100	100	102	24	---	---	---	0	---	---	---	0	---	---	---	0
10/24	112	113	116	21	100	100	101	20	100	101	102	20	---	---	---	0	---	---	---	0	---	---	---	0
10/25	112	113	115	23	99	99	100	23	99	100	101	23	---	---	---	0	---	---	---	0	---	---	---	0
10/26	105	106	108	16	99	99	99	15	98	99	101	15	---	---	---	0	---	---	---	0	---	---	---	0
10/27	107	108	109	24	100	100	100	23	99	100	101	23	---	---	---	0	---	---	---	0	---	---	---	0
10/28	106	106	107	24	99	99	100	23	99	99	101	23	---	---	---	0	---	---	---	0	---	---	---	0
10/29	104	104	105	24	100	102	112	23	98	99	101	23	---	---	---	0	---	---	---	0	---	---	---	0
10/30	105	107	109	24	99	99	99	24	98	98	99	24	---	---	---	0	---	---	---	0	---	---	---	0
10/31	108	108	109	24	98	98	99	24	98	99	100	24	---	---	---	0	---	---	---	0	---	---	---	0
11/1	109	109	110	24	98	98	98	23	99	100	100	23	---	---	---	0	---	---	---	0	---	---	---	0
11/2	108	108	110	24	97	97	98	23	98	98	100	23	---	---	---	0	---	---	---	0	---	---	---	0
11/3	109	109	110	24	97	97	97	23	97	98	100	23	---	---	---	0	---	---	---	0	---	---	---	0
11/4	106	106	108	12	97	97	97	11	98	98	101	11	---	---	---	0	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation Data at Mid Columbia Sites

	Tlwtr. Rocky R.				Rock Island				Tlwtr. Rock Island				Wanapum				Tlwtr Wanapum				Priest Rapids			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
10/22	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/23	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/25	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/26	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/27	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/28	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/29	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/30	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
10/31	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/1	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/2	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/3	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/4	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation at Mid Columbia, Clearwater and Snake Sites

	Dwnstr P Rapids				Dworshak				Clearwater				Snake-Lewiston				Lower Granite				Tlwtr L. Granite			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
10/22	---	---	---	0	108	109	110	24	---	---	---	0	---	---	---	0	99	100	100	24	---	---	---	0
10/23	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	99	100	100	24	---	---	---	0
10/24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	100	100	101	23	---	---	---	0
10/25	---	---	---	0	108	109	109	23	---	---	---	0	---	---	---	0	99	99	100	24	---	---	---	0
10/26	---	---	---	0	108	108	109	12	---	---	---	0	---	---	---	0	100	100	103	18	---	---	---	0
10/27	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	101	101	101	13	---	---	---	0
10/28	---	---	---	0	108	109	110	24	---	---	---	0	---	---	---	0	100	100	101	24	---	---	---	0
10/29	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	100	100	100	24	---	---	---	0
10/30	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	100	100	101	23	---	---	---	0
10/31	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	101	101	101	24	---	---	---	0
11/1	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	100	100	101	24	---	---	---	0
11/2	---	---	---	0	109	109	109	5	---	---	---	0	---	---	---	0	100	100	100	5	---	---	---	0
11/3	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/4	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

[1] Data provided by the Corps of Engineers.
[2] Dissolved gas readings and averages have been rounded to the nearest integer.

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High[2]

Total Dissolved Gas Saturation Data at Snake Sites

	Little Goose				Tlwtr L. Goose				Lower Mon.				Tlwtr L. Mon				Ice Harbor				Tlwtr Ice Harbor			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
10/22	96	96	96	24	---	---	---	0	---	---	---	0	---	---	---	0	95	95	96	16	97	98	98	16
10/23	95	95	96	7	---	---	---	0	---	---	---	0	---	---	---	0	96	96	96	24	98	98	98	24
10/24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	96	96	96	17	98	98	98	17
10/25	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	96	96	96	20	98	98	98	20
10/26	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	96	96	96	16	98	98	99	16
10/27	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	97	97	97	16	98	99	100	16
10/28	97	97	97	24	---	---	---	0	---	---	---	0	---	---	---	0	96	96	97	24	98	98	98	24
10/29	96	96	97	24	---	---	---	0	---	---	---	0	---	---	---	0	96	96	96	24	98	98	98	24
10/30	96	96	97	23	---	---	---	0	---	---	---	0	---	---	---	0	96	96	96	24	97	98	98	24
10/31	97	97	97	24	---	---	---	0	---	---	---	0	---	---	---	0	96	96	97	24	97	97	97	24
11/1	97	97	97	24	---	---	---	0	---	---	---	0	---	---	---	0	96	96	96	24	97	97	98	24
11/2	97	97	97	6	---	---	---	0	---	---	---	0	---	---	---	0	96	96	96	5	97	97	97	5
11/3	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/4	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation Data at Lower Columbia Sites

	McNary-Oregon				McNary-Wash.				Tlwtr McNary				John Day				Tlwtr John Day				The Dalles			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
10/22	99	100	101	24	100	100	100	24	99	99	100	24	---	---	---	0	---	---	---	0	---	---	---	0
10/23	99	100	101	24	100	101	101	24	99	99	100	24	---	---	---	0	---	---	---	0	---	---	---	0
10/24	99	100	100	24	100	101	101	24	99	100	100	24	---	---	---	0	---	---	---	0	---	---	---	0
10/25	99	100	101	25	99	99	100	25	99	99	99	25	---	---	---	0	---	---	---	0	---	---	---	0
10/26	99	99	100	16	99	100	101	16	99	99	100	16	---	---	---	0	---	---	---	0	---	---	---	0
10/27	100	100	103	16	102	102	102	16	100	100	101	16	---	---	---	0	---	---	---	0	---	---	---	0
10/28	99	99	99	24	100	100	101	24	100	100	101	24	---	---	---	0	---	---	---	0	---	---	---	0
10/29	99	99	100	24	99	99	100	24	98	99	99	24	---	---	---	0	---	---	---	0	---	---	---	0
10/30	98	99	99	24	99	99	99	24	98	98	99	24	---	---	---	0	---	---	---	0	---	---	---	0
10/31	98	99	99	24	99	99	99	24	98	98	99	24	---	---	---	0	---	---	---	0	---	---	---	0
11/1	98	98	99	24	98	98	99	24	98	98	98	24	---	---	---	0	---	---	---	0	---	---	---	0
11/2	98	98	98	3	98	98	98	5	97	97	98	5	---	---	---	0	---	---	---	0	---	---	---	0
11/3	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/4	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation Data at Lower Columbia Sites

	Dnstr T. Dalles				Bonneville				Warrendale				Skamania				Camas\Wash.				Wauna Mill			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
10/22	---	---	---	0	98	98	98	23	99	99	99	23	---	---	---	0	---	---	---	0	---	---	---	0
10/23	---	---	---	0	98	98	99	24	99	100	100	24	---	---	---	0	---	---	---	0	---	---	---	0
10/24	---	---	---	0	98	99	99	19	100	100	100	19	---	---	---	0	---	---	---	0	---	---	---	0
10/25	---	---	---	0	97	97	98	23	99	99	99	23	---	---	---	0	---	---	---	0	---	---	---	0
10/26	---	---	---	0	97	97	98	18	99	99	100	18	---	---	---	0	---	---	---	0	---	---	---	0
10/27	---	---	---	0	98	99	99	24	99	99	100	10	---	---	---	0	---	---	---	0	---	---	---	0
10/28	---	---	---	0	97	98	98	24	96	96	97	21	---	---	---	0	---	---	---	0	---	---	---	0
10/29	---	---	---	0	97	97	97	24	96	96	97	18	---	---	---	0	---	---	---	0	---	---	---	0
10/30	---	---	---	0	97	97	98	24	98	99	106	23	---	---	---	0	---	---	---	0	---	---	---	0
10/31	---	---	---	0	97	97	98	24	98	98	98	24	---	---	---	0	---	---	---	0	---	---	---	0
11/1	---	---	---	0	97	97	97	24	98	98	99	17	---	---	---	0	---	---	---	0	---	---	---	0
11/2	---	---	---	0	97	98	98	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/3	---	---	---	0	98	98	98	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
11/4	---	---	---	0	98	98	99	14	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

[1] Data provided by the Corps of Engineers.
[2] Dissolved gas readings and averages have been rounded to the nearest integer.

Two-Week Summary of Passage Indices

Yearling Chinook

	Hatchery							Hatchery/Wild Combined			
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
10/23/98	---	---	---	---	29	1	0	---	0	0	0
10/24/98	---	---	---	---	30	1	0	---	0	0	0
10/25/98	---	---	---	---	30	3	0	---	0	0	15
10/26/98	---	---	---	---	16	7	0	---	0	0	0
10/27/98	---	---	---	---	11	2	1	---	0	0	0
10/28/98	---	---	---	---	8	0	1	---	0	0	0
10/29/98	---	---	---	---	9	2	0	---	0	0	0
10/30/98	---	---	---	---	7	3	0	---	0	---	15
10/31/98	---	---	---	---	26	1	0	---	0	---	7
11/01/98	---	---	---	---	80	9	0	---	0	---	---
11/02/98	---	---	---	---	---	---	---	---	0	---	---
11/03/98	---	---	---	---	---	---	---	---	0	---	---
11/04/98	---	---	---	---	---	---	---	---	0	---	---
11/05/98	---	---	---	---	---	---	---	---	0	---	---
Total:	0	0	0	0	246	29	2	0	0	0	37
# Days:	0	0	0	0	10	10	10	0	14	7	9
Average:	0	0	0	0	25	3	0	0	0	0	4

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
10/23/98	---	---	---	---	0	0	0
10/24/98	---	---	---	---	1	0	0
10/25/98	---	---	---	---	0	0	0
10/26/98	---	---	---	---	0	0	0
10/27/98	---	---	---	---	0	1	0
10/28/98	---	---	---	---	3	0	0
10/29/98	---	---	---	---	0	0	0
10/30/98	---	---	---	---	1	0	0
10/31/98	---	---	---	---	2	1	0
11/01/98	---	---	---	---	4	0	0
11/02/98	---	---	---	---	---	---	---
11/03/98	---	---	---	---	---	---	---
11/04/98	---	---	---	---	---	---	---
11/05/98	---	---	---	---	---	---	---
Total:	0	0	0	0	11	2	0
# Days:	0	0	0	0	10	10	10
Average:	0	0	0	0	1	0	0

Wild Subyearling Chinook

LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
31	5	1
24	2	4
7	4	0
13	2	0
6	2	1
7	1	0
4	2	1
7	3	2
3	1	0
39	0	0
---	---	---
---	---	---
---	---	---
---	---	---
141	22	9
10	10	10
14	2	1

The data presented in the following passage index section is preliminary and has been derived from various sources. For verification and/or origin of data, contact the operators of the Fish Passage Data System at (503) 230-4099.

Smolt indices, wild & hatchery or combined, are presented in the following order: yearling chinook (chinook 1's), subyearling chinook (chinook 0's), steelhead, coho, and sockeye. Two classes of fish counts are shown in these tables: collection counts, which account for sample rates but are not adjusted for flow; and passage indices, which are collection counts divided by the proportion of water passing through the sampling system. Collection counts may be constrained due to sampling effort or river flow. Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations. The classes of counts presented in the report are defined below for each site. Most samples occur over a 24 hour period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Two-Week Summary of Passage Indices

	Hatchery Subyearling Chinook							Combined Subyearling Chinook			
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
10/23/98	---	---	---	---	0	0	0	---	20	28	47
10/24/98	---	---	---	---	0	0	0	---	30	20	35
10/25/98	---	---	---	---	0	0	0	---	90	20	8
10/26/98	---	---	---	---	0	0	0	---	36	20	23
10/27/98	---	---	---	---	0	0	0	---	30	12	15
10/28/98	---	---	---	---	0	0	0	---	54	28	8
10/29/98	---	---	---	---	0	0	0	---	42	8	31
10/30/98	---	---	---	---	0	0	0	---	78	---	7
10/31/98	---	---	---	---	0	0	0	---	114	---	7
11/01/98	---	---	---	---	0	0	0	---	70	---	---
11/02/98	---	---	---	---	---	---	---	---	70	---	---
11/03/98	---	---	---	---	---	---	---	---	90	---	---
11/04/98	---	---	---	---	---	---	---	---	210	---	---
11/05/98	---	---	---	---	---	---	---	---	250	---	---
Total:	0	0	0	0	0	0	0	0	1,184	136	181
# Days:	0	0	0	0	10	10	10	0	14	7	9
Average:	0	0	0	0	0	0	0	0	85	19	20

	All Coho										
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
10/23/98	---	---	---	---	1	0	0	---	0	0	0
10/24/98	---	---	---	---	0	0	0	---	0	0	0
10/25/98	---	---	---	---	4	1	0	---	0	0	15
10/26/98	---	---	---	---	3	1	0	---	0	0	8
10/27/98	---	---	---	---	1	0	0	---	0	0	0
10/28/98	---	---	---	---	0	1	0	---	0	0	0
10/29/98	---	---	---	---	1	0	0	---	0	0	0
10/30/98	---	---	---	---	0	1	0	---	0	---	0
10/31/98	---	---	---	---	0	1	0	---	0	---	0
11/01/98	---	---	---	---	15	16	0	---	0	---	---
11/02/98	---	---	---	---	---	---	---	---	0	---	---
11/03/98	---	---	---	---	---	---	---	---	0	---	---
11/04/98	---	---	---	---	---	---	---	---	0	---	---
11/05/98	---	---	---	---	---	---	---	---	0	---	---
Total:	0	0	0	0	25	21	0	0	0	0	23
# Days:	0	0	0	0	10	10	10	0	14	7	9
Average:	0	0	0	0	3	2	0	0	0	0	3

Definitions for Smolt Index Counts

WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts IMN (Collection) = Imnaha River Trap : Collection Counts
GRN (Collection) = Grande Ronde River Trap : Collection Counts LEW (Collection) = Snake River Trap at Lewiston : Collection Counts
LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts : Passage Index = (Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) })
LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) }
LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts : Passage Index = Collection Counts /
{ Powerhouse Flow / (Powerhouse Flow + Spill) }

Two-Week Summary of Passage Indices

Hatchery Steelhead

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
10/23/98	---	---	---	---	0	0	0	---	0	0	0
10/24/98	---	---	---	---	0	0	0	---	0	0	0
10/25/98	---	---	---	---	0	0	0	---	0	0	0
10/26/98	---	---	---	---	0	0	0	---	0	0	0
10/27/98	---	---	---	---	0	0	0	---	0	0	0
10/28/98	---	---	---	---	0	0	0	---	0	0	0
10/29/98	---	---	---	---	0	0	0	---	0	0	0
10/30/98	---	---	---	---	0	0	0	---	0	---	0
10/31/98	---	---	---	---	0	0	0	---	0	---	0
11/01/98	---	---	---	---	1	0	0	---	0	---	---
11/02/98	---	---	---	---	---	---	---	---	0	---	---
11/03/98	---	---	---	---	---	---	---	---	0	---	---
11/04/98	---	---	---	---	---	---	---	---	0	---	---
11/05/98	---	---	---	---	---	---	---	---	0	---	---
Total:	0	0	0	0	1	0	0	0	0	0	0
# Days:	0	0	0	0	10	10	10	0	14	7	9
Average:	0	0	0	0	0	0	0	0	0	0	0

Wild Steelhead

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
10/23/98	---	---	---	---	0	0	0	---	0	0	0
10/24/98	---	---	---	---	1	1	1	---	0	0	0
10/25/98	---	---	---	---	1	0	0	---	0	0	0
10/26/98	---	---	---	---	1	0	0	---	0	0	0
10/27/98	---	---	---	---	0	0	0	---	0	0	0
10/28/98	---	---	---	---	0	0	0	---	0	0	0
10/29/98	---	---	---	---	0	1	0	---	0	0	0
10/30/98	---	---	---	---	2	0	1	---	0	---	0
10/31/98	---	---	---	---	3	1	0	---	0	---	0
11/01/98	---	---	---	---	3	0	0	---	0	---	---
11/02/98	---	---	---	---	---	---	---	---	0	---	---
11/03/98	---	---	---	---	---	---	---	---	0	---	---
11/04/98	---	---	---	---	---	---	---	---	0	---	---
11/05/98	---	---	---	---	---	---	---	---	0	---	---
Total:	0	0	0	0	11	3	2	0	0	0	0
# Days:	0	0	0	0	10	10	10	0	14	7	9
Average:	0	0	0	0	1	0	0	0	0	0	0

Definitions for Smolt Index Counts.

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouses 1 & 2 Flow + Spill) }

MCN (Index)= McNary Dam Bypass Collection System : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) }

JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill) }

BO1 (Index)= Bonneville Dam First Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 1 Flow / (Powerhouses 1 & 2 +Flow + Spill)}

Two-Week Summary of Passage Indices

Hatchery Sockeye

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
10/23/98	---	---	---	---	0	0	0	---	0	0	0
10/24/98	---	---	---	---	2	0	0	---	0	0	0
10/25/98	---	---	---	---	0	0	0	---	0	0	0
10/26/98	---	---	---	---	2	0	0	---	0	0	0
10/27/98	---	---	---	---	0	0	0	---	0	0	0
10/28/98	---	---	---	---	0	0	0	---	0	0	0
10/29/98	---	---	---	---	0	0	0	---	0	0	0
10/30/98	---	---	---	---	0	0	0	---	0	---	0
10/31/98	---	---	---	---	2	0	0	---	0	---	0
11/01/98	---	---	---	---	1	0	0	---	0	---	---
11/02/98	---	---	---	---	---	---	---	---	0	---	---
11/03/98	---	---	---	---	---	---	---	---	0	---	---
11/04/98	---	---	---	---	---	---	---	---	0	---	---
11/05/98	---	---	---	---	---	---	---	---	0	---	---
Total:	0	0	0	0	7	0	0	0	0	0	0
# Days:	0	0	0	0	10	10	10	0	14	7	9
Average:	0	0	0	0	1	0	0	0	0	0	0

Wild Sockeye

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
10/23/98	---	---	---	---	0	0	0	---	0	0	0
10/24/98	---	---	---	---	0	0	0	---	0	0	0
10/25/98	---	---	---	---	0	0	0	---	0	0	0
10/26/98	---	---	---	---	0	0	0	---	0	4	0
10/27/98	---	---	---	---	0	0	0	---	0	0	0
10/28/98	---	---	---	---	0	0	0	---	0	0	0
10/29/98	---	---	---	---	0	0	0	---	0	0	0
10/30/98	---	---	---	---	0	0	0	---	0	---	0
10/31/98	---	---	---	---	0	0	0	---	0	---	0
11/01/98	---	---	---	---	0	0	0	---	0	---	---
11/02/98	---	---	---	---	---	---	---	---	0	---	---
11/03/98	---	---	---	---	---	---	---	---	0	---	---
11/04/98	---	---	---	---	---	---	---	---	0	---	---
11/05/98	---	---	---	---	---	---	---	---	0	---	---
Total:	0	0	0	0	0	0	0	0	0	4	0
# Days:	0	0	0	0	10	10	10	0	14	7	9
Average:	0	0	0	0	0	0	0	0	0	1	0

LEW and WTB data collected for the FPC by Idaho Dept. of Fish and Game.
JDA and BO1 data collected for the FPC by National Marine Fisheries Service.
RIS data collected for the FPC by Chelan Co. PUD/Washington Dept. of Fish and Wildlife.
LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.

LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife. IMN data collected for the FPC by the Nez Perce Tribe.

Cumulative Adult Passage at Mainstem Dams Through November 05, 1998

	Spring Chinook						Summer Chinook						Fall Chinook					
	1998		1997		10-Yr Avg.		1998		1997		10-Yr Avg.		1998		1997		10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	38,252	762	114,000	963	71,826	2,812	21,433	2,674	27,939	1,926	21,772	2,906	188,976	28,582	214,700	23,485	187,706	35,084
TDA	25,330	503	69,365	375	44,144	1,889	15,475	1,565	20,201	1,255	18,063	2,140	92,880	18,551	117,988	14,619	115,527	25,666
JDA	22,495	418	62,253	327	34,393	1,541	16,907	1,557	20,508	1,261	15,790	1,851	77,021	11,846	86,305	14,086	85,502	19,619
MCN	19,456	335	57,832	404	33,819	1,722	16,223	1,413	20,934	1,417	16,965	1,827	63,791	13,425	67,117	15,110	71,694	22,022
IHR	12,420	131	41,398	75	18,178	714	5,485	299	9,196	122	4,618	417	4,281	3,469	2,752	1,726	3,531	1,400
LMN	10,627	126	38,479	146	17,565	767	4,319	301	9,153	100	4,391	442	3,045	3,162	2,281	1,397	2,088	1,011
LGS	10,218	104	37,874	108	n/a	n/a	4,345	341	9,372	65	n/a	n/a	2,081	2,504	1,619	626	n/a	n/a
LWG	9,881	106	33,855	81	15,110	655	4,440	325	10,709	127	4,392	430	1,875	1,955	1,440	484	877	273
PRD	4,147	37	6,780	8	10,704	173	13,951	612	13,107	509	13,949	581	9,423	1,561	11,185	1,424	10,737	2,437
RIS	3,270	54	6,153	52	8,534	192	11,689	1,127	10,960	614	11,712	998	3,662	937	4,095	829	4,664	1,875
RRH	789	53	1,856	10	2,066	52	6,817	332	5,614	694	4,258	397	2,669	405	2,301	763	2,751	756
WEL	6	4	942	29	1,204	50	2,829	924	2,569	152	2,716	280	1,000	142	578	156	1,069	336

	Coho						Sockeye			Steelhead			
	1998		1997		10-Yr Avg.				10-Yr			10-Yr	Wild
	Adult	Jack	Adult	Jack	Adult	Jack	1998	1997	Avg.	1998	1997	Avg.	1998
BON	46,204	3,607	23,996	3,187	21,722	7,395	13,219	47,008	51,155	184,703	258,067	235,230	35,661
TDA	8,196	775	4,067	662	4,605	2,104	8,828	32,429	40,187	115,018	164,756	170,582	24,005
JDA	7,683	851	3,518	711	3,467	1,681	9,918	35,830	40,547	161,012	157,008	144,650	30,420
MCN	5,842	212	2,257	319	1,293	708	9,392	38,043	42,643	99,791	129,114	132,851	17,703
IHR	10	4	100	1	11	0	3	16	11	77,128	94,802	100,008	10,644
LMN	0	0	28	2	4	2	3	16	11	65,531	85,602	87,697	8,350
LGS	3	0	53	6	n/a	n/a	5	10	n/a	63,727	74,219	n/a	8,660
LWG	6	2	74	7	7	1	4	11	8	63,750	77,980	79,637	8,776
PRD	31	1	25	1	16	3	11,608	45,412	47,428	5,750	8,895	8,995	0
RIS	0	0	5	0	107	0	9,323	41,504	41,413	4,810	7,660	7,761	0
RRH	0	0	0	0	50	0	5,682	30,485	21,428	4,265	6,648	5,121	0
WEL	1	3	3	5	19	1	4,638	25,754	20,525	2,482	4,020	4,078	231

Historic counts (pre-1996) were obtained from CRITFC and compiled by the FPC.

1996, 1997, and 1998 counts were obtained from the Corps of Engineers.

1998 totals at LWG are based on video counts accumulated through November 04.

1998 totals at WEL are through Nov. 3. Totals at RRH are through Nov. 2

Adult count records at LGS have been maintained since 1993.

NOTE: Through June 28, all (spring) chinook are being trapped and removed from the ladder at Wells prior to the counting window.

NOTE: 1998 John Day Steelhead counts will be revised downwards.

NOTE: PRD, RIS, and RRH, are not reporting Wild Steelhead numbers.

NOTE: RIS 1998 Coho count revised from 9 to zero based on FPC communication with WDFW.

Transportation Summary Report

Two-Week Transportation Summary from 10/23/98 to 11/05/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	257	141	12	25	7	442
Bypassed	0	0	11	16	0	27
Trucked	254	141	1	8	7	411
Barged	0	0	0	0	0	0
Total Transported	**254**	**141**	**1**	**8**	**7**	**411**
LITTLE GOOSE DAM						
Collected	31	22	3	21	0	77
Bypassed	0	0	3	0	0	3
Trucked	30	22	0	20	0	72
Barged	0	0	0	0	0	0
Total Transported	**30**	**22**	**0**	**20**	**0**	**72**
LOWER MONUMENTAL DAM						
Collected	2	9	2	0	0	13
Bypassed	0	0	2	0	0	2
Trucked	2	9	0	0	0	11
Barged	0	0	0	0	0	0
Total Transported	**2**	**9**	**0**	**0**	**0**	**11**
MCNARY DAM						
Collected	0	1,184	0	0	0	1,184
Bypassed	0	274	0	0	0	274
Trucked	0	904	0	0	0	904
Barged	0	0	0	0	0	0
Total Transported	**0**	**904**	**0**	**0**	**0**	**904**
PROJECT TOTALS						
Collected	290	1,356	17	46	7	1,716
Bypassed	0	274	16	16	0	306
Trucked	286	1,076	1	28	7	1,398
Barged	0	0	0	0	0	0
Total Transported	**286**	**1,076**	**1**	**28**	**7**	**1,398**

Transportation Summary Report

Cumulative Transportation Summary 11/05/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	1,604,822	81,806	5,085,635	155,546	49,648	6,977,457
Bypassed	108,386	1,003	125,551	1,474	0	236,414
Trucked	42,108	70,278	67,844	6,421	645	187,296
Barged	1,449,614	8,532	4,888,200	147,145	48,911	6,542,402
Total Transported	**1,491,722**	**78,810**	**4,956,044**	**153,566**	**49,556**	**6,729,698**
LITTLE GOOSE DAM						
Collected	900,118	52,892	1,505,213	51,295	17,729	2,527,247
Bypassed	0	0	64	0	0	64
Trucked	13,835	49,181	10,006	3,626	862	77,510
Barged	874,575	1,663	1,490,650	47,129	16,696	2,430,713
Total Transported	**888,410**	**50,844**	**1,500,656**	**50,755**	**17,558**	**2,508,223**
LOWER MONUMENTAL DAM						
Collected	492,765	22,953	949,322	29,627	14,895	1,509,562
Bypassed	4,290	1,133	12,705	1,031	639	19,798
Trucked	1,365	17,515	4,429	495	274	24,078
Barged	485,912	3,913	931,488	28,063	13,963	1,463,339
Total Transported	**487,277**	**21,428**	**935,917**	**28,558**	**14,237**	**1,487,417**
MCNARY DAM						
Collected	1,044,047	8,166,297	327,380	125,972	512,068	10,175,764
Bypassed	1,004,336	164,310	316,015	109,189	492,648	2,086,498
Trucked	7,071	302,999	4,907	4,978	4,291	324,246
Barged	27,725	7,364,732	6,038	11,453	12,772	7,422,720
Total Transported	**34,796**	**7,667,731**	**10,945**	**16,431**	**17,063**	**7,746,966**
PROJECT TOTALS						
Collected	4,041,752	8,323,948	7,867,550	362,440	594,340	21,190,030
Bypassed	1,117,012	166,446	454,335	111,694	493,287	2,342,774
Trucked	64,379	439,973	87,186	15,520	6,072	613,130
Barged	2,837,826	7,378,840	7,316,376	233,790	92,342	17,859,174
Total Transported	**2,902,205**	**7,818,813**	**7,403,562**	**249,310**	**98,414**	**18,472,304**