Fish Passage Center

Bi-Weekly Report #98-25

September 11, 1998

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SUMMARY OF EVENTS:

Water Supply: During the period of September 8 through10, most basins saw maximum daily temperature departures of 2 to 4 degrees below normal, except in SE Idaho and British Columbia where temperatures ranged from 7 to 11 degrees above normal.

System Storage: Currently, reservoirs continue to draft, except Grand Coulee which has been refilling. A summary of actual elevations on September 9, 1998 is shown in the following table:

Reservoir	Actual Elev. [ft] 9/9/98	Max. Pool [ft]
Libby	2441.28	2459.0
Hungry Horse	3558.96	3560.0
Grand Coulee	1281.10	1290.0
Brownlee	2037.50	2077.0
Dworshak	1519.85	1600.0

US reservoirs:

- Libby outflows were decreased to 9.9 kcfs and will continue that operation to the end of September.
- Hungry Horse will be drafted to maintain the minimum required flows at Columbia Falls.
- Grand Coulee is operating at elevations between 1280 and 1282 ft during September.
- Brownlee is currently drafting outflows in the range of 18 to 21 kcfs.
- Dworshak will continue to operate at a minimum outflow of 1.3 kcfs.

Upper Snake reservoirs:

The system continues to be operated primarily for irrigation demands. Temperatures continue to be high, resulting in high irrigation withdrawals.

Jackson Lake is drafting for irrigation at a rate of about 5.4 kcfs and is about 81% full.

Palisades continues drafting for Upper Snake diversion irrigation withdrawal at a rate of 9.9 kcfs, about 2.8 kcfs higher than inflow and is about 77% full.

American Falls continues drafting to provide irrigation diversion flow downstream at Minidoka. Current outflow is about 10.8 kcfs, about 7 kcfs higher than inflow and the reservoir is about 53% full.

Millner flow, at the lowest point of the Upper Snake system, continues to be at a constant rate of about 1.5 kcfs which has occurred since July 7. Irrigation withdrawal upstream of Minidoka continued to be about 9-10 kcfs. Irrigation withdrawal at the Upper Snake diversion, upstream from Blackfoot, decreased to between 7 and 8 kcfs.

Boise River Basin:

Anderson and Arrowrock continue with drafting for irrigation withdrawals. Current reservoir capacities are 81% of full and 13% of full. The flow at Glenwood Bridge remained at about 1.1 kcfs.

System Streamflow: The weekly average flows continue to recede. The summary of average weekly flows for run of the river projects during the August 27 through September 9 period is shown in the following Table:

Project	August 27-September 2	September 3-9
Priest Rapids	106.0 kcfs	76.4 kcfs
McNary	125.3 kcfs	97.3 kcfs
Lower Granite	21.7 kcfs	22.5 kcfs
Bonneville	131.5 kcfs	107.5 kcfs

Spill. The summer spill program in the Snake River ended at Ice Harbor Dam at midnight on August 31, 1998. The lower Columbia River summer spill program at John Day, The Dalles and Bonneville dams ended on August 31, 1998 as well.

Total Dissolved Gas Supersaturation and Gas Bubble Trauma Monitoring

TDGS levels have been at, or below, the gas standards at all monitoring sites. Gas bubble trauma monitoring ended for the season at Rock Island, McNary, John Day and Bonneville dams. One fish was detected at Rock Island Dam with a bubble in its lateral line on the last day of sampling.

Smolt Monitoring. Subyearling chinook passage indices continued their typical seasonal decline in the Snake and lower Columbia rivers. Since September 1, the Snake River wild subyearling chinook passage indices have dropped to an average of about 50 fish per day at Lower Granite and Little Goose dams, and to 15 fish per day at Lower Monumental Dam. In the lower Columbia River, subyearling chinook passage indices at McNary Dam dropped below 1,000 fish on September 5. During the next sample period, a mechanical failure in the McNary Dam collection channel occurred which caused the COE to switch to primary bypass while they await replacement parts. The September 6 McNary sample is atypical; it includes fish from the first 30 minutes of the sample period before the breakdown, fish collected while the facility was shifting to primary bypass, and fish from the separator clean-out. Subyearling chinook passage indices at John Day and Bonneville Dams have averaged less than 400 and 150 fish per day, respectively, since September 1. Large numbers of juvenile shad are being collected daily at the lower Columbia River dams. Since September 1, on days of sampling, juvenile shad have averaged approximately 1,700 fish per day at McNary Dam and 4,600 fish per day at John Day Dam.

Adult Fish Passage: Passage of adult fall chinook at Bonneville increased as expected during the past two weeks, with counts ranging from a low of nearly 4,000 to a high of more than 7,000 by the end of the reporting period, August 28 through September 10. The season total through September 10 was 109,134 and was well below the 1997 total and about 85% of the 10-year average. The daily counts at The Dalles Dam ranged between 1,200 and 3,200 for the two weeks, with the season count at 39,574 through September 10. Adult fall chinook above McNary Dam total 16,638 through September 10,with counts now exceeding 100 per day at Ice Harbor Dam on the Snake River, with a cumulative count of 1,045. This total count is close to the 1997 and 10-year average. At Priest Rapids Dam on the Mid-Columbia River, the daily counts have been in the 200 to 500 range for the past two weeks, with the total approaching 5,700 for the season. The cumulative count is currently well below the 1997 total and about 88% of the 10-year average.

Steelhead passage at Bonneville Dam ranged from nearly 1,200 to more than 3,300 per day through the reporting period. The numbers of fish have been increasing at upstream projects but still remain below the Bonneville daily counts. The Bonneville count through September 10 was 121,295, about 57% of the 1997 count and 63% of the 10-year average. Of the steelhead counted at Bonneville Dam, 32,090 have passed The Dalles Dam or 26.5% of the Bonneville total. Water temperatures were starting to drop but most remained near or above 70°F at the four lower Columbia dams for the two weeks. The wild steelhead count at Bonneville is 29,758 for the season. The steelhead counts at Ice Harbor increased from nearly 200 to more than 500 per day for the two weeks, with the total count through September 10 at 12,495. This total was less than half the 1997 count and about 58% of the 10-year average. The daily steelhead counts at Priest Rapids Dam ranged between 70 and 170 for the two weeks, with the season total now 2,858. This total was 58% and 54% of the respective 1997 count and 10-year average.

At Bonneville Dam, coho passage increased from about 100 per day to more than 700 per day the final two days of the counting period. The season total was 3,725 and was 45.3% and 61.6% of the respective 1997 count and 10-year average. A few of these coho are now moving up past The Dalles and John Day dams.

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
08/28/98	104.8	0.1	105.4	0.0	106.0	0.0	108.1	0.0	105.6	0.3	110.7	1.6	118.0	1.5
08/29/98	86.4	0.1	90.8	0.0	90.2	0.0	90.3	0.0	87.8	0.0	77.4	2.0	83.4	1.7
08/30/98	87.4	0.1	85.0	0.0	87.7	0.0	92.7	0.0	91.9	0.0	99.3	2.1	108.2	1.6
08/31/98	116.7	0.1	121.9	0.0	117.9	0.0	116.8	2.2	112.7	0.0	100.8	1.9	108.7	1.6
09/01/98	81.3	0.1	88.6	0.0	101.9	0.0	111.8	9.3	113.0	0.0	122.8	1.8	132.0	1.5
09/02/98	76.8	0.1	71.7	0.0	74.6	0.0	79.8	0.0	77.6	0.0	85.1	1.5	98.0	1.4
09/03/98	84.0	0.1	83.6	0.0	87.4	0.0	85.9	0.0	83.1	0.0	80.4	1.4	84.9	1.2
09/04/98	77.7	0.1	81.2	0.0	79.4	0.0	79.0	0.0	77.3	0.0	70.3	1.5	75.5	1.3
09/05/98	65.3	0.1	68.6	0.0	66.5	0.0	69.2	0.0	67.2	0.0	66.1	1.8	66.9	1.3
09/06/98	64.8	0.1	64.9	0.0	66.9	0.0	68.4	0.0	66.4	0.0	67.0	1.7	66.7	1.6
09/07/98	73.3	0.1	73.9	0.0	73.5	0.0	75.5	0.0	72.7	0.0	71.4	1.9	71.6	1.8
09/08/98	86.7	0.1	86.1	0.0	84.5	0.0	87.1	0.0	85.3	0.0	85.4	1.8	87.2	1.5
09/09/98	77.7	0.1	79.2	0.0	77.7	0.0	78.2	0.0	76.1	0.0	80.0	1.9	81.9	1.7
09/10/98	73.9	0.1	80.9	0.0	80.8	0.0	82.9	0.0	80.7	0.0	81.7	1.8	86.1	2.2

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
08/28/98	2.8	0.0	---	---	21.8	0.0	22.0	0.0	24.3	0.0	25.9	20.1
08/29/98	2.8	0.0	---	---	24.6	0.0	25.3	0.0	26.1	0.0	29.1	22.5
08/30/98	2.8	0.0	---	---	20.9	0.0	20.6	0.0	20.9	0.0	22.5	16.6
08/31/98	2.8	0.0	---	---	17.9	0.0	17.8	0.0	19.5	0.0	21.3	13.8
09/01/98	1.3	0.0	---	---	21.9	0.0	23.3	0.0	23.7	0.0	24.5	0.0
09/02/98	1.3	0.0	---	---	24.8	0.0	23.9	0.0	26.6	0.0	25.8	0.0
09/03/98	1.3	0.0	---	---	25.1	0.0	25.7	0.0	26.5	0.0	25.5	0.0
09/04/98	1.3	0.0	---	---	25.1	0.0	24.4	0.0	25.2	0.0	24.6	0.0
09/05/98	1.3	0.0	---	---	26.1	0.0	26.0	0.0	27.4	0.0	27.3	0.0
09/06/98	1.3	0.0	---	---	17.9	0.0	18.2	0.0	18.8	0.0	17.2	0.0
09/07/98	1.3	0.0	---	---	16.5	0.0	17.2	0.0	17.7	0.0	17.5	0.0
09/08/98	1.3	0.0	---	---	17.3	0.0	15.9	0.0	15.4	0.0	14.2	0.0
09/09/98	1.3	0.0	---	---	29.3	0.0	15.1	0.0	13.8	0.0	12.7	0.0
09/10/98	1.3	0.0	---	---	30.9	0.0	27.7	0.0	26.4	0.0	26.0	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
08/28/98	120.9	0.0	121.5	35.8	114.1	61.3	119.1	71.2	43.3	9.5
08/29/98	130.7	0.0	123.6	37.1	124.4	41.2	133.8	87.6	48.0	39.5
08/30/98	108.8	0.0	121.9	37.3	118.1	62.5	133.3	71.7	43.0	32.3
08/31/98	124.1	0.0	130.2	36.9	127.9	44.0	132.2	80.8	45.6	44.1
09/01/98	137.1	0.0	139.9	1.1	136.7	0.0	136.0	0.1	43.3	9.5
09/02/98	146.4	0.0	150.2	1.0	149.4	0.0	151.8	0.0	43.3	9.5
09/03/98	116.0	0.0	116.8	1.0	119.1	0.0	127.5	0.0	43.3	9.5
09/04/98	98.8	0.0	102.7	1.2	103.1	0.0	114.9	0.0	43.3	9.5
09/05/98	98.2	0.0	95.2	1.2	97.8	0.0	97.1	0.0	48.0	39.5
09/06/98	101.5	0.0	111.2	1.2	114.9	0.0	118.5	0.0	43.0	32.3
09/07/98	80.6	0.0	90.9	1.2	96.4	0.0	103.6	0.0	45.6	44.1
09/08/98	96.9	0.0	91.2	1.2	92.6	0.0	94.4	0.0	43.6	35.7
09/09/98	89.2	0.0	90.8	1.2	88.9	0.0	96.2	0.0	44.4	11.5
09/10/98	88.4	0.0	86.1	1.1	87.2	0.0	95.2	0.0	31.7	30.3

These data were obtained from the Corps of Engineers through their CAFE reports #96 and #71.
Flow and spill data for Bonneville Dam acquired from the reservoir control center appears to be erroneous in this report.

Gas Bubble Trauma Monitoring Results from Representative Sites on the Snake River and Columbia River

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank: Rank 1	Rank 2	Rank 3	Rank 4	Fish with L. Line GBT: Num Fish	Avg. Rank
McNary Dam													
	08/22/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/25/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/27/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/29/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
John Day Dam													
	08/22/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	08/25/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/27/98	SubYrlng Chinook	55	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/29/98	SubYrlng Chinook	70	0	0	0.00%	0.00%	0	0	0	0	0	0
	09/01/98	SubYrlng Chinook	49	0	0	0.00%	0.00%	0	0	0	0	0	0
Bonneville Dam													
	08/22/98	SubYrlng Chinook	56	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/25/98	SubYrlng Chinook	22	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/27/98	SubYrlng Chinook	9	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/29/98	SubYrlng Chinook	8	0	0	0.00%	0.00%	0	0	0	0	0	0
Rock Island Dam													
	08/24/98	SubYrlng Chinook	8	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/26/98	SubYrlng Chinook	10	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/28/98	SubYrlng Chinook	4	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/31/98	SubYrlng Chinook	7	1	0	0.00%	0.00%	0	0	0	0	1	1

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
8/28	119	120	121	24	110	110	110	24	108	109	111	24	108	109	109	24	107	107	108	20	101	102	103	21
8/29	117	119	122	24	110	110	110	24	109	111	114	24	109	110	110	24	107	107	108	23	102	103	104	24
8/30	116	116	117	24	110	110	110	24	109	110	113	24	109	109	109	23	106	106	106	7	101	103	105	23
8/31	117	117	118	24	109	110	110	24	108	109	110	24	109	109	110	24	107	107	108	12	102	103	105	23
9/1	112	114	117	24	109	109	110	24	109	110	112	24	110	110	110	23	107	107	107	1	103	105	106	23
9/2	111	112	113	24	109	109	109	24	109	110	113	24	109	110	110	23	---	---	---	0	103	105	105	23
9/3	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/4	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/5	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/6	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/7	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/8	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/9	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/10	111	111	112	24	107	107	107	24	107	108	110	24	107	108	108	23	---	---	---	0	98	98	100	21

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
8/28	106	106	107	21	104	105	106	21	108	108	109	21	---	---	---	0	---	---	---	0	---	---	---	0
8/29	107	107	107	24	104	105	106	24	108	109	109	24	---	---	---	0	---	---	---	0	---	---	---	0
8/30	107	107	108	23	103	105	105	23	108	109	109	23	---	---	---	0	---	---	---	0	---	---	---	0
8/31	107	107	108	23	104	105	106	23	109	109	109	23	---	---	---	0	---	---	---	0	---	---	---	0
9/1	110	113	119	23	105	107	109	23	110	111	116	23	---	---	---	0	---	---	---	0	---	---	---	0
9/2	108	108	108	23	104	105	106	23	109	109	109	23	---	---	---	0	---	---	---	0	---	---	---	0
9/3	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/4	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/5	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/6	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/7	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/8	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/9	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/10	---	---	---	#	100	100	100	21	106	106	106	21	---	---	---	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
8/28	---	---	---	0	100	100	100	24	100	101	101	24	100	100	101	24	113	114	115	24	103	105	106	24
8/29	---	---	---	0	100	100	100	24	100	101	101	24	100	100	101	24	110	111	113	24	103	104	106	24
8/30	---	---	---	0	109	110	110	24	100	100	100	24	100	100	101	24	111	113	116	24	103	104	105	24
8/31	---	---	---	0	100	100	100	24	100	100	100	24	100	100	101	24	114	117	120	24	102	104	105	24
9/1	---	---	---	0	110	112	114	24	100	100	100	24	100	100	101	24	113	115	117	24	102	103	105	24
9/2	---	---	---	0	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/3	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/4	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/5	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/6	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/7	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/8	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/9	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/10	---	---	---	0	107	107	108	24	---	---	---	0	---	---	---	0	101	101	101	24	98	98	98	4

[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
8/28	102	103	104	24	99	100	100	24	102	104	107	24	100	101	102	24	100	101	103	24	107	108	108	24
8/29	105	107	108	24	100	100	101	24	101	102	103	24	100	100	101	24	100	101	102	24	106	107	107	24
8/30	103	106	108	24	100	101	102	24	100	100	101	10	98	98	99	10	100	101	102	18	106	107	108	18
8/31	106	109	111	24	100	101	101	24	103	105	108	24	99	101	102	24	101	102	102	24	106	107	108	24
9/1	111	114	117	24	101	102	103	24	105	108	112	24	100	101	102	24	105	106	112	24	103	104	105	24
9/2	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/3	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/4	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/5	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/6	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/7	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/8	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/9	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/10	98	98	99	24	98	98	98	24	100	101	101	24	99	99	100	24	99	99	100	24	100	100	101	24

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
8/28	108	110	112	22	108	109	112	22	104	104	105	22	100	101	105	23	108	114	117	23	106	108	110	24
8/29	107	109	110	24	105	107	108	24	104	105	105	24	100	100	101	24	107	114	116	24	105	108	109	23
8/30	107	109	112	24	107	109	111	24	104	105	105	24	100	100	102	23	107	115	117	24	103	105	106	23
8/31	111	112	114	24	110	111	113	24	105	106	106	24	101	102	105	23	108	114	116	24	107	110	111	23
9/1	112	115	117	24	110	111	112	23	106	107	107	24	104	104	105	23	102	102	108	24	107	108	110	23
9/2	111	114	115	24	110	111	113	24	107	107	108	24	103	103	104	23	101	102	103	24	105	107	111	22
9/3	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/4	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/5	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/6	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/7	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/8	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/9	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/10	103	104	105	24	101	102	102	24	101	101	102	24	99	99	100	23	99	99	100	24	98	99	99	23

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
8/28	114	116	117	24	106	106	106	24	114	114	115	24	118	119	121	24	114	115	115	24	106	107	114	24
8/29	113	115	117	23	107	108	108	24	115	115	116	24	119	120	121	24	114	115	116	24	105	106	108	24
8/30	113	115	115	24	106	107	107	23	114	116	117	23	118	120	121	23	114	115	116	24	105	105	106	24
8/31	114	115	116	24	108	108	108	23	114	114	115	23	118	119	121	23	114	115	116	24	106	108	115	24
9/1	108	109	111	23	108	108	109	23	110	112	116	23	110	112	121	23	114	115	117	24	106	107	108	24
9/2	106	108	109	22	110	110	111	23	110	110	111	23	110	110	111	23	108	109	109	24	106	107	108	24
9/3	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/4	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/5	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/6	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/7	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/8	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/9	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24	100	101	101	24
9/10	100	100	100	24	99	99	99	23	102	102	102	22	100	100	100	23	100	100	101	24	99	99	100	24

[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)
08/28/98	---	---	---	---	4	2	0	0	0	0	0
08/29/98	---	---	---	---	7	3	0	0	0	0	0
08/30/98	---	---	---	---	11	0	0	0	0	0	0
08/31/98	---	---	---	---	5	2	0	0	4	0	0
09/01/98	---	---	---	---	4	1	0	---	0	0	0
09/02/98	---	---	---	---	1	2	1	---	0	0	0
09/03/98	---	---	---	---	3	3	0	---	0	0	0
09/04/98	---	---	---	---	2	2	0	---	4	0	0
09/05/98	---	---	---	---	2	2	0	---	0	0	0
09/06/98	---	---	---	---	0	1	0	---	0	0	0
09/07/98	---	---	---	---	7	4	0	---	---	0	0
09/08/98	---	---	---	---	5	3	1	---	---	0	0
09/09/98	---	---	---	---	9	1	0	---	---	0	0
09/10/98	---	---	---	---	7	1	0	---	---	---	0
Total:	0	0	0	0	67	27	2	0	8	0	0
# Days:	0	0	0	0	14	14	14	4	10	13	14
Average:	0	0	0	0	5	2	0	0	1	0	0

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
08/28/98	---	---	---	---	0	0	0
08/29/98	---	---	---	---	2	1	1
08/30/98	---	---	---	---	3	0	2
08/31/98	---	---	---	---	9	0	1
09/01/98	---	---	---	---	0	0	0
09/02/98	---	---	---	---	4	1	0
09/03/98	---	---	---	---	1	0	1
09/04/98	---	---	---	---	2	0	1
09/05/98	---	---	---	---	0	0	2
09/06/98	---	---	---	---	0	1	2
09/07/98	---	---	---	---	1	0	1
09/08/98	---	---	---	---	1	0	0
09/09/98	---	---	---	---	2	0	0
09/10/98	---	---	---	---	0	0	0
Total:	0	0	0	0	25	3	11
# Days:	0	0	0	0	14	14	14
Average:	0	0	0	0	2	0	1

Wild Subyearling Chinook

LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
165	42	12
133	32	26
130	30	26
159	33	19
87	32	12
60	57	11
37	74	24
30	69	20
32	42	18
24	75	15
46	68	8
77	19	11
131	41	19
108	39	10
1,219	653	231
14	14	14
87	47	17

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)
08/28/98	---	---	---	---	0	0	2	4	1,420	781	202
08/29/98	---	---	---	---	0	0	2	7	2,754	680	122
08/30/98	---	---	---	---	0	0	0	10	1,576	356	72
08/31/98	---	---	---	---	0	0	1	8	1,052	315	131
09/01/98	---	---	---	---	0	0	1	---	1,164	524	230
09/02/98	---	---	---	---	0	0	0	---	1,296	653	204
09/03/98	---	---	---	---	0	0	0	---	1,136	667	53
09/04/98	---	---	---	---	0	0	0	---	1,168	412	90
09/05/98	---	---	---	---	0	0	0	---	848	312	178
09/06/98	---	---	---	---	0	0	0	---	584	300	263
09/07/98	---	---	---	---	0	0	1	---	---	182	108
09/08/98	---	---	---	---	0	0	1	---	---	166	96
09/09/98	---	---	---	---	0	0	1	---	---	287	69
09/10/98	---	---	---	---	0	0	0	---	---	---	47
Total:	0	0	0	0	0	0	9	29	12,998	5,635	1,865
# Days:	0	0	0	0	14	14	14	4	10	13	14
Average:	0	0	0	0	0	0	1	7	1,300	433	133

	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)
08/28/98	---	---	---	---	1	1	0	1	0	0	0
08/29/98	---	---	---	---	1	4	1	0	0	0	0
08/30/98	---	---	---	---	3	4	0	0	0	0	0
08/31/98	---	---	---	---	1	2	1	0	0	0	0
09/01/98	---	---	---	---	2	1	1	---	0	0	0
09/02/98	---	---	---	---	3	4	1	---	0	0	0
09/03/98	---	---	---	---	4	6	1	---	0	0	0
09/04/98	---	---	---	---	4	4	1	---	0	0	0
09/05/98	---	---	---	---	1	5	1	---	0	0	0
09/06/98	---	---	---	---	1	5	1	---	0	0	0
09/07/98	---	---	---	---	0	6	1	---	---	0	0
09/08/98	---	---	---	---	2	1	0	---	---	0	0
09/09/98	---	---	---	---	2	7	0	---	---	0	0
09/10/98	---	---	---	---	3	6	0	---	---	---	0
Total:	0	0	0	0	28	56	9	1	0	0	0
# Days:	0	0	0	0	14	14	14	4	10	13	14
Average:	0	0	0	0	2	4	1	0	0	0	0

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)
08/28/98	---	---	---	---	1	1	1	0	0	0	0
08/29/98	---	---	---	---	0	0	0	0	0	0	0
08/30/98	---	---	---	---	0	0	0	0	0	0	0
08/31/98	---	---	---	---	0	0	0	0	0	0	0
09/01/98	---	---	---	---	0	1	1	---	4	0	0
09/02/98	---	---	---	---	0	1	1	---	0	0	0
09/03/98	---	---	---	---	0	0	1	---	0	0	0
09/04/98	---	---	---	---	0	0	1	---	0	0	0
09/05/98	---	---	---	---	1	0	2	---	0	0	0
09/06/98	---	---	---	---	0	0	3	---	0	0	0
09/07/98	---	---	---	---	1	0	3	---	---	0	0
09/08/98	---	---	---	---	0	0	1	---	---	0	0
09/09/98	---	---	---	---	0	1	0	---	---	4	0
09/10/98	---	---	---	---	0	1	0	---	---	---	0
Total:	0	0	0	0	3	5	14	0	4	4	0
# Days:	0	0	0	0	14	14	14	4	10	13	14
Average:	0	0	0	0	0	0	1	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)
08/28/98	---	---	---	---	0	0	0	0	0	0	0
08/29/98	---	---	---	---	0	0	3	0	0	0	0
08/30/98	---	---	---	---	3	0	1	0	0	0	0
08/31/98	---	---	---	---	2	0	1	0	0	0	0
09/01/98	---	---	---	---	0	0	0	---	0	0	0
09/02/98	---	---	---	---	0	0	0	---	4	0	0
09/03/98	---	---	---	---	0	2	0	---	0	0	0
09/04/98	---	---	---	---	1	0	3	---	0	0	0
09/05/98	---	---	---	---	0	0	2	---	0	0	0
09/06/98	---	---	---	---	0	2	0	---	0	0	0
09/07/98	---	---	---	---	0	0	0	---	---	0	0
09/08/98	---	---	---	---	1	1	1	---	---	0	0
09/09/98	---	---	---	---	1	2	0	---	---	0	0
09/10/98	---	---	---	---	1	1	0	---	---	---	0
Total:	0	0	0	0	9	8	11	0	4	0	0
# Days:	0	0	0	0	14	14	14	4	10	13	14
Average:	0	0	0	0	1	1	1	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)
08/28/98	---	---	---	---	0	0	0	0	0	0	0
08/29/98	---	---	---	---	0	0	0	0	0	0	0
08/30/98	---	---	---	---	0	0	0	0	0	0	0
08/31/98	---	---	---	---	0	0	0	0	0	0	0
09/01/98	---	---	---	---	0	0	0	---	0	0	0
09/02/98	---	---	---	---	0	1	0	---	0	0	0
09/03/98	---	---	---	---	0	0	1	---	0	0	0
09/04/98	---	---	---	---	0	3	0	---	0	0	0
09/05/98	---	---	---	---	0	3	0	---	0	0	0
09/06/98	---	---	---	---	0	3	0	---	0	0	0
09/07/98	---	---	---	---	0	1	0	---	---	0	0
09/08/98	---	---	---	---	0	1	0	---	---	0	0
09/09/98	---	---	---	---	0	1	0	---	---	0	0
09/10/98	---	---	---	---	0	1	0	---	---	---	0
Total:	0	0	0	0	0	14	1	0	0	0	0
# Days:	0	0	0	0	14	14	14	4	10	13	14
Average:	0	0	0	0	0	1	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)
08/28/98	---	---	---	---	1	1	0	0	0	0	0
08/29/98	---	---	---	---	1	0	1	0	0	0	0
08/30/98	---	---	---	---	0	0	0	0	0	0	0
08/31/98	---	---	---	---	1	0	0	0	4	0	0
09/01/98	---	---	---	---	0	0	0	---	0	0	0
09/02/98	---	---	---	---	0	0	0	---	0	0	0
09/03/98	---	---	---	---	0	0	0	---	0	0	0
09/04/98	---	---	---	---	1	0	0	---	0	0	0
09/05/98	---	---	---	---	0	0	0	---	0	4	0
09/06/98	---	---	---	---	0	0	0	---	0	0	0
09/07/98	---	---	---	---	0	0	0	---	---	0	0
09/08/98	---	---	---	---	0	0	0	---	---	0	0
09/09/98	---	---	---	---	0	0	0	---	---	0	0
09/10/98	---	---	---	---	0	0	0	---	---	---	0
Total:	0	0	0	0	4	1	1	0	4	4	0
# Days:	0	0	0	0	14	14	14	4	10	13	14
Average:	0	0	0	0	0	0	0	0	0	0	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 September 10, 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	38,253	762	114,000	963	71,826	2,812	21,433	2,674	27,939	1,926	21,772	2,906	109,134	9,668	149,868	7,372	127,828	12,760
TDA	25,330	503	69,365	375	44,144	1,889	15,475	1,565	20,201	1,255	18,063	2,140	39,574	4,169	72,528	3,619	64,459	7,193
JDA	22,495	418	62,253	327	34,393	1,541	16,907	1,557	20,508	1,261	15,790	1,851	23,324	1,742	45,201	2,430	42,020	4,256
MCN	19,456	335	57,832	404	33,819	1,722	16,223	1,413	20,934	1,417	16,965	1,827	16,638	1,568	30,084	1,754	28,690	3,437
IHR	12,420	131	41,398	75	18,178	714	5,485	299	9,196	122	4,618	417	1,045	195	1,018	88	942	89
LMN	10,627	126	38,479	146	17,565	767	4,319	301	9,153	100	4,391	442	404	76	691	52	530	66
LGS	10,218	104	37,874	108	n/a	n/a	4,345	341	9,372	65	n/a	n/a	253	61	445	22	n/a	n/a
LWG	9,881	106	33,855	81	15,110	655	4,440	325	10,709	127	4,392	430	196	36	313	28	175	13
PRD	4,147	37	6,780	8	10,704	173	13,951	612	13,107	509	13,949	581	5,688	547	8,470	491	6,487	550
RIS	3,270	54	6,153	52	8,534	192	11,689	1,127	10,960	614	11,712	998	1,607	398	1,552	349	2,219	449
RRH	789	53	1,856	10	2,066	52	6,817	332	5,614	694	4,258	397	1,049	117	659	393	1,087	199
WEL	6	4	942	29	1,204	50	2,829	924	2,569	152	2,716	280	338	25	174	56	346	65

	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	3,725	247	8,220	567	6,042	1,885	13,121	47,008	51,154	121,295	211,629	192,590	29,758
TDA	106	16	748	94	667	353	8,792	32,424	40,178	32,090	85,853	89,809	10,101
JDA	98	13	292	55	372	252	10,010	35,825	40,542	39,572	58,307	55,857	8,342
MCN	13	0	80	33	60	45	9,486	38,042	42,632	20,112	45,145	45,413	4,481
IHR	0	0	0	0	0	0	2	15	10	12,495	25,417	21,665	2,229
LMN	0	0	0	0	0	0	2	16	11	7,291	19,350	17,858	1,409
LGS	0	0	0	0	n/a	n/a	4	9	n/a	4,991	12,756	n/a	1,316
LWG	0	0	0	0	0	0	3	11	8	6,566	13,066	12,881	1,581
PRD	8	1	0	0	2	0	11,607	45,410	47,422	2,858	4,892	5,325	0
RIS	9	0	5	0	7	0	9,308	41,446	41,344	1,823	3,638	4,152	0
RRH	0	0	0	0	3	0	5,666	30,479	21,414	1,533	2,866	2,634	0
WEL	0	3	2	1	1	0	3,804	25,699	20,490	649	1,487	1,819	0

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 LMN, RIS, and RRH are based on video counts accumulated through September 09.

1998 totals at LGS are based on video counts accumulated through September 08.

Adult count records at LGS have been maintained since 1993.

** - Through June 28, all (spring) chinook were trapped and removed from the ladder at Wells prior to the counting window.

* - 1998 John Day Steelhead counts will be revised

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

Transportation Summary Report

Two-Week Transportation Summary
from 08/28/98 to 09/10/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	92	1,219	12	28	4	1,355
Bypassed	0	21	11	0	0	32
Trucked	87	1,146	0	26	3	1,262
Barged	0	0	0	0	0	0
Total Transported	**87**	**1,146**	**0**	**26**	**3**	**1,262**
LITTLE GOOSE DAM						
Collected	30	653	13	56	15	767
Bypassed	0	0	9	0	0	9
Trucked	26	642	0	56	15	739
Barged	0	0	0	0	0	0
Total Transported	**26**	**642**	**0**	**56**	**15**	**739**
LOWER MONUMENTAL DAM						
Collected	13	240	25	9	2	289
Bypassed	0	0	9	0	0	9
Trucked	12	222	14	9	2	259
Barged	0	0	0	0	0	0
Total Transported	**12**	**222**	**14**	**9**	**2**	**259**
MCNARY DAM						
Collected	8	12,998	8	0	4	13,018
Bypassed	0	583	0	0	0	583
Trucked	7	12,126	4	0	3	12,140
Barged	0	0	0	0	0	0
Total Transported	**7**	**12,126**	**4**	**0**	**3**	**12,140**
PROJECT TOTALS						
Collected	143	15,110	58	93	25	15,429
Bypassed	0	604	29	0	0	633
Trucked	132	14,136	18	91	23	14,400
Barged	0	0	0	0	0	0
Total Transported	**132**	**14,136**	**18**	**91**	**23**	**14,400**

Transportation Summary Report

Cumulative Transportation Summary
through 09/10/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	1,603,919	74,526	5,085,566	155,448	49,626	6,969,085
Bypassed	108,383	480	125,492	1,426	0	235,781
Trucked	41,226	64,291	67,843	6,384	625	180,369
Barged	1,449,633	8,532	4,888,200	147,145	48,911	6,542,421
Total Transported	**1,490,859**	**72,823**	**4,956,043**	**153,529**	**49,536**	**6,722,790**
LITTLE GOOSE DAM						
Collected	899,997	51,838	1,505,160	51,233	17,723	2,525,951
Bypassed	0	0	12	0	0	12
Trucked	13,718	48,207	10,006	3,568	856	76,355
Barged	874,575	1,663	1,490,712	47,129	16,696	2,430,775
Total Transported	**888,293**	**49,870**	**1,500,718**	**50,697**	**17,552**	**2,507,130**
LOWER MONUMENTAL DAM						
Collected	492,744	22,549	949,270	29,618	14,890	1,509,071
Bypassed	4,290	1,133	12,668	1,031	639	19,761
Trucked	1,345	17,140	4,425	486	269	23,665
Barged	485,912	3,913	931,488	28,063	13,963	1,463,339
Total Transported	**487,257**	**21,053**	**935,913**	**28,549**	**14,232**	**1,487,004**
MCNARY DAM						
Collected	1,044,089	8,263,571	327,374	125,972	512,262	10,273,268
Bypassed	1,004,298	163,812	316,015	109,189	492,648	2,085,962
Trucked	7,054	298,355	4,901	4,978	4,285	319,573
Barged	28,873	7,624,549	6,038	11,552	13,065	7,684,077
Total Transported	**35,927**	**7,922,904**	**10,939**	**16,530**	**17,350**	**8,003,650**
PROJECT TOTALS						
Collected	4,040,749	8,412,484	7,867,370	362,271	594,501	21,277,375
Bypassed	1,116,971	165,425	454,187	111,646	493,287	2,341,516
Trucked	63,343	427,993	87,175	15,416	6,035	599,962
Barged	2,838,993	7,638,657	7,316,438	233,889	92,635	18,120,612
Total Transported	**2,902,336**	**8,066,650**	**7,403,613**	**249,305**	**98,670**	**18,720,574**