



Fish Passage Center

Weekly Report #98 - 23

August 21, 1998

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SUMMARY OF EVENTS:

Water Supply: There was no significant precipitation in the basin during last week. The temperatures were four to seven degrees above normal.

System Storage: US reservoirs continue drafting BiOp required summer augmentation for endangered Snake River salmon. A summary of actual elevations on July 30, 1998 is shown in the following table:

Reservoir	Actual Elev. [ft] 8/19/98	Max. Pool [ft]
Libby	2449.22	2459.0
Hungry Horse	3543.04	3560.0
Grand Coulee	1282.10	1290.0
Brownlee	2042.08	2077.0
Dworshak	1529.76	1600.0

US reservoirs:

- Libby continues drafting for summer augmentation flows at an increased flat rate of 22 kcfs. Libby outflow will ramp down to 10 kcfs near the end of the month to deliver as much water as possible past McNary before August 31. Rampdown will not occur at a rate higher than 3 kcfs per day. The Libby-Arrow swap amount is expected to be close to 100 kcfs.
- Hungry Horse ramped down to 4 kcfs through August 25. During the last week of August, the project will operate to draft to elevation 3540 ft by August 31 and meet 3.5 kcfs flow level at Columbia Falls.
- Grand Coulee will operate to support decreasing McNary flows to an elevation of 1279 ft by August 31.

- Brownlee delivered all augmentation and shaping water, and will continue passing inflow at a rate of 13 to 14 kcfs.
- Dworshak will reduce outflow beginning on Friday, August 21 at 1600 at 10.5 kcfs as BPA proposed in order to avoid spilling the additional 4 kcfs. The outflow will be gradually reduced to 4.7 kcfs on August 25. For the remainder of the month, the outflow will be reduced to 2.5 kcfs, such that Dworshak will not be drafted below an elevation of 1520 ft.

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 5.5 kcfs and is about 92% full.

Palisades continues drafting for Upper Snake diversion irrigation withdrawal at a rate of 9.3 kcfs, about 3 kcfs higher than inflow and is about 87% full.

American Falls continues intensive drafting to provide irrigation diversion flow downstream at Minidoka. Current outflow is about 12.1 kcfs, about 9 kcfs higher than inflow and the reservoir is about 67% full.

Millner flow, at the lowest point of the Upper Snake system, continues to be at a constant rate of about 1.5 kcfs since July 7. Irrigation withdrawal upstream of Minidoka continued to be about 10.3 kcfs. Irrigation withdrawal at the Upper Snake diversion, upstream from Blackfoot, continues to be between 8 and 9 kcfs.

Boise River Basin:

Anderson and Arrowrock continue with more intensive drafting for irrigation withdrawals. Current reservoir capacities are 83% of full and 48% of full. The flow at Glenwood Bridge remained about 1.3 kcfs.

System Streamflow: The weekly average flows continue to recede due to dry and hot weather. Flows at McNary and Lower Granite continue to be below the summer target flows required by BiOp. The summary of average weekly flows for run of the river projects during the August 7 through August 19 period is shown in the following Table:

Project	August 14-19	August 7-13
Priest Rapids	108 kcfs	136.0 kcfs
McNary	143.4 kcfs	161.2 kcfs
Lower Granite	34.3 kcfs	37.7 kcfs
Bonneville	155.3kcfs	173.1 kcfs*

Spill: Spill above hydraulic capacity (approximately 4 kcfs) continues at Dworshak Dam as flow augmentation is implemented. Spill at this project will decrease today as Dworshak begins its slow ramping down of augmentation flows. In the Lower Snake River the summer spill program continues at Ice Harbor Dam. Spill averaged 27 kcfs at Ice Harbor Dam over the past week. Some reduction in spill at this project occurred earlier in the week as a result of double testing at Little Goose Dam.

The lower Columbia River summer spill program continues. Some spill has occurred at McNary Dam over the past week in excess of hydraulic capacity. Spill averaged 47 kcfs at John Day Dam, 67 kcfs at The Dalles Dam, and approximately 91 kcfs at Bonneville Dam over the past week.

The summer spill program in the Mid Columbia continues at Wanapum and Priest Rapids dams.

Total Dissolved Gas Supersaturation and gas Bubble Trauma Monitoring

TDGS levels have been at, or below, the gas waivers at all monitoring sites. Gas bubble trauma monitoring has ended for the season at the Snake River monitoring sites. Sampling will continue through August 31 at Rock Island, McNary, John Day, and Bonneville dams. Few juvenile salmon have been detected with signs over the past week.

Smolt Monitoring: Subyearling chinook passage indices continued their typical seasonal decline throughout the Snake and Columbia rivers. In the Snake River, wild subyearling chinook passage indices averaged 491 fish per day at Lower Granite Dam, unchanged from the average of the final five days of last week. However, by the last couple of days of this week, the subyearling chinook index at Lower Granite Dam had dropped below 400 fish. Wild subyearling chinook passage indices at Little Goose and Lower Monumental dams have dropped below 100 and 40 fish per day, respectively, by the last couple of days this week. In the Mid-Columbia River, subyearling chinook passage indices at Rock Island Dam averaged 31 fish per day, a 57% drop from last week's average. In the lower Columbia River, subyearling chinook passage indices at McNary Dam dropped 24% to an average of 14,284 fish per day. Subyearling chinook passage indices at John Day Dam started the week at 10,915 fish and dropped to an average of 1,497 fish per day in the final three days of this week. The average subyearling chinook passage indices at Bonneville Dam was 1,024 fish per day, a drop of 30% from last week.

Adult Fish Passage: Steelhead passage at Bonneville Dam fell from almost 2,700 per day on August 14 to less than 500 per day by the end of the Report week (August 20). Numbers of fish moving past The Dalles and upstream projects remain at low levels; most projects recorded less than 100 steelhead passing per day. The Bonneville count through August 20 was 78,023 and this total was about 50% of the 1997 count and 62% of the 10-year average. Of the steelhead counted at Bonneville Dam, about 14,800 have passed The Dalles Dam or 19% of the Bonneville total. With the hot water temperatures that still exist in the lower Columbia River, steelhead continue holding in cooler water in tributary streams above Bonneville Dam. The water temperatures from Bonneville Dam to McNary Dam ranged between 70°F to 77°F for the week. Wild steelhead counted at Bonneville total 23,456, with 5,475 counted at The Dalles Dam. You might note that the Mid-Columbia dams do not include wild steelhead in their count totals submitted to the COE.

Passage of adult fall chinook at Bonneville ranged between 600 and 1,000 fish per day, with the season total through August 20 of 10,281, about 77% and 70% of the respective 1997 and 10-year average counts. The daily count at The Dalles Dam was up to 359 on August 20 with the season total 2,650. Adult fall chinook are being counted at all sites except for Wells Dam which is still counting summer chinook. For point of interest, a couple of PIT tagged fall chinook have already returned to the Snake River.

Sockeye passage is almost complete for 1998 with the last few passing the Mid-Columbia projects.

Coho passage for the 1998 season remains below 50 total to date at Bonneville Dam.

Hatchery Releases: Columbia Basin hatcheries completed release of subyearling summer and fall chinook for the year. Spring Creek Hatchery personnel released 388,700 subyearling spring chinook into the Big White Salmon River on August 13 at 37 fish/lb. Other releases of subyearling spring and summer chinook will be outplanted in Idaho tributaries during this summer and fall. Most fall plants of subyearling chinook are expected to migrate in spring 1999.

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/07/98	120.9	0.1	119.9	0.0	120.7	8.5	120.9	12.3	118.0	10.6	108.3	18.7	118.3	43.9
08/08/98	106.8	0.1	107.8	0.0	114.0	8.4	117.5	8.3	117.9	10.6	112.1	19.4	125.0	46.7
08/09/98	113.5	0.1	113.9	0.0	116.0	8.6	115.6	12.6	114.2	10.6	109.0	19.6	118.3	43.1
08/10/98	141.8	0.1	142.2	0.0	142.9	16.6	139.1	0.0	135.8	10.7	128.2	22.7	139.4	51.8
08/11/98	130.9	0.1	131.5	0.0	132.9	13.2	137.7	4.3	136.7	10.4	133.1	26.6	147.2	53.8
08/12/98	146.7	0.1	147.6	0.0	150.7	17.9	147.4	12.5	145.8	10.1	137.4	29.0	152.9	56.2
08/13/98	129.1	0.1	135.6	0.0	136.6	13.3	145.2	14.4	141.1	3.5	135.9	28.2	150.8	55.9
08/14/98	119.2	0.1	124.2	0.0	128.3	6.4	128.2	15.0	127.3	0.0	120.2	25.2	131.3	49.0
08/15/98	73.0	0.2	79.2	0.0	92.8	0.0	101.2	10.1	101.2	0.0	108.2	21.7	123.5	46.4
08/16/98	81.7	0.1	80.0	0.0	74.9	0.0	73.4	0.0	70.1	0.0	60.3	12.3	69.1	26.5
08/17/98	105.1	0.1	107.3	0.0	106.0	0.0	108.4	0.0	105.2	0.0	91.9	19.1	99.7	37.6
08/18/98	100.0	0.1	100.6	0.0	102.1	0.0	104.3	0.0	102.0	0.0	94.5	19.3	106.1	39.1
08/19/98	109.8	0.1	108.5	0.0	108.7	0.0	112.7	0.0	109.9	0.0	106.6	22.7	118.2	45.2
08/20/98	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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

Date	Dworshak		Brownlee		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/07/98	14.2	4.1	---	---	37.6	0.0	38.3	0.0	41.1	0.0	43.2	31.1
08/08/98	14.2	4.2	---	---	39.1	0.0	39.7	0.0	41.9	0.0	43.6	33.8
08/09/98	14.2	4.0	---	---	33.3	0.0	31.4	0.0	31.6	0.0	34.9	28.0
08/10/98	14.1	4.0	---	---	37.6	0.0	38.2	0.0	40.5	0.0	44.4	33.0
08/11/98	14.3	4.1	---	---	36.9	0.0	38.4	0.0	41.2	0.0	41.1	23.3
08/12/98	14.3	4.1	---	---	39.0	0.0	38.8	0.0	40.6	0.0	44.4	33.2
08/13/98	14.3	4.1	---	---	40.1	0.0	42.1	0.0	42.8	0.0	42.9	25.7
08/14/98	14.4	4.0	---	---	38.4	0.0	30.0	2.9	28.7	0.0	25.0	7.5
08/15/98	14.4	4.0	---	---	36.3	0.0	42.0	2.2	46.5	0.0	51.1	35.0
08/16/98	14.4	4.0	---	---	33.9	0.0	35.2	0.0	36.7	0.0	40.7	29.3
08/17/98	14.3	3.8	---	---	29.2	0.0	30.9	0.0	33.4	0.0	36.0	29.5
08/18/98	13.8	3.5	---	---	33.7	0.0	33.3	0.0	34.3	0.0	36.0	29.5
08/19/98	14.1	3.5	---	---	34.4	0.0	35.3	0.0	36.2	0.0	40.0	32.9
08/20/98	---	---	---	---	---	---	---	---	---	---	---	---

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
08/07/98	155.5	10.0	169.2	44.8	172.1	109.3	183.2	84.3	48.0	39.5
08/08/98	152.4	0.0	174.5	51.5	167.8	101.7	172.8	85.3	43.0	32.3
08/09/98	140.1	0.0	125.4	37.3	125.9	48.3	150.8	85.7	45.6	44.1
08/10/98	153.2	0.0	161.8	44.0	156.7	46.1	156.3	85.1	43.3	9.5
08/11/98	162.6	4.8	179.8	47.4	174.0	51.1	174.6	88.3	43.3	9.5
08/12/98	172.8	14.6	172.9	46.2	165.7	94.3	177.3	88.3	43.3	9.5
08/13/98	191.8	25.8	194.6	55.3	193.0	118.7	196.9	89.0	43.3	9.5
08/14/98	175.5	10.8	167.4	51.6	161.0	102.5	184.6	89.8	43.3	9.5
08/15/98	152.3	0.0	162.5	48.5	161.5	59.3	170.7	89.4	48.0	39.5
08/16/98	123.5	0.0	131.5	43.7	131.9	69.7	152.9	93.1	43.0	32.3
08/17/98	132.7	0.0	133.9	39.1	129.9	45.9	145.4	91.8	45.6	44.1
08/18/98	146.4	20.7	144.5	46.1	134.5	73.6	137.7	89.8	43.6	35.7
08/19/98	130.1	0.0	142.0	43.3	142.2	52.1	140.5	90.6	44.4	11.5
08/20/98	---	---	---	---	---	---	---	---	31.7	30.3

These data were obtained from the Corps of Engineers through their CAFE reports #96 and #71.

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				Fish with L. Line GBT	
								Rank 1	Rank 2	Rank 3	Rank 4	Num Fish	Avg. Rank
McNary Dam													
	08/11/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/13/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/15/98	SubYrlng Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	08/18/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/20/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
John Day Dam													
	08/11/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	08/13/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	08/15/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	08/18/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/20/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Bonneville Dam													
	08/11/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/13/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/15/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/18/98	SubYrlng Chinook	41	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/20/98	SubYrlng Chinook	71	0	0	0.00%	0.00%	0	0	0	0	0	0
Rock Island Dam													
	08/12/98	SubYrlng Chinook	68	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/14/98	SubYrlng Chinook	57	1	1	1.75%	0.00%	1	0	0	0	0	0
	08/17/98	SubYrlng Chinook	16	0	0	0.00%	0.00%	0	0	0	0	0	0
	08/19/98	SubYrlng Chinook	24	0	0	0.00%	0.00%	0	0	0	0	0	0

Hatchery Release Summary
Schedule for Last Two Weeks
From 7/31/98 to 8/13/98

Hatchery	Species	FPC LotID	Number Released	Release Dates		Release Site	River Name
				Begin	End		
USFWS							
Spring Creek	SP Chinook	98058	500,000	8/13/98	8/20/98	White Salmon R	Columbia River
		Agency Total:	500,000				
		Total Release:	500,000				

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High²

Total Dissolved Gas Saturation Data at Upper Columbia Sites

Date	<u>Can. Boundary</u>			<u>Grand Coulee</u>				<u>Tlwr G. Coulee</u>				<u>Chief Joseph</u>			<u>Wells</u>			<u>Rocky Reach</u>						
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>			
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
8/7	121	121	123	24	113	113	114	24	115	116	130	19	112	112	113	24	110	110	111	24	109	110	110	24
8/8	118	119	126	24	112	113	113	24	---	---	---	0	112	112	113	24	110	110	111	24	108	109	110	24
8/9	117	118	119	24	112	113	113	24	---	---	---	0	112	113	113	24	109	110	111	24	109	109	110	23
8/10	117	118	119	24	112	112	113	24	---	---	---	0	112	112	112	24	109	110	110	18	106	107	112	13
8/11	116	116	118	8	111	112	112	23	110	110	111	9	111	112	113	23	109	109	109	23	107	107	108	12
8/12	---	---	---	0	111	111	111	24	110	111	112	24	111	111	112	23	109	109	109	21	108	109	111	21
8/13	---	---	---	0	111	111	112	24	110	111	113	24	111	111	112	23	109	109	110	22	108	108	109	23
8/14	---	---	---	0	111	112	112	24	111	112	114	24	112	112	113	24	110	110	110	24	108	109	111	24
8/15	---	---	---	0	112	112	112	24	114	116	119	24	112	113	113	24	109	110	111	24	107	109	111	24
8/16	---	---	---	0	111	111	112	24	111	112	113	24	111	111	112	23	107	107	109	23	106	106	108	23
8/17	---	---	---	0	110	111	111	24	111	112	113	24	110	110	111	23	107	107	107	23	104	104	105	23
8/18	117	117	117	10	110	110	111	24	111	111	113	24	111	111	112	23	106	107	108	23	103	103	104	23
8/19	117	117	118	20	111	111	111	24	110	111	112	24	110	110	111	23	106	108	108	23	102	103	104	23
8/20	112	112	113	13	111	111	111	16	110	111	113	16	110	111	112	15	107	107	108	17	105	107	109	17

Total Dissolved Gas Saturation Data at Mid Columbia Sites

Date	<u>Tlwr. Rocky R.</u>			<u>Rock Island</u>				<u>Tlwr. Rock Island</u>				<u>Wanapum</u>			<u>Tlwr Wanapum</u>			<u>Priest Rapids</u>						
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>			
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
8/7	112	112	112	24	109	111	112	24	114	114	115	24	---	---	---	0	---	---	---	0	---	---	---	0
8/8	112	112	113	22	109	110	111	24	114	114	115	24	---	---	---	0	---	---	---	0	---	---	---	0
8/9	111	111	111	24	109	110	111	24	113	113	114	24	111	112	113	24	113	114	116	24	111	113	115	24
8/10	110	111	112	21	109	110	110	21	113	113	113	21	110	111	112	23	112	114	115	23	111	112	113	23
8/11	110	111	111	22	108	109	110	22	112	113	114	22	---	---	---	0	---	---	---	0	---	---	---	0
8/12	112	113	113	21	109	111	112	21	114	114	115	9	---	---	---	0	---	---	---	0	---	---	---	0
8/13	113	113	114	23	111	112	113	23	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
8/14	114	115	116	24	112	113	114	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
8/15	113	114	115	24	110	111	111	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
8/16	109	110	111	23	108	109	110	23	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
8/17	108	109	109	23	106	107	108	23	109	109	109	7	---	---	---	0	---	---	---	0	---	---	---	0
8/18	106	106	106	23	105	105	106	23	108	109	109	23	---	---	---	0	---	---	---	0	---	---	---	0
8/19	106	106	106	23	104	105	106	23	108	108	109	23	---	---	---	0	---	---	---	0	---	---	---	0
8/20	106	106	107	17	104	105	105	17	108	109	109	17	---	---	---	0	---	---	---	0	---	---	---	0

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

Date	<u>Dwnstr P Rapids</u>			<u>Dworshak</u>				<u>Clearwater</u>				<u>Snake-Lewiston</u>			<u>Lower Granite</u>			<u>Tlwr L. Granite</u>						
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>			
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
8/7	---	---	---	0	110	111	112	24	110	111	112	24	105	106	107	24	101	101	102	24	102	102	103	24
8/8	---	---	---	0	110	111	112	24	110	111	112	24	105	107	107	24	103	105	107	24	102	102	103	24
8/9	---	---	---	0	110	111	112	24	110	111	112	24	105	106	107	24	105	106	109	24	103	103	104	24
8/10	---	---	---	0	110	111	112	24	110	111	112	24	105	106	107	24	102	103	106	23	101	101	102	6
8/11	---	---	---	0	110	110	111	24	110	111	112	24	105	106	107	24	102	102	103	24	---	---	---	0
8/12	---	---	---	0	110	110	111	24	110	111	111	24	105	106	107	24	103	104	108	24	101	101	102	9
8/13	---	---	---	0	110	111	111	24	110	110	111	24	106	108	111	24	109	111	112	24	---	---	---	0
8/14	---	---	---	0	109	111	112	24	100	101	101	24	106	108	110	24	109	110	110	24	104	104	104	10
8/15	---	---	---	0	110	110	111	24	100	101	101	24	106	108	109	24	105	105	106	24	104	104	104	24
8/16	---	---	---	0	111	111	111	24	109	110	111	24	105	107	108	24	103	103	104	24	103	103	103	24
8/17	---	---	---	0	110	111	111	24	109	109	110	24	105	107	108	24	102	103	103	24	103	104	106	24
8/18	---	---	---	0	110	110	111	24	108	109	110	24	105	106	108	24	102	102	102	24	102	102	103	24
8/19	---	---	---	0	109	109	109	24	108	108	109	23	105	106	107	24	102	104	105	24	101	102	102	24
8/20	---	---	---	0	109	109	110	17	108	108	110	16	105	105	107	17	105	105	107	17	102	102	103	17

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 High²

Total Dissolved Gas Saturation Data at Snake Sites

Date	<u>Little Goose</u>			<u>Tlwtr L. Goose</u>			<u>Lower Mon.</u>			<u>Tlwtr L. Mon</u>			<u>Ice Harbor</u>			<u>Tlwtr Ice Harbor</u>								
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#						
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg					
8/7	102	102	103	24	102	103	103	24	104	104	104	24	103	103	104	24	103	103	104	24	114	116	116	23
8/8	103	103	105	24	102	102	103	24	104	105	106	24	103	103	104	24	103	103	104	24	113	116	117	24
8/9	103	103	106	12	102	102	102	12	104	105	106	24	102	103	104	24	102	103	104	24	113	115	117	24
8/10	101	101	104	24	102	103	106	24	102	102	104	24	101	102	102	24	102	102	104	24	114	116	117	24
8/11	100	101	102	24	100	101	101	24	103	104	105	24	102	103	103	24	103	103	104	24	111	114	117	24
8/12	102	104	105	24	100	101	101	24	102	103	104	23	102	102	103	24	102	103	104	23	113	114	116	23
8/13	105	107	112	24	101	101	102	24	105	106	108	24	102	103	103	24	102	103	103	24	111	112	114	24
8/14	101	102	105	24	116	130	143	24	103	104	105	24	102	102	103	24	104	105	107	19	107	108	111	19
8/15	100	100	101	24	113	124	142	24	103	103	104	24	102	102	103	24	---	---	---	0	---	---	---	0
8/16	100	100	100	24	101	101	102	24	102	102	102	24	101	102	102	24	---	---	---	0	---	---	---	0
8/17	100	100	100	24	100	101	101	24	101	101	103	20	101	101	102	19	101	101	102	24	105	107	109	24
8/18	100	100	100	24	100	100	100	23	101	101	102	24	101	102	102	24	100	100	101	23	108	109	111	24
8/19	100	100	101	24	100	100	100	24	101	101	102	9	---	---	---	0	100	100	101	24	109	110	111	24
8/20	100	100	101	17	100	100	101	17	102	103	105	17	---	---	---	0	100	100	100	17	109	110	111	17

Total Dissolved Gas Saturation Data at Lower Columbia Sites

Date	<u>McNary-Oregon</u>			<u>McNary-Wash.</u>			<u>Tlwtr McNary</u>			<u>John Day</u>			<u>Tlwtr John Day</u>			<u>The Dalles</u>								
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#						
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg					
8/7	---	---	---	0	---	---	---	0	---	---	---	0	102	102	102	23	110	117	119	23	105	107	109	24
8/8	---	---	---	0	---	---	---	0	---	---	---	0	102	102	104	24	111	119	120	24	105	108	110	24
8/9	---	---	---	0	---	---	---	0	---	---	---	0	101	102	103	24	110	116	118	24	105	107	111	24
8/10	---	---	---	0	---	---	---	0	---	---	---	0	101	101	101	23	109	115	118	24	105	107	108	23
8/11	---	---	---	0	---	---	---	0	---	---	---	0	100	100	101	23	110	117	119	24	105	107	110	23
8/12	---	---	---	0	---	---	---	0	---	---	---	0	101	102	105	23	110	117	120	24	104	106	111	23
8/13	109	111	115	24	110	111	114	24	112	113	114	24	103	104	106	23	110	117	120	24	107	110	112	23
8/14	111	114	116	24	110	111	112	24	111	112	113	24	103	103	104	24	111	118	118	24	106	109	111	24
8/15	110	111	112	24	109	110	110	24	109	110	111	24	103	103	103	24	111	117	118	24	105	107	110	24
8/16	108	109	110	24	106	107	108	24	107	108	108	24	102	102	102	23	111	117	118	24	103	104	107	23
8/17	108	109	110	24	105	105	106	24	106	106	106	24	101	101	102	23	111	117	118	24	104	106	106	23
8/18	---	---	---	0	106	106	107	24	108	111	120	24	101	101	101	23	110	116	118	23	104	106	108	23
8/19	---	---	---	0	107	109	112	23	105	106	106	23	101	102	103	23	111	118	119	24	105	107	108	23
8/20	---	---	---	0	106	107	108	17	105	105	106	17	100	101	102	15	110	111	119	13	108	109	112	15

Total Dissolved Gas Saturation Data at Lower Columbia Sites

Date	<u>Dnstr T. Dalles</u>			<u>Bonneville</u>			<u>Warrendale</u>			<u>Skamania</u>			<u>Camas/Wash.</u>			<u>Wauna Mill</u>								
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#						
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg					
8/7	116	117	118	24	104	105	105	23	111	112	113	23	112	113	115	23	110	111	113	23	104	105	106	23
8/8	116	117	118	24	106	107	108	24	112	112	113	24	115	117	120	24	111	113	115	24	104	105	106	24
8/9	113	116	119	24	107	107	108	24	112	113	114	24	117	117	119	24	111	113	115	24	103	104	104	24
8/10	111	112	113	20	106	107	107	23	113	114	115	23	116	118	121	23	113	115	117	24	103	104	105	24
8/11	110	112	114	24	105	106	106	23	113	114	115	23	115	118	121	23	113	114	116	24	104	104	105	24
8/12	115	116	118	24	105	106	107	23	112	113	114	23	115	117	120	23	112	114	116	24	104	105	106	24
8/13	117	118	119	24	107	108	110	23	112	113	114	23	115	117	120	23	113	115	117	24	105	106	107	24
8/14	116	118	119	24	111	111	111	24	114	114	115	24	116	117	119	24	112	114	115	24	104	105	105	24
8/15	112	115	118	24	107	108	109	23	113	114	115	24	116	118	121	24	111	113	114	24	104	104	105	24
8/16	112	113	114	24	105	106	107	23	112	113	115	23	117	119	121	23	111	113	115	24	103	104	105	24
8/17	111	112	114	24	105	105	106	23	112	114	115	23	118	119	121	23	113	114	116	24	103	104	105	24
8/18	112	114	114	24	104	104	105	23	112	114	114	23	118	119	121	23	112	114	115	24	103	104	104	24
8/19	112	114	115	24	105	105	106	23	114	115	116	23	119	120	121	23	113	115	117	24	104	105	106	24
8/20	115	116	117	16	105	105	107	15	114	115	116	15	119	120	122	15	113	114	116	16	104	104	105	16

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

Date	Yearling Chinook							Hatchery/Wild Combined			
	WTB (Coll)	IMN (Coll)	GRN (Coll)	Hatchery LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/07/98	---	---	---	---	56	6	0	0	0	0	0
08/08/98	---	---	---	---	48	22	1	0	0	0	0
08/09/98	---	---	---	---	24	28	2	0	0	0	0
08/10/98	---	---	---	---	24	52	1	0	0	0	0
08/11/98	---	---	---	---	8	39	0	0	0	0	0
08/12/98	---	---	---	---	4	24	0	0	0	0	0
08/13/98	---	---	---	---	20	20	0	0	0	0	0
08/14/98	---	---	---	---	8	21	1	0	0	0	0
08/15/98	---	---	---	---	24	14	1	0	0	0	0
08/16/98	---	---	---	---	24	7	0	0	0	0	0
08/17/98	---	---	---	---	12	9	1	1	0	0	0
08/18/98	---	---	---	---	4	5	0	0	0	0	0
08/19/98	---	---	---	---	4	6	0	0	0	0	0
08/20/98	---	---	---	---	0	3	---	0	0	0	0
Total:	0	0	0	0	260	256	7	1	0	0	0
# Days:	0	0	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	19	18	1	0	0	0	0

Date	Wild Yearling Chinook							Wild Subyearling Chinook		
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
08/07/98	---	---	---	---	4	8	1	1,068	241	75
08/08/98	---	---	---	---	8	4	3	896	448	43
08/09/98	---	---	---	---	12	12	3	500	739	39
08/10/98	---	---	---	---	16	18	1	424	776	41
08/11/98	---	---	---	---	8	8	3	432	649	38
08/12/98	---	---	---	---	8	12	1	652	667	60
08/13/98	---	---	---	---	4	1	1	448	479	98
08/14/98	---	---	---	---	8	7	0	512	544	108
08/15/98	---	---	---	---	24	3	2	616	627	175
08/16/98	---	---	---	---	16	5	1	620	361	114
08/17/98	---	---	---	---	0	4	1	472	314	87
08/18/98	---	---	---	---	20	1	1	448	233	27
08/19/98	---	---	---	---	4	1	1	396	92	33
08/20/98	---	---	---	---	0	0	---	372	79	---
Total:	0	0	0	0	132	84	19	7,856	6,249	938
# Days:	0	0	0	0	14	14	13	14	14	13
Average:	0	0	0	0	9	6	1	561	446	72

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

Date	Hatchery Subyearling Chinook							Combined Subyearling Chinook			
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/07/98	---	---	---	---	0	0	3	64	20,982	6,709	1,832
08/08/98	---	---	---	---	0	0	1	82	21,295	11,638	1,978
08/09/98	---	---	---	---	0	0	0	44	21,577	7,089	1,072
08/10/98	---	---	---	---	0	0	6	65	19,055	3,893	780
08/11/98	---	---	---	---	0	1	2	79	20,435	8,299	1,847
08/12/98	---	---	---	---	0	0	3	89	14,827	15,075	1,312
08/13/98	---	---	---	---	0	0	6	83	13,725	23,355	1,477
08/14/98	---	---	---	---	0	0	3	68	20,379	10,915	1,771
08/15/98	---	---	---	---	0	0	1	44	15,194	5,507	1,840
08/16/98	---	---	---	---	0	0	2	27	10,821	4,838	664
08/17/98	---	---	---	---	0	0	2	16	14,220	2,535	860
08/18/98	---	---	---	---	0	1	0	28	11,340	1,373	638
08/19/98	---	---	---	---	0	0	0	26	17,971	1,351	435
08/20/98	---	---	---	---	0	0	---	10	10,060	1,767	959
Total:	0	0	0	0	0	2	29	725	231,881	104,344	17,465
# Days:	0	0	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	0	0	2	52	16,563	7,453	1,248

Date	All Coho										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
08/07/98	---	---	---	---	0	10	1	0	0	0	0
08/08/98	---	---	---	---	8	10	1	0	0	0	0
08/09/98	---	---	---	---	4	4	1	0	0	0	0
08/10/98	---	---	---	---	0	10	1	0	0	0	0
08/11/98	---	---	---	---	4	5	3	0	0	0	0
08/12/98	---	---	---	---	8	8	1	0	0	0	0
08/13/98	---	---	---	---	4	8	1	0	0	0	0
08/14/98	---	---	---	---	8	8	1	0	0	0	0
08/15/98	---	---	---	---	0	9	5	0	0	0	0
08/16/98	---	---	---	---	0	7	0	0	0	0	0
08/17/98	---	---	---	---	0	1	2	1	0	0	0
08/18/98	---	---	---	---	0	5	2	0	0	0	0
08/19/98	---	---	---	---	0	5	1	0	0	0	0
08/20/98	---	---	---	---	0	3	---	0	0	0	14
Total:	0	0	0	0	36	93	20	1	0	0	14
# Days:	0	0	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	3	7	2	0	0	0	1

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)
08/07/98	---	---	---	---	20	7	8	0	0	0	0
08/08/98	---	---	---	---	20	10	3	0	0	0	0
08/09/98	---	---	---	---	16	7	6	0	0	0	0
08/10/98	---	---	---	---	8	9	6	0	0	0	0
08/11/98	---	---	---	---	4	6	2	0	0	0	0
08/12/98	---	---	---	---	0	5	2	0	0	0	0
08/13/98	---	---	---	---	0	3	3	0	0	0	0
08/14/98	---	---	---	---	4	7	0	0	0	0	0
08/15/98	---	---	---	---	4	4	5	0	0	0	0
08/16/98	---	---	---	---	0	5	10	0	0	0	0
08/17/98	---	---	---	---	8	1	5	0	0	0	0
08/18/98	---	---	---	---	0	2	1	0	0	0	0
08/19/98	---	---	---	---	0	5	1	0	0	0	0
08/20/98	---	---	---	---	0	3	---	0	0	0	0
Total:	0	0	0	0	84	74	52	0	0	0	0
# Days:	0	0	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	6	5	4	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)
08/07/98	---	---	---	---	4	0	1	0	0	0	0
08/08/98	---	---	---	---	0	0	1	0	0	0	0
08/09/98	---	---	---	---	0	1	0	0	0	0	0
08/10/98	---	---	---	---	0	1	1	0	0	0	0
08/11/98	---	---	---	---	0	1	0	0	0	0	0
08/12/98	---	---	---	---	8	1	1	0	0	0	0
08/13/98	---	---	---	---	0	0	1	0	0	0	0
08/14/98	---	---	---	---	4	1	1	0	0	0	0
08/15/98	---	---	---	---	0	0	7	0	0	0	0
08/16/98	---	---	---	---	4	1	1	0	0	0	0
08/17/98	---	---	---	---	0	1	6	1	0	0	0
08/18/98	---	---	---	---	0	2	1	2	0	0	0
08/19/98	---	---	---	---	4	0	2	0	0	0	0
08/20/98	---	---	---	---	0	0	---	0	0	0	0
Total:	0	0	0	0	24	9	23	3	0	0	0
# Days:	0	0	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	2	1	2	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)
08/07/98	---	---	---	---	0	0	0	0	0	0	15
08/08/98	---	---	---	---	0	2	0	0	0	0	15
08/09/98	---	---	---	---	0	0	0	0	0	0	0
08/10/98	---	---	---	---	0	0	0	0	0	0	19
08/11/98	---	---	---	---	0	1	0	0	0	0	0
08/12/98	---	---	---	---	0	0	0	0	0	0	0
08/13/98	---	---	---	---	0	0	1	0	0	0	14
08/14/98	---	---	---	---	0	1	0	0	0	0	0
08/15/98	---	---	---	---	0	1	0	0	0	0	0
08/16/98	---	---	---	---	0	2	0	0	0	0	0
08/17/98	---	---	---	---	0	0	1	0	0	0	0
08/18/98	---	---	---	---	0	2	1	0	0	0	0
08/19/98	---	---	---	---	0	1	0	0	0	0	0
08/20/98	---	---	---	---	0	0	---	0	0	0	0
Total:	0	0	0	0	0	10	3	0	0	0	63
# Days:	0	0	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	0	1	0	0	0	0	5

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)
08/07/98	---	---	---	---	0	0	0	0	0	0	0
08/08/98	---	---	---	---	0	0	1	0	0	26	0
08/09/98	---	---	---	---	0	1	0	1	60	0	0
08/10/98	---	---	---	---	0	1	0	0	0	0	0
08/11/98	---	---	---	---	0	0	0	0	0	0	0
08/12/98	---	---	---	---	0	0	0	0	0	0	0
08/13/98	---	---	---	---	0	0	0	0	0	0	0
08/14/98	---	---	---	---	0	0	0	0	46	0	0
08/15/98	---	---	---	---	0	0	0	0	20	0	0
08/16/98	---	---	---	---	0	0	0	0	0	0	0
08/17/98	---	---	---	---	0	2	0	0	0	0	0
08/18/98	---	---	---	---	0	0	0	0	0	0	15
08/19/98	---	---	---	---	0	0	0	0	24	0	0
08/20/98	---	---	---	---	0	1	---	0	0	0	0
Total:	0	0	0	0	0	5	1	1	150	26	15
# Days:	0	0	0	0	14	14	13	14	14	14	14
Average:	0	0	0	0	0	0	0	0	11	2	1

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 August 20, 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	10,281	743	13,288	977	14,776	1,136
TDA	25,330	503	69,365	375	44,144	1,889	15,475	1,565	20,201	1,255	18,063	2,140	2,650	323	4,013	355	13,458	2,182
JDA	22,495	418	62,253	327	34,393	1,541	16,907	1,557	20,508	1,261	15,790	1,851	1,140	220	1,732	353	3,799	395
MCN	19,456	335	57,832	404	33,819	1,722	16,082	1,380	20,934	1,417	16,965	1,827	698	191	1,122	224	2,691	285
IHR	12,420	131	41,398	75	18,178	714	5,470	299	9,196	122	4,618	417	60	5	73	7	78	7
LMN	10,627	126	38,479	146	17,565	767	4,285	297	9,153	100	4,391	442	30	1	44	3	46	5
LGS	10,218	104	37,874	108	n/a	n/a	4,299	337	9,372	65	n/a	n/a	20	2	31	1	n/a	n/a
LWG	9,881	106	33,855	81	15,110	655	4,392	322	10,709	127	4,392	430	9	0	18	1	14	1
PRD	4,147	37	6,780	8	10,704	173	13,524	547	13,107	509	13,949	581	421	73	449	78	820	85
RIS	3,270	54	6,153	52	8,534	192	10,754	908	10,960	614	11,712	998	80	44	139	62	217	57
RRH	789	53	1,856	10	2,066	52	5,680	259	5,614	694	4,258	397	0	0	25	11	31	6
WEL	6	4	942	29	1,204	50	2,260	863	2,520	145	2,500	247	0	0				

	Coho						Sockeye			Steelhead			
	1998		1997		10-Yr Avg.		1998	1997	10-Yr Avg.	10-Yr		Wild 1998	
	Adult	Jack	Adult	Jack	Adult	Jack				1998	1997		Avg.
BON	49	3	82	1	92	71	13,163	46,999	51,139	78,023	157,245	125,079	23,456
TDA	0	0	1	0	5	3	8,786	32,371	40,157	14,843	44,367	47,559	5,475
JDA	13	5	1	0	2	2	9,986	35,815	40,532	21,379	33,124	28,360	4,591
MCN	1	0	1	0	1	0	9,459	38,017	42,615	10,654	27,629	25,404	2,641
IHR	0	0	0	0	0	0	0	15	10	6,621	13,693	12,505	1,358
LMN	0	0	0	0	0	0	2	16	11	4,928	11,259	10,597	1,058
LGS	0	0	0	0	n/a	n/a	4	9	n/a	3,786	7,982	n/a	1,077
LWG	0	0	0	0	0	0	3	9	8	8,746	8,790	9,010	1,388
PRD	2	1	0	0	1	0	11,585	45,355	47,352	1,315	2,456	2,998	0
RIS	9	0	5	0	3	0	9,276	41,234	41,235	949	1,725	2,284	0
RRH	0	0	0	0	1	0	5,613	30,216	21,304	814	1,170	1,371	0
WEL	0	3	2	1	0	0	3,623	25,281	20,271	367	488	920	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 August 19.

1998 totals at LGS are based on video counts accumulated through August 18.

Adult count records at LGS have been maintained since 1993.

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

* - 1998 John Day Steelhead counts will be revised

Transportation Summary Report

Two-Week Transportation Summary from 08/07/98 to 08/20/98

	Yearling Subyearling		Steelhead	Coho	Sockeye	Total
	Chinook	Chinook				
LOWER GRANITE DAM						
Collected	392	7,856	108	36	0	8,392
Bypassed	0	21	0	0	0	21
Trucked	430	7,861	140	38	0	8,469
Barged	0	0	0	0	0	0
Total Transported	430	7,861	140	38	0	8,469
LITTLE GOOSE DAM						
Collected	340	6,227	83	93	15	6,758
Bypassed	0	0	0	0	0	0
Trucked	337	6,309	87	90	12	6,835
Barged	0	0	0	0	0	0
Total Transported	337	6,309	87	90	12	6,835
LOWER MONUMENTAL DAM						
Collected	26	967	75	20	4	1,092
Bypassed	0	0	58	0	0	58
Trucked	24	1,023	15	20	4	1,086
Barged	0	0	0	0	0	0
Total Transported	24	1,023	15	20	4	1,086
M McNARY DAM						
Collected	0	219,241	0	0	140	219,381
Bypassed	0	0	0	0	0	0
Trucked	0	179,574	0	0	139	179,713
Barged	0	36,786	0	0	0	36,786
Total Transported	0	216,360	0	0	139	216,499
PROJECT TOTALS						
Collected	758	234,291	266	149	159	235,623
Bypassed	0	21	58	0	0	79
Trucked	791	194,767	242	148	155	196,103
Barged	0	36,786	0	0	0	36,786
Total Transported	791	231,553	242	148	155	232,889

Transportation Summary Report

Cumulative Transportation Summary through 08/20/98

	Yearling Subyearling					
	Chinook	Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	1,603,751	72,113	5,085,542	155,408	49,620	6,966,434
Bypassed	108,383	457	125,475	1,426	0	235,741
Trucked	41,064	61,702	67,837	6,346	620	177,569
Barged	1,449,633	8,532	4,888,200	147,145	48,911	6,542,421
Total Transported	1,490,697	70,234	4,956,037	153,491	49,531	6,719,990
LITTLE GOOSE DAM						
Collected	899,922	50,635	1,505,135	51,155	17,702	2,524,549
Bypassed	0	0	0	0	0	0
Trucked	13,654	46,963	9,996	3,489	836	74,938
Barged	874,575	1,663	1,490,712	47,129	16,696	2,430,775
Total Transported	888,229	48,626	1,500,708	50,618	17,532	2,505,713
LOWER MONUMENTAL DAM						
Collected	492,722	22,001	949,233	29,595	14,886	1,508,437
Bypassed	4,290	1,133	12,652	1,031	639	19,745
Trucked	1,329	16,624	4,407	465	265	23,090
Barged	485,912	3,913	931,488	28,063	13,963	1,463,339
Total Transported	487,241	20,537	935,895	28,528	14,228	1,486,429
M McNARY DAM						
Collected	1,044,077	8,214,692	327,356	125,972	512,230	10,224,327
Bypassed	1,004,308	163,229	316,015	109,189	492,648	2,085,389
Trucked	7,035	250,542	4,888	4,978	4,254	271,697
Barged	28,873	7,624,549	6,038	11,552	13,065	7,684,077
Total Transported	35,908	7,875,091	10,926	16,530	17,319	7,955,774
PROJECT TOTALS						
Collected	4,040,472	8,359,441	7,867,266	362,130	594,438	21,223,747
Bypassed	1,116,981	164,819	454,142	111,646	493,287	2,340,875
Trucked	63,082	375,831	87,128	15,278	5,975	547,294
Barged	2,838,993	7,638,657	7,316,438	233,889	92,635	18,120,612
Total Transported	2,902,075	8,014,488	7,403,566	249,167	98,610	18,667,906