Fish Passage Center

Weekly Report #98 - 19

July 24, 1998

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SUMMARY OF EVENTS:

Water Supply. Summer weather continues. Peak maximum temperatures were reaching 5 to 16 degrees above normal with heating focused particularly in Southeastern Idaho. Some parts of the Upper Columbia basin enjoyed cooler northwesternly flow from Canada.

System Storage. US reservoirs commenced BiOp required summer augmentation drafting for endangered Snake River salmon. The Canadian reservoirs continue to refill by the end of July according to the Treaty Detailed Operating Plan.
A summary of actual elevations on July 23, 1998 is shown in the following table:

Reservoir	Actual Elev. [ft] 7/23/98	Max. Pool [ft]
Mica	2459.70	2475.0
Arrow	1437.90	1444.0
Duncan	1887.40	1892.0
Libby	2457.91	2459.0
Hungry Horse	3341.67	3560.0
Grand Coulee	1285.10	1290.0
Brownlee	2062.69*	2077.0
Dworshak	1580.32	1600.0

as of July 22, 1998

Canadian reservoirs:

- Mica continues to refill, releasing Treaty storage at a rate of 10 kcfs. The actual outflow is projected to be between 10-30 kcfs depending on the dynamics of the Non-Treaty releases. The Non-Treaty US account as of July 23 was 1.99 MAF and BC Hydro was 1.91 MAF. It is expected that BPA will release the first part of the Non-Treaty water stored during May-June period of about 324 KAF by the end of July. BC Hydro is also planing to release according to the NTSA the volume of 324 KAF by the end of July. BPA will have, approximately, an additional 300 KAF from Non Treaty storage to release during August. BC Hydro doesn't have any further obligations to release additional Non Treaty storage during August.
- Arrow Treaty storage is full. The Treaty releases are about 33 kcfs. Actual releases are projected to be in the range of 33 kcfs to 53 kcfs during next week.
- Duncan continues to refill, releasing 0.1 kcfs. It is projected that the reservoir will be full by the end of July.

US reservoirs:

- Libby started drafting for summer augmentation flows at a rate of 12-14.6 kcfs. It will continue with drafting at a rate of approximately 12 kcfs. It is expected that agreement on the Libby/Arrow swap will be reached any day, resulting in an end of August elevation of 2447 in stead of 2439.
- Hungry Horse continues summer augmentation operations with outflows of 7.2 kcfs while meeting the flow level of 3.5 kcfs at Columbia Falls. The project will draft to elevation of 3540 ft by the end of August.
- Grand Coulee will operate to support McNary flows of minimum 190 kcfs for the next week. It is expected that elevation on August 2 will be 1283 ft.
- Brownlee continues augmentation drafting with out flows of 19-20 limited to one foot per day draft rate for recreation concerns.
- Dworshak will continue with outflow of 20 kcfs which has been started on July 21. The project will operate to meet the weekly flow objective of 52 kcfs at Lower Granite. The project releases will be managed to

provide water temperatures of 48° F for maintaning steelhead production in the hatchery downstream of the dam.

Upper Snake reservoirs:

It is the high irrigation season. The system continues to be operated primarily for irrigation demands. Temperatures cotinue to be high and irrigation withdrawals are increasing. Surface runoff continues to decrease.

Jackson Lake is currently passing inflow of 2.5 kcfs.

Palisades initiated drafting for Upper Snake diversion, with irrigation withdrawal at a rate of 13.5 kcfs.

American Falls continues drafting to provide irrigation diversion flow downstream at Minidoka. Current outflow is 13.04 kcfs, about 9.5 kcfs higher than inflow.

Millner flow, at the lowest point of the Upper Snake system, is at constant rate of 1.5 kcfs since July 7. Irrigation withdrawal upstream of Minidoka increased to a rate of 9.1 kcfs. Irrigation withdrawal at Upper Snake diversion, upstream from Blackfoot also increased to 10 kcfs.

Boise River Basin:

Anderson and Arrowrock began drafting for irrigation withdrawals. Current reservoir capacities are 96% of full and 87% of full. The flow at Glenwood Bridge remained about 1.3 kcfs.

System Streamflow. The weekly average flows for the Snake River continue to recede. Mid Columbia flows remained approximately at the same level as last week. Flows at McNary continue to be below summer target flows of 200 kcfs. The summary of average weekly flows for run of the river projects during the July 10-July 23 period is shown in the following Table:

Project	July 17-23	July 10-16
Priest Rapids	138.3 kcfs	132.4 kcfs
McNary	190.5 kcfs	198.3 kcfs
Lower Granite	54.8 kcfs	63.1 kcfs
Bonneville	197.4 kcfs	207.7 kcfs

Spill. Spill above hydraulic capacity continues at Dworshak Dam as flow augmentation is implemented. The summer surface bypass test at Lower Granite Dam ended and the spill associated with the test ended. In the Lower Snake River the summer spill program is being implemented at Ice Harbor Dam. Spill averaged 47.9 kcfs at Ice Harbor Dam over the past week.

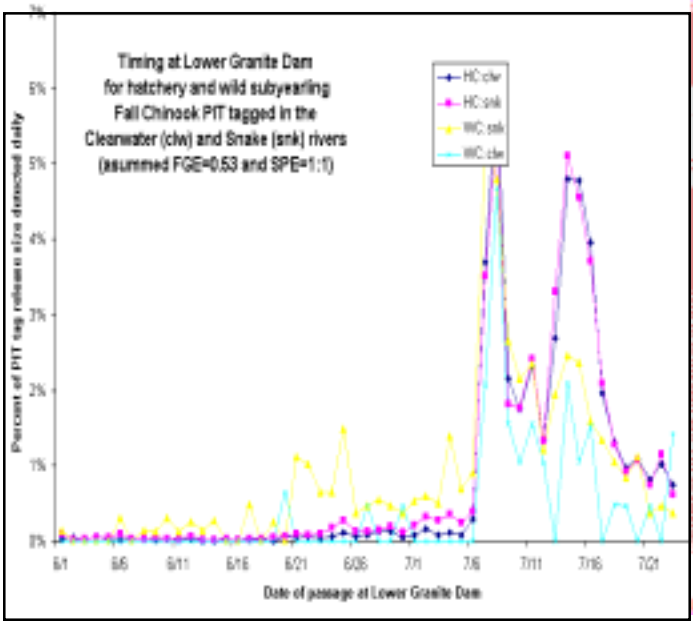
The lower Columbia River summer spill program began on July 1, 1998. As flows decreased the amount of spill occurring at McNary Dam in excess of hydraulic capacity decreased considerably. Spill averaged 27.8 kcfs at McNary Dam, 49.8 kcfs at John Day Dam, 89 kcfs at The Dalles Dam, and 89.7 kcfs at Bonneville Dam over the past week.

The summer spill program is being implemented at the Mid Columbia projects.

Total Dissolved Gas Supersaturation and gas Bubble Trauma Monitoring

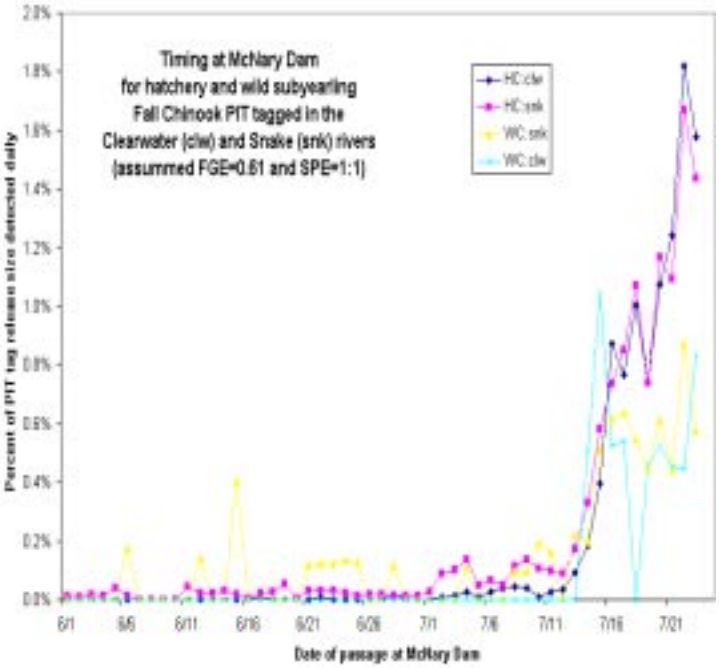
TDGS levels have been at, or below, the gas waivers at all monitoring sites. Gas bubble trauma monitoring has ended for the season at the Snake River monitoring sites. Sampling will continue through the summer at Rock Island, McNary, John Day and Bonneville dams. No juvenile salmon have been detected with signs over the past week.

Smolt Monitoring. *Snake River Drainage.* Wild subyearling chinook passage indices at Lower Granite Dam dropped from above 2,000 fish to an average of 1,152 per day during the last five days of this week. Both hatchery and wild PIT tagged fall chinook detections at Lower Granite Dam have decreased since mid-July.



This week's wild subyearling chinook passage indices have decreased more rapidly at Lower Monumental Dam than at Little Goose Dam.

Columbia River Drainage. In the Mid-Columbia River, this week's subyearling chinook passage indices at Rock Island Dam are slightly higher than last week's level. In the lower Columbia River, subyearling chinook passage indices at McNary dropped from last week's average of 300,000 fish to below 100,000 fish in three of the four last days of this week. While in the lower Columbia River at John Day and Bonneville dams, there was little change this week in passage indices of subyearling chinook from last week's level. The relative magnitude of Snake River fall chinook passage at McNary Dam has changed little from last week.



Adult Fish Passage. At Bonneville Dam, the number of adult summer chinook ranged from 324 to 207 through the week of July 17 through July 23. The cumulative count at Bonneville Dam through July 23 was 19,767, about 75% of the 1997 and 101% of the 10-year average. The count of summer chinook at McNary Dam was 14,895, about 77% and 102% of the respective 1997 and 10-year average. The turnoff into the Snake River (Ice Harbor Dam count) totaled 5,395, 60% and 121% of the 1997 and 10-year average at the project. Daily counts of adult summer chinook decreased to less than 20 fish per day by week's end at the Snake River projects. The cumulative count of summer chinook at Lower Granite Dam was 4,273 through July 23. The cumulative count of summer chinook at Priest Rapids Dam was 11,491 and this total was more than the 1997 and 10-year average through July 23. Of the approximate 8,500 that have passed Rock Island Dam, about 45% have continued past Rocky Reach Dam.

The steelhead run at Bonneville Dam remained at nearly 1,100 to 1,200 fish per day for this passage week at Bonneville Dam. The season count at Bonneville Dam from March 15 through July 23 was 31,587, and remains below either the 1997 or the 10-year average to date. Of the steelhead above Bonneville Dam, about

11,000 have passed The Dalles Dam. As normally occurs, a portion of the fish will begin seeking cooler water in some of the tributary streams because of the high water temperatures that currently exist in the mainstem Columbia River. Steelhead are still continuing to migrate upstream, with the McNary count through July 23 at 8,204. The Ice Harbor Dam count was 4,499 to date, with the weekly daily passage counts normally between 50 and 100. The number of steelhead at Priest Rapids has been increasing, with the high daily count occurring on July 23 at 46, and the season total at 410.

Daily sockeye counts at Bonneville Dam decreased over the week to less than 50 per day by week end, with the total to date of 12,751. The run this year is approximately 28% and 25% of the 1997 and 10-year average count, respectively through July 23. The sockeye passage at the Mid-Columbia projects remains at relatively high levels, with the cumulative count for the season at Priest Rapids Dam now 10,961. When compared to the 1997 and 10-year average, the 1998 sockeye run is way below the norm. So far it appears that the number of sockeye destined for Lake Osoyoos will exceed those migrating to Lake Wenatchee; however, this could change through the next few weeks.

The following information was received from the WDFW fish count supervisor concerning passage of sockeye into the Snake River at Lower Granite Dam:

- On 7/5, one sockeye was observed on night video.
- On 7/17 & 7/18, one sockeye was observed each day.
- On 7/22, one sockeye was observed during the day shift, but it has not been confirmed via the video tape camera.

The four fish were all within the 19 to 22 inch range, and none of the sockeye were adipose clipped.

Hatchery Releases. Columbia Basin hatcheries completed release of subyearling summer and fall chinook for the year. Spring Creek Hatchery personnel will release 500,000 spring chinook into the Big White Salmon River in early to mid August.

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
07/10/98	106.0	0.1	106.2	0.0	120.0	12.4	127.3	14.5	128.1	30.9	124.2	16.6	133.3	40.6
07/11/98	109.3	0.1	102.9	0.0	99.7	11.3	100.3	9.6	98.0	30.9	92.8	9.7	95.8	29.1
07/12/98	89.9	0.1	97.3	0.0	107.2	11.2	113.8	0.2	115.4	31.0	119.6	12.3	129.3	40.5
07/13/98	121.2	0.1	123.2	0.0	126.2	12.4	128.9	0.0	126.3	31.0	124.3	12.6	132.3	39.6
07/14/98	129.7	0.1	130.7	0.0	138.5	12.6	140.5	8.4	137.6	25.8	128.8	14.3	140.3	42.2
07/15/98	134.4	0.1	133.6	0.0	138.9	12.4	141.1	13.8	141.7	20.4	143.1	21.5	157.6	50.1
07/16/98	144.8	0.1	145.8	0.0	150.4	12.1	150.4	18.6	147.2	20.4	123.8	20.9	138.2	42.2
07/17/98	141.7	0.1	145.4	0.0	151.4	12.1	156.1	22.7	155.1	20.4	155.8	25.4	168.3	59.9
07/18/98	111.6	0.1	115.5	0.0	122.7	10.7	131.4	12.7	132.8	20.4	125.1	18.4	137.2	48.3
07/19/98	112.8	0.1	112.7	0.0	115.6	9.6	117.6	0.0	117.2	20.4	99.7	14.8	121.6	42.1
07/20/98	119.8	0.1	124.2	0.0	130.2	10.5	137.4	0.0	136.2	20.3	121.1	19.1	137.0	48.2
07/21/98	132.6	0.2	133.5	0.0	137.2	12.1	137.9	4.3	134.4	20.4	120.8	17.5	136.2	48.0
07/22/98	125.8	0.1	128.4	0.0	130.7	10.6	134.2	15.0	133.1	20.0	127.4	19.2	140.7	48.4
07/23/98	121.7	0.1	120.9	0.0	120.7	9.8	124.7	13.9	122.9	21.4	115.0	16.8	127.1	42.6

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
07/10/98	7.0	0.0	---	---	62.8	5.7	60.7	0.0	63.0	0.0	66.7	54.1
07/11/98	9.1	0.0	---	---	65.9	5.8	66.0	0.0	68.3	0.0	69.0	53.8
07/12/98	9.4	0.0	---	---	66.8	5.8	67.3	0.0	73.3	0.0	76.6	59.9
07/13/98	12.9	3.4	---	---	61.6	5.8	60.6	0.0	63.8	0.0	65.9	49.9
07/14/98	13.0	3.6	---	---	64.0	5.8	62.7	0.0	66.3	0.0	69.1	49.5
07/15/98	13.0	3.6	---	---	62.1	5.8	60.7	0.0	65.4	0.0	69.9	51.4
07/16/98	14.0	4.5	---	---	58.3	3.8	58.9	0.0	61.9	0.0	64.1	49.0
07/17/98	14.0	4.5	---	---	55.9	5.6	54.9	0.0	58.1	0.0	60.2	41.8
07/18/98	14.0	4.5	---	---	54.9	1.6	55.4	0.0	57.5	0.0	59.2	48.9
07/19/98	15.5	6.0	---	---	54.7	0.0	53.9	0.0	56.1	0.0	59.3	52.7
07/20/98	17.1	7.5	---	---	55.7	0.0	56.4	0.0	59.6	0.0	64.0	51.4
07/21/98	19.9	10.2	---	---	53.7	0.0	53.8	0.0	57.8	0.0	60.7	47.5
07/22/98	19.8	10.2	---	---	54.2	0.0	52.3	0.0	53.8	0.0	53.8	40.6
07/23/98	19.8	10.2	---	---	54.7	0.0	56.1	0.0	61.8	0.0	66.7	52.3

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
07/10/98	210.4	34.6	205.6	50.6	203.5	72.4	209.2	91.9	66.4	41.7
07/11/98	172.3	0.0	173.4	45.0	169.2	51.8	184.2	92.4	52.1	30.5
07/12/98	176.5	15.6	185.9	50.7	177.6	98.5	184.0	92.5	49.7	32.6
07/13/98	207.5	54.8	195.3	53.6	206.3	131.3	214.4	92.8	67.8	44.6
07/14/98	204.8	39.0	210.6	53.9	205.9	70.6	220.8	91.8	60.3	59.5
07/15/98	214.5	45.4	217.5	54.3	208.4	121.8	217.5	92.3	65.4	50.6
07/16/98	202.4	43.5	213.9	59.7	214.0	77.9	223.9	91.4	72.6	50.7
07/17/98	197.3	47.2	193.1	47.6	186.3	106.9	198.2	89.5	62.7	36.8
07/18/98	200.9	51.6	199.9	54.1	189.4	69.1	199.1	89.9	65.0	35.0
07/19/98	171.8	17.6	171.5	46.0	171.1	97.3	190.0	89.8	57.2	32.8
07/20/98	209.9	43.4	211.2	53.3	207.5	72.9	213.9	89.3	77.7	37.7
07/21/98	192.6	18.4	195.9	50.7	184.1	107.3	189.7	89.8	59.5	31.2
07/22/98	187.0	13.8	203.7	51.6	198.4	71.3	200.0	90.3	80.8	19.7
07/23/98	174.3	2.8	175.3	45.5	177.9	98.0	190.8	89.5	40.2	51.9

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

								Number of Fish with Fin GBT Listed by Highest Rank				Fish with L. Line GBT	
Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Rank 1	Rank 2	Rank 3	Rank 4	Num Fish	Avg. Rank
McNary Dam													
	07/14/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/16/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/18/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/21/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/23/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
John Day Dam													
	07/14/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/15/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/18/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/21/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/23/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Bonneville Dam													
	07/14/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/16/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/18/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/21/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/23/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Rock Island Dam													
	07/15/98	SubYrlng Chinook	100	2	2	2.00%	0.00%	2	0	0	0	0	0
	07/17/98	SubYrlng Chinook	100	2	1	1.00%	0.00%	0	1	0	0	1	1
	07/20/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/22/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0

Hatchery Release Summary
Schedule for Next Two Weeks
From 07/10/98 - 07/23/98

Hatchery	Species	FPC LotID	Number Released	Release Dates Begin	Release Dates End	Release Site	River Name
				USFWS			
Spring Creek	SP Chinook	98058	500,000	8/6/98	8/6/98	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 High[2]

Total Dissolved Gas Saturation Data at Upper Columbia Sites

	Can. Boundary				Grand Coulee				Tlwtr G. Coulee				Chief Joseph				Wells				Rocky Reach			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
7/10	---	---	---	0	114	114	114	24	---	---	---	0	113	113	114	24	111	111	112	14	112	112	114	24
7/11	---	---	---	0	114	114	114	24	---	---	---	0	113	113	113	24	110	110	110	23	111	112	112	24
7/12	---	---	---	0	114	114	114	24	---	---	---	0	112	113	113	23	---	---	---	0	110	111	111	23
7/13	---	---	---	0	114	115	115	24	---	---	---	0	112	113	113	23	110	110	110	22	109	110	110	23
7/14	---	---	---	0	114	114	115	22	---	---	---	0	113	113	113	23	110	110	111	16	109	110	110	23
7/15	---	---	---	0	114	114	115	24	111	111	112	7	112	113	113	23	110	110	110	15	110	111	112	21
7/16	124	124	125	12	114	114	115	24	111	112	113	24	113	113	114	23	110	111	111	21	111	112	112	21
7/17	120	121	123	24	114	115	115	24	112	112	114	24	113	114	114	24	111	112	112	19	113	114	115	22
7/18	120	121	123	24	114	114	115	24	112	113	115	24	114	114	114	24	112	112	112	24	113	114	115	24
7/19	122	123	125	24	114	115	115	24	113	113	115	24	114	114	115	23	111	112	112	23	113	113	114	23
7/20	124	125	127	24	115	115	115	24	112	113	114	24	113	114	114	23	111	111	112	23	112	113	113	23
7/21	124	127	133	24	114	115	115	24	112	113	114	24	113	114	114	20	111	112	112	22	111	111	112	23
7/22	121	123	129	24	115	115	116	24	113	114	115	24	114	115	115	23	112	112	113	22	111	112	113	20
7/23	118	118	119	24	115	115	116	24	114	115	116	24	114	115	115	23	113	113	114	16	111	112	113	23

Total Dissolved Gas Saturation Data at Mid Columbia Sites

	Tlwtr. Rocky R.				Rock Island				Tlwtr. Rock Island				Wanapum				Tlwtr Wanapum				Priest Rapids			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
7/10	114	115	115	24	112	113	114	24	120	120	121	24	---	---	---	0	---	---	---	0	---	---	---	0
7/11	113	114	114	24	110	111	112	24	119	120	120	24	---	---	---	0	---	---	---	0	---	---	---	0
7/12	112	112	113	23	110	111	112	23	119	119	120	23	---	---	---	0	---	---	---	0	---	---	---	0
7/13	111	111	112	23	109	110	111	23	118	119	120	23	---	---	---	0	---	---	---	0	---	---	---	0
7/14	111	111	113	23	109	110	110	23	116	118	119	23	---	---	---	0	---	---	---	0	---	---	---	0
7/15	112	113	116	19	111	112	112	19	116	117	118	19	---	---	---	0	---	---	---	0	---	---	---	0
7/16	113	113	114	21	111	112	113	21	117	117	117	21	---	---	---	0	---	---	---	0	---	---	---	0
7/17	114	114	116	22	113	114	115	23	118	118	119	23	---	---	---	0	---	---	---	0	---	---	---	0
7/18	114	114	115	24	112	113	114	24	118	119	119	24	---	---	---	0	---	---	---	0	---	---	---	0
7/19	113	113	114	23	111	112	114	23	117	118	119	23	---	---	---	0	---	---	---	0	---	---	---	0
7/20	112	112	113	23	111	111	111	23	116	117	117	23	---	---	---	0	---	---	---	0	---	---	---	0
7/21	112	113	114	23	110	112	113	23	117	117	118	23	---	---	---	0	---	---	---	0	---	---	---	0
7/22	114	114	114	19	112	113	114	19	119	120	121	19	---	---	---	0	---	---	---	0	---	---	---	0
7/23	114	114	115	23	112	113	114	23	122	122	124	23	---	---	---	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			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
7/10	---	---	---	0	102	103	104	19	100	101	101	24	100	101	103	19	105	105	107	24	105	105	105	24
7/11	---	---	---	0	---	---	---	0	100	101	101	24	---	---	---	0	102	103	103	24	104	104	105	24
7/12	---	---	---	0	100	100	100	24	---	---	---	0	---	---	---	0	101	101	103	24	103	103	104	24
7/13	---	---	---	0	109	110	110	24	107	108	109	23	103	106	107	24	100	101	101	24	103	103	104	24
7/14	---	---	---	0	110	110	110	24	108	109	109	24	105	107	109	23	101	102	103	24	103	104	104	24
7/15	---	---	---	0	110	110	110	24	108	109	110	24	106	108	109	24	101	101	103	24	103	104	104	24
7/16	---	---	---	0	112	112	113	23	110	111	111	23	106	109	110	24	103	104	110	24	103	104	105	24
7/17	---	---	---	0	110	111	112	24	100	101	101	24	107	109	111	24	108	110	111	24	105	106	107	24
7/18	---	---	---	0	110	111	112	24	100	101	101	24	107	109	110	24	105	106	107	24	104	105	105	18
7/19	---	---	---	0	114	116	117	24	112	114	115	24	107	109	110	24	105	106	109	24	---	---	---	0
7/20	---	---	---	0	116	116	116	24	114	115	115	24	108	110	111	24	107	108	110	24	---	---	---	0
7/21	---	---	---	0	117	118	118	24	116	117	117	24	109	111	112	24	108	110	120	24	105	105	105	12
7/22	---	---	---	0	118	118	118	24	116	117	118	24	109	111	112	24	107	108	110	24	104	104	104	24
7/23	---	---	---	0	118	118	119	24	116	117	117	24	109	110	111	24	107	108	109	24	104	105	105	24

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			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
7/10	106	107	112	24	103	103	103	24	105	106	107	24	103	104	105	24	105	105	106	24	117	118	119	24
7/11	102	102	104	24	102	102	102	24	103	103	103	13	102	102	103	13	103	103	104	17	117	117	118	17
7/12	102	102	102	24	101	101	102	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
7/13	102	102	102	24	101	101	102	24	102	102	102	24	101	102	103	24	102	102	103	24	117	117	118	24
7/14	102	102	102	24	101	101	102	24	101	102	102	24	101	102	103	24	104	105	105	24	116	117	119	24
7/15	102	102	103	24	101	101	101	24	102	102	103	24	101	101	102	24	107	107	108	24	117	117	119	24
7/16	103	105	110	24	100	100	101	24	102	103	105	24	101	102	103	24	109	110	111	24	116	117	118	24
7/17	102	103	105	24	101	101	102	24	103	104	106	24	102	103	103	24	113	114	115	24	116	117	117	24
7/18	101	102	102	24	101	101	101	24	101	101	102	9	101	101	101	9	116	117	117	24	116	117	118	24
7/19	102	102	102	24	101	101	102	24	---	---	---	0	---	---	---	0	119	119	120	24	116	117	118	24
7/20	102	103	104	24	101	102	102	24	101	101	102	24	101	101	102	24	108	116	121	24	116	117	119	24
7/21	104	105	108	24	102	102	103	24	102	103	105	24	101	102	103	24	101	101	102	24	116	117	118	24
7/22	106	107	109	24	102	102	103	24	103	103	104	24	102	103	104	24	101	101	102	16	116	116	118	16
7/23	106	107	110	23	102	103	103	23	103	104	105	24	102	103	103	24	101	101	102	24	117	118	118	24

Total Dissolved Gas Saturation Data at Lower Columbia Sites

	McNary-Oregon				McNary-Wash.				Tlwtr McNary				John Day				Tlwtr John Day				The Dalles			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
7/10	113	115	120	24	112	113	115	24	114	115	115	24	106	106	107	24	112	118	120	24	107	109	110	24
7/11	110	110	111	24	110	110	111	24	110	110	112	24	105	105	106	24	111	117	120	24	105	107	108	24
7/12	109	109	110	24	108	108	108	24	111	112	113	24	104	104	105	23	110	117	119	24	106	108	112	23
7/13	108	110	111	24	107	107	107	24	113	114	115	24	104	104	104	23	111	117	120	24	107	110	112	23
7/14	109	111	113	24	107	108	109	24	112	114	114	24	104	104	104	23	111	117	119	24	108	110	113	23
7/15	111	114	116	24	108	109	109	24	112	114	114	24	104	104	104	23	110	117	120	24	108	111	114	23
7/16	109	111	116	24	109	110	114	24	113	114	114	24	103	104	107	23	110	118	120	24	108	111	114	23
7/17	112	115	118	24	111	111	112	24	113	113	114	24	104	104	104	24	110	117	118	24	107	109	111	23
7/18	112	114	116	24	112	112	113	24	114	114	115	24	105	105	106	24	111	117	119	24	106	109	112	24
7/19	110	111	112	24	110	111	112	24	111	113	113	24	105	105	105	23	110	117	119	24	105	108	110	23
7/20	110	112	115	23	109	111	113	23	114	115	119	24	105	105	108	23	111	117	119	24	107	110	113	23
7/21	110	111	113	24	110	112	113	24	112	113	114	24	106	107	109	21	110	114	120	20	107	110	114	23
7/22	110	113	117	24	112	113	116	24	113	113	114	24	106	107	107	23	112	118	121	23	109	112	115	23
7/23	113	115	117	24	110	111	112	24	111	111	113	24	105	106	107	23	112	118	119	24	106	107	111	19

Total Dissolved Gas Saturation Data at Lower Columbia Sites

	Dnstr T. Dalles				Bonneville				Warrendale				Skamania				Camas\Wash.				Wauna Mill			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
7/10	109	109	110	24	100	101	101	24	114	115	117	24	114	117	121	24	120	126	132	24	108	108	109	24
7/11	108	108	109	24	100	101	101	24	114	115	117	24	115	117	121	24	112	115	117	24	106	107	107	24
7/12	106	107	107	23	100	101	101	24	114	115	117	23	114	117	121	23	113	115	117	24	107	107	107	24
7/13	107	108	110	23	100	101	101	24	113	114	115	23	114	116	120	23	113	116	118	24	107	108	108	24
7/14	112	113	114	23	100	101	101	24	116	116	118	23	119	119	121	7	113	116	118	24	108	108	109	24
7/15	112	113	114	23	100	101	101	24	116	117	118	23	115	115	115	8	115	117	120	24	108	108	108	24
7/16	111	113	113	23	100	101	101	24	115	116	116	23	116	118	120	23	115	117	119	24	108	109	110	24
7/17	114	115	116	24	100	101	101	24	117	117	119	24	117	119	121	24	114	116	118	24	109	110	110	24
7/18	109	110	110	24	100	101	101	24	114	115	116	24	115	117	120	24	114	115	117	24	108	109	109	24
7/19	108	109	110	23	100	101	101	24	114	114	116	23	115	117	120	23	112	114	116	24	108	108	108	24
7/20	107	108	108	23	100	101	101	24	113	114	116	23	114	117	120	23	113	116	118	24	108	108	109	24
7/21	110	112	113	23	100	101	101	24	115	115	116	22	116	118	120	21	113	116	119	24	107	108	109	24
7/22	111	111	112	22	100	101	101	24	115	116	118	23	116	119	122	23	115	117	119	24	107	107	108	24
7/23	110	110	111	23	100	101	101	24	115	115	116	19	115	116	119	23	112	114	115	24	106	106	106	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)
07/10/98	---	---	---	---	88	215	8	4	107	0	0
07/11/98	---	---	---	---	79	391	4	3	120	0	0
07/12/98	---	---	---	---	72	181	8	7	106	68	0
07/13/98	---	---	---	---	40	80	8	4	38	0	0
07/14/98	---	---	---	---	57	58	8	20	69	0	14
07/15/98	---	---	---	---	39	25	0	21	1	202	0
07/16/98	---	---	---	---	49	40	12	24	39	0	0
07/17/98	---	---	---	---	51	175	4	6	77	0	0
07/18/98	---	---	---	---	22	50	4	11	3	0	0
07/19/98	---	---	---	---	48	30	4	20	134	0	13
07/20/98	---	---	---	---	28	30	8	1	23	103	0
07/21/98	---	---	---	---	50	10	12	5	29	0	12
07/22/98	---	---	---	---	40	35	0	3	33	0	0
07/23/98	---	---	---	---	68	25	0	17	74	135	0
Total:	0	0	0	0	731	1,345	80	146	853	508	39
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	52	96	6	10	61	36	3

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
07/10/98	---	---	---	---	22	785	0
07/11/98	---	---	---	---	20	2,117	12
07/12/98	---	---	---	---	13	1,500	28
07/13/98	---	---	---	---	9	1,040	8
07/14/98	---	---	---	---	4	306	12
07/15/98	---	---	---	---	4	255	8
07/16/98	---	---	---	---	13	175	0
07/17/98	---	---	---	---	13	171	4
07/18/98	---	---	---	---	49	180	8
07/19/98	---	---	---	---	12	250	12
07/20/98	---	---	---	---	28	175	0
07/21/98	---	---	---	---	33	125	8
07/22/98	---	---	---	---	24	60	4
07/23/98	---	---	---	---	36	36	0
Total:	0	0	0	0	280	7,175	104
# Days:	0	0	0	0	14	14	14
Average:	0	0	0	0	20	513	7

Wild Subyearling Chinook

Date	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
07/10/98	2,849	2,643	1,224
07/11/98	2,082	5,109	824
07/12/98	2,221	2,173	696
07/13/98	857	1,794	784
07/14/98	2,249	1,148	888
07/15/98	2,873	864	980
07/16/98	2,536	1,215	864
07/17/98	2,439	2,647	760
07/18/98	1,841	2,953	580
07/19/98	1,224	1,564	516
07/20/98	1,212	1,374	356
07/21/98	1,118	1,022	392
07/22/98	1,164	1,420	260
07/23/98	1,040	1,565	324
Total:	25,705	27,491	9,448
# Days:	14	14	14
Average:	1,836	1,964	675

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)
07/10/98	---	---	---	---	0	16	24	146	356,429	12,929	8,253
07/11/98	---	---	---	---	0	21	0	172	437,808	22,731	3,574
07/12/98	---	---	---	---	0	21	8	122	154,541	21,955	8,019
07/13/98	---	---	---	---	0	20	24	200	351,837	21,320	2,757
07/14/98	---	---	---	---	0	28	4	216	358,718	19,072	2,667
07/15/98	---	---	---	---	0	10	8	275	251,082	33,453	6,192
07/16/98	---	---	---	---	0	0	12	260	184,273	40,396	4,022
07/17/98	---	---	---	---	0	16	12	382	142,569	36,214	5,154
07/18/98	---	---	---	---	0	20	8	396	143,713	30,472	11,850
07/19/98	---	---	---	---	0	21	12	387	107,036	25,315	3,779
07/20/98	---	---	---	---	0	10	12	330	66,833	19,409	10,401
07/21/98	---	---	---	---	0	11	8	420	131,292	21,616	2,706
07/22/98	---	---	---	---	0	5	28	277	79,471	37,853	5,744
07/23/98	---	---	---	---	0	5	4	185	64,804	32,477	5,529
Total:	0	0	0	0	0	204	164	3,768	2,830,406	375,212	80,647
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	0	15	12	269	202,172	26,801	5,761

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)
07/10/98	---	---	---	---	773	175	8	0	35	0	60
07/11/98	---	---	---	---	323	240	4	0	119	0	148
07/12/98	---	---	---	---	269	200	8	1	0	0	141
07/13/98	---	---	---	---	123	230	16	1	0	0	0
07/14/98	---	---	---	---	172	140	12	1	0	0	0
07/15/98	---	---	---	---	171	100	12	0	0	0	102
07/16/98	---	---	---	---	257	135	0	0	0	0	0
07/17/98	---	---	---	---	137	87	12	7	77	0	30
07/18/98	---	---	---	---	98	200	8	4	0	0	0
07/19/98	---	---	---	---	96	170	8	0	0	0	13
07/20/98	---	---	---	---	64	175	8	4	12	0	263
07/21/98	---	---	---	---	54	90	4	1	8	0	0
07/22/98	---	---	---	---	44	95	8	0	22	0	94
07/23/98	---	---	---	---	28	80	12	0	11	0	0
Total:	0	0	0	0	2,609	2,117	120	19	284	0	851
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	186	151	9	1	20	0	61

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)
07/10/98	---	---	---	---	442	556	164	0	35	0	0
07/11/98	---	---	---	---	257	645	72	1	0	0	0
07/12/98	---	---	---	---	342	221	28	0	100	0	0
07/13/98	---	---	---	---	119	270	68	0	1	71	0
07/14/98	---	---	---	---	185	135	120	0	0	0	0
07/15/98	---	---	---	---	145	85	100	0	0	0	0
07/16/98	---	---	---	---	173	80	80	0	0	0	0
07/17/98	---	---	---	---	90	50	56	0	0	0	0
07/18/98	---	---	---	---	84	210	24	0	0	0	0
07/19/98	---	---	---	---	84	102	8	0	0	0	0
07/20/98	---	---	---	---	96	86	28	0	12	0	0
07/21/98	---	---	---	---	121	35	28	0	129	0	0
07/22/98	---	---	---	---	148	86	60	0	11	0	0
07/23/98	---	---	---	---	104	121	36	0	21	0	0
Total:	0	0	0	0	2,390	2,682	872	1	309	71	0
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	171	192	62	0	22	5	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)
07/10/98	---	---	---	---	11	11	4	0	0	0	0
07/11/98	---	---	---	---	26	32	16	0	0	0	0
07/12/98	---	---	---	---	13	20	4	0	0	0	0
07/13/98	---	---	---	---	4	30	4	4	0	0	0
07/14/98	---	---	---	---	0	5	16	0	0	0	0
07/15/98	---	---	---	---	0	7	12	0	0	0	0
07/16/98	---	---	---	---	4	11	16	1	0	0	0
07/17/98	---	---	---	---	9	10	8	0	0	0	0
07/18/98	---	---	---	---	4	20	0	0	0	0	0
07/19/98	---	---	---	---	12	20	4	0	0	0	0
07/20/98	---	---	---	---	4	5	4	3	0	0	0
07/21/98	---	---	---	---	25	10	8	0	0	0	12
07/22/98	---	---	---	---	4	0	4	0	0	0	0
07/23/98	---	---	---	---	0	0	8	0	0	0	0
Total:	0	0	0	0	116	181	108	8	0	0	12
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	8	13	8	1	0	0	1

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)
07/10/98	---	---	---	---	0	12	12	0	0	0	0
07/11/98	---	---	---	---	13	11	0	0	0	0	134
07/12/98	---	---	---	---	0	20	0	0	0	0	28
07/13/98	---	---	---	---	9	10	0	0	0	0	70
07/14/98	---	---	---	---	4	31	4	0	0	0	0
07/15/98	---	---	---	---	4	15	12	0	0	0	38
07/16/98	---	---	---	---	22	0	0	0	0	0	0
07/17/98	---	---	---	---	4	8	0	0	38	0	12
07/18/98	---	---	---	---	0	10	0	0	0	0	0
07/19/98	---	---	---	---	4	20	0	0	1	0	0
07/20/98	---	---	---	---	0	16	0	0	0	0	0
07/21/98	---	---	---	---	0	10	4	0	0	0	0
07/22/98	---	---	---	---	0	10	0	0	0	0	12
07/23/98	---	---	---	---	4	5	0	0	0	0	0
Total:	0	0	0	0	64	178	32	0	39	0	294
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	5	13	2	0	3	0	21

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)
07/10/98	---	---	---	---	0	0	0	0	0	0	0
07/11/98	---	---	---	---	0	0	0	3	119	0	0
07/12/98	---	---	---	---	0	0	0	1	0	0	0
07/13/98	---	---	---	---	4	0	0	0	0	0	0
07/14/98	---	---	---	---	0	0	0	1	0	0	0
07/15/98	---	---	---	---	0	0	0	0	60	0	0
07/16/98	---	---	---	---	0	0	0	1	0	103	0
07/17/98	---	---	---	---	0	0	0	0	38	134	0
07/18/98	---	---	---	---	0	0	0	0	0	0	0
07/19/98	---	---	---	---	0	0	0	3	0	0	0
07/20/98	---	---	---	---	0	0	0	0	0	0	0
07/21/98	---	---	---	---	0	0	0	0	28	0	0
07/22/98	---	---	---	---	0	0	0	0	45	0	0
07/23/98	---	---	---	---	0	0	0	0	11	0	0
Total:	0	0	0	0	4	0	0	9	301	237	0
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	0	0	0	1	22	17	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 July 23, 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	19,767	2,425	26,336	1,546	19,623	2,541						
TDA	25,330	503	69,365	375	44,144	1,889	14,512	1,376	19,107	943	10,075	763						
JDA	22,495	418	62,253	327	34,393	1,541	15,488	1,166	19,467	907	14,197	1,550						
MCN	19,456	335	57,832	404	33,819	1,722	14,895	1,147	19,459	933	14,621	1,419						
IHR	12,420	131	41,398	75	18,178	714	5,395	299	9,001	99	4,457	397						
LMN	10,627	126	38,479	146	17,565	767	4,153	282	8,962	90	4,227	413						
LGS	10,218	104	37,874	108	n/a	n/a	4,180	312	9,125	52	n/a	n/a						
LWG	9,881	106	33,855	81	15,110	655	4,273	307	10,415	112	4,211	402						
PRD	4,147	37	6,780	8	10,704	173	11,491	364	10,612	286	10,958	357						
RIS	3,270	54	6,153	52	8,534	192	8,475	486	8,214	256	8,421	485						
RRH	789	53	1,856	10	2,066	52	3,973	190	3,355	146	2,512	147						
WEL	6	4	942	29	1,204	50	1,520	796	1,270	34	1,312	99						

	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	1	0	7	0	12	7	12,751	45,121	50,391	31,587	36,775	41,385	10,405
TDA	0	0	0	0	0	0	8,566	30,624	39,392	10,960	13,507	18,015	3,620
JDA	0	0	0	0	0	0	9,745	33,502	39,532	17,325	12,624	12,774	3,407
MCN	0	0	0	0	0	0	9,314	34,879	41,025	8,204	9,039	10,655	2,030
IHR	0	0	0	0	0	0	0	2	7	4,499	4,169	6,206	1,041
LMN	0	0	0	0	0	0	2	3	7	3,171	3,387	5,151	778
LGS	0	0	0	0	n/a	n/a	1	4	n/a	2,959	2,697	n/a	865
LWG	0	0	0	0	0	0	3	1	5	5,040	4,562	6,816	1,191
PRD	0	1	0	0	0	0	10,961	38,763	43,103	410	332	838	0
RIS	9	0	5	0	1	0	8,140	31,518	33,780	245	194	659	0
RRH	0	0	0	0	1	0	4,292	20,700	16,076	238	144	380	0
WEL	0	3	0	0	0	0	2,165	14,580	13,165	49	75	244	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 July 22.

1998 totals at LGS are based on video counts accumulated through July 21.

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 07/10/98 to 07/23/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	952	23,880	2,328	2,396	64	29,620
Bypassed	0	115	0	1	0	116
Trucked	1,343	28,547	2,644	2,957	70	35,561
Barged	0	0	0	0	0	0
Total Transported	**1,343**	**28,547**	**2,644**	**2,957**	**70**	**35,561**
LITTLE GOOSE DAM						
Collected	8,520	27,695	2,863	2,117	178	41,373
Bypassed	0	0	0	0	0	0
Trucked	9,009	25,988	3,102	2,130	176	40,405
Barged	0	0	0	0	0	0
Total Transported	**9,009**	**25,988**	**3,102**	**2,130**	**176**	**40,405**
LOWER MONUMENTAL DAM						
Collected	184	9,612	980	120	32	10,928
Bypassed	0	7	5	0	0	12
Trucked	181	9,942	991	106	32	11,252
Barged	0	0	0	0	0	0
Total Transported	**181**	**9,942**	**991**	**106**	**32**	**11,252**
MCNARY DAM						
Collected	720	2,344,926	283	237	285	2,346,451
Bypassed	0	36,492	0	0	0	36,492
Trucked	0	0	0	0	0	0
Barged	635	2,218,465	245	220	277	2,219,842
Total Transported	**635**	**2,218,465**	**245**	**220**	**277**	**2,219,842**
PROJECT TOTALS						
Collected	10,376	2,406,113	6,454	4,870	559	2,428,372
Bypassed	0	36,614	5	1	0	36,620
Trucked	10,533	64,477	6,737	5,193	278	87,218
Barged	635	2,218,465	245	220	277	2,219,842
Total Transported	**11,168**	**2,282,942**	**6,982**	**5,413**	**555**	**2,307,060**

Transportation Summary Report

Cumulative Transportation Summary
through 07/23/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	1,513,337	55,023	5,025,255	155,020	49,596	6,798,231
Bypassed	102,728	409	124,448	1,426	0	229,011
Trucked	34,634	44,373	55,032	6,031	593	140,663
Barged	1,449,633	8,532	4,888,200	147,145	48,911	6,542,421
Total Transported	**1,484,267**	**52,905**	**4,943,232**	**153,176**	**49,504**	**6,683,084**
LITTLE GOOSE DAM						
Collected	899,151	36,535	1,504,705	50,765	17,637	2,508,793
Bypassed	0	0	0	0	0	0
Trucked	12,859	31,882	9,479	3,066	771	58,057
Barged	874,548	1,663	1,490,712	47,129	16,696	2,430,748
Total Transported	**887,407**	**33,545**	**1,500,191**	**50,195**	**17,467**	**2,488,805**
LOWER MONUMENTAL DAM						
Collected	492,546	17,452	948,803	29,469	14,873	1,503,143
Bypassed	4,255	196	12,492	1,008	639	18,590
Trucked	1,214	12,992	4,109	356	253	18,924
Barged	485,912	3,913	931,488	28,063	13,963	1,463,339
Total Transported	**487,126**	**16,905**	**935,597**	**28,419**	**14,216**	**1,482,263**
MCNARY DAM						
Collected	1,043,899	7,557,524	327,355	125,897	512,030	9,566,705
Bypassed	1,004,308	163,229	316,015	109,189	492,648	2,085,389
Trucked	7,035	70,968	4,888	4,978	4,115	91,984
Barged	28,707	7,162,946	6,038	11,478	13,006	7,222,175
Total Transported	**35,742**	**7,233,914**	**10,926**	**16,456**	**17,121**	**7,314,159**
PROJECT TOTALS						
Collected	3,948,933	7,666,534	7,806,118	361,151	594,136	20,376,872
Bypassed	1,111,291	163,834	452,955	111,623	493,287	2,332,990
Trucked	55,742	160,215	73,508	14,431	5,732	309,628
Barged	2,838,800	7,177,054	7,316,438	233,815	92,576	17,658,683
Total Transported	**2,894,542**	**7,337,269**	**7,389,946**	**248,246**	**98,308**	**17,968,311**