



Fish Passage Center

Weekly Report #98 - 20

July 31, 1998

2501 SW First Ave., Suite 230
Portland, OR 97201-4752
phone: 503/230-4582
fax: 503/230-7559

SUMMARY OF EVENTS:

Water Supply. Summer weather continues. Maximum air temperatures were approaching 100 degrees F over SE Washington. Scattered thunderstorms and convective showers were reported across much of the region.

System Storage. US reservoirs continue with BiOp required summer augmentation drafting for endangered Snake River salmon. The Canadian reservoirs will continue to refill to the end of July target storage, in accordance with the Treaty Detailed Operating Plan.

A summary of actual elevations on July 30, 1998 is shown in the following table:

Reservoir	Actual Elev. [ft] 7/30/98	Max. Pool [ft]
Mica	2463.22	2475.0
Arrow	1438.40*	1444.0
Duncan	1891.57	1892.0
Libby	2457.37	2459.0
Hungry Horse	3553.22	3560.0
Grand Coulee	1283.10	1290.0
Brownlee	2054.74*	2077.0
Dworshak	1564.17	1600.0

*as of July 29th

US reservoirs:

- Libby continues to draft for summer augmentation flows at a flat rate of 12 kcfs. The agreement on the Libby/Arrow swap between BC Hydro and BPA is signed, providing for approximately 160 to 200 ksfd of water to remain in the reservoir. This operation will result in elevation of 2457-2458 ft at the end of August.

- Hungry Horse continues summer augmentation operations with outflows of 7.2 kcfs, trying to meet the flow level of 3.5 kcfs at Columbia Falls. The project will draft to an elevation of 3540 ft by the end of August.
- Grand Coulee will operate to support minimum flows at McNary of 145 kcfs for the next week.
- Brownlee continues augmentation drafting with out flows of 19 kcfs limited to a one foot per day draft rate for recreation concerns. Idaho Power Company delivered all of its 237 kaf BiOp obligation for summer flow augmentation and is currently drafting shaping water for Payette system.
- Dworshak will decrease its releases to 14 kcfs. The project releases will be managed to provide water temperatures of 48° F for maintaining 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 continue to be high and irrigation withdrawals are increasing.

Jackson Lake starts drafting for irrigation at a rate of about 2.3 kcfs.

Palisades continues slow drafting for Upper Snake diversion irrigation withdrawal at a rate of 10.5 kcfs, about 1.5 kcfs higher than inflow.

American Falls continues to intensively draft 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, continues to be at a

constant rate of about 1.5 kcfs since July 7. Irrigation withdrawal upstream of Minidoka increased to a rate of 10.9 kcfs. Irrigation withdrawal at the Upper Snake diversion, upstream from Blackfoot, continues to be between 9 and 10 kcfs.

Boise River Basin:

Anderson and Arrowrock continue with more intensive drafting for irrigation withdrawals. Current reservoir levels are 93% of full and 78% of full. The flow at Glenwood Bridge remained about 1.3 kcfs.

System Streamflow: The weekly average flows at the Snake River, due to flow augmentation from the reservoirs, remained the same as last week. Mid-Columbia flows decreased compared to flows from 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 17

through July 23 period is shown in the following Table:

Project	July 17-23	July 24-31
Priest Rapids	138.3 kcfs	123.9 kcfs
McNary	190.5 kcfs	177.9 kcfs
Lower Granite	54.8 kcfs	54.8 kcfs
Bonneville	197.4 kcfs	187.5 kcfs

Spill. Spill above hydraulic capacity continues at Dworshak Dam as flow augmentation is implemented. In the Lower Snake River the summer spill program is being implemented at Ice Harbor Dam. Spill averaged 39.9 kcfs at Ice Harbor Dam over the past week.

The lower Columbia River summer spill program began on July 1, 1998. As flows decrease the amount of spill occurring at McNary Dam in excess of hydraulic capacity continues to decrease considerably. Spill averaged 21.7 kcfs at McNary Dam, 46.2 kcfs at John Day Dam, 74.3 kcfs at The Dalles Dam, and 86.5 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. Three juvenile subyearling chinook salmon have been detected with signs over the past week out of 1100 examined.

Smolt Monitoring. Snake River Drainage.

Daily wild subyearling chinook passage indices at Lower Granite Dam dropped to an average of 807 fish this week from the average of 1,152 per day during the final five days of last week. The drop in the wild subyearling chinook passage was more pronounced at Little Goose Dam where the week ended about 70% lower than it began (first three days averaged 1,201 fish and last three days averaged 346 fish). This week's average detection of PIT tagged hatchery subyearling chinook was 232 fish per day at Lower Granite Dam.

Columbia River Drainage. In the Mid-Columbia River, this week's subyearling chinook passage indices at Rock Island Dam averaged 235 fish per day, about 30% lower than last week's average. In the lower Columbia River, subyearling chinook passage indices at McNary dropped to an average of 39,038 per day during the 6 days of sampling, down 63% from last week's average. Based on PIT tag detections at McNary Dam, most subyearling chinook from Hanford reach, the Yakima River, Priest Rapids Hatchery and Ringold Hatchery have passed McNary Dam now, and subyearling chinook from locations above Lower Granite Dam and above Rock Island Dam continue to have a strong presence now. Less change in subyearling chinook passage indices has occurred at John Day and Bonneville dams between this week and last week.

Adult Fish Passage. At Bonneville Dam, adult summer chinook counts were normally about 200 per day for the week of July 24 through July 30). The cumulative count at Bonneville Dam through July 30 was 21,279, about 76.7% of the 1997 count and nearly equal to the 10-year average. Effective August 1, chinook passing Bonneville Dam will become fall chinook on the books. The count of summer chinook at McNary Dam was 15,707, about 77.6% of the 1997 count and almost identical to the 10-year average. The turnoff into the Snake River (Ice Harbor Dam count) totaled 5,439, about 59.9% and 120.1% of the 1997 count and 10-year average, respectively, at the project. Daily counts of adult summer chinook were less than 10 fish per day by week's end at the Snake River projects. The cumulative count of summer chinook at Lower Granite Dam was 4,332 through July 30. The cumulative count of summer chinook at Priest Rapids Dam was 12,884, and this total surpassed the 1997 count and 10-year average through July 30. Of the approximately 9,961 that have passed Rock Island Dam, about 51.6% summer chinook have continued past Rocky Reach Dam.

The steelhead run at Bonneville Dam increased to about 1,600 to 1,800 fish per day for this passage week. The season count at Bonneville Dam (March 15 - July 30) was 43,593, and remains below either the 1997 count or the 10-year average to date. Of these steelhead above Bonneville Dam, about 12,134 have passed The Dalles Dam or about 27.8% of the Bonneville total. As normally occurs, a portion of the fish begin seeking cooler water in some of the tributary streams above Bonneville Dam, especially when hot water temperatures (>70° F) exist in the mainstem Columbia River. Steelhead are still continuing to migrate upstream, with the McNary count through July 30 at 9,301. The Ice Harbor Dam count was 5,136 to date, with the daily passage counts normally between 70 and 110 for the week. The cumulative count for steelhead at Priest Rapids was 786, about midway between the 1997 count and the 10 year average at the dam.

Sockeye counts declined to nearly 20 per day by the end of the reporting week at Bonneville Dam. This year's run of 13,123 was approximately 28% and 26% of the 1997 and 10-year average count, respectively through July 30. The sockeye passage at the Mid-Columbia projects is dropping, with Priest Rapids daily count about 30 fish per day. The cumulative count for the season at Priest Rapids Dam is now 11,461. The percentage of sockeye that are destined for Lake Osoyoos should exceed those migrating to Lake Wenatchee as about 58% of the sockeye past Rock Island (9,103) have been counted at Rocky Reach Dam (5,335). There is no further change or update of sockeye that have passed Lower Granite Dam this season (3 daytime plus 1 at night).

Some interesting facts from the sampling completed by CRITFC throughout the adult passage season at Bonneville Dam follow:

- Summer Chinook - They are characterized by a higher proportion of 5-yr old fish than in past years. Through their July 18 sampling, 5-yr old salmon accounted for 52% of the run compared to 38% over the last eight years.
- Sockeye - Similar to the chinook, the sockeye run at Bonneville Dam was dominated by 5-yr old fish. Through July 18, approximately 56% of the run have been comprised of 5-yr old fish compared to only 9% over the past 13 years. Sockeye jacks (age 1.1) accounted for 23% of the 1998 run compared to 8% in past years. The 4-yr old fish comprised only 10% of the run compared to 74% in the past 13 years of sampling.
- Summer Chinook - Marine mammal wounds averaged 9% through July 18 with a high rate of 29% the first week of June and then ranged from 3% to 14% after that week.
- Sockeye - Marine mammal wounds averaged 6% through the sampling at Bonneville Dam, with the range from 1% to 11%.

Note that the Fish Passage Center began listing the "Wild" steelhead in the Adult Fish Passage Table in last week's report. In time we will add the historic counts for the "Wild" steelhead. The Wild component of the run, based on

the absence of the adipose fin, was 14,737 or about 1/3 of the total steelhead passing Bonneville Dam.

Also, the first coho are arriving at Bonneville Dam for the season, about a dozen have been counted.

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 mid August.

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
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
07/24/98	110.9	0.1	113.7	0.0	121.2	12.2	128.1	13.9	125.1	21.4	118.2	17.7	133.4	49.9
07/25/98	105.5	0.1	108.8	0.0	110.7	9.6	113.1	9.1	112.3	21.4	110.7	16.5	118.7	45.5
07/26/98	100.2	0.1	102.2	0.0	101.7	8.7	106.1	0.0	105.3	21.4	101.4	15.2	109.4	40.8
07/27/98	139.2	0.1	136.4	0.0	136.9	10.4	145.0	0.0	139.6	15.4	133.7	20.6	142.6	52.9
07/28/98	96.9	0.1	107.7	0.0	115.0	9.5	123.9	8.8	123.0	19.0	120.6	18.4	136.2	50.8
07/29/98	99.6	0.1	103.5	0.0	106.1	9.3	108.5	15.2	105.9	20.0	101.1	15.2	110.5	41.6
07/30/98	102.9	0.1	101.5	0.0	103.5	9.6	106.3	12.8	104.4	20.0	105.5	16.2	116.9	43.7

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
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
07/24/98	19.8	10.1	---	---	53.4	0.0	51.3	0.0	53.8	0.0	55.6	35.5
07/25/98	19.8	10.1	---	---	52.3	0.0	53.5	0.0	56.6	0.0	59.8	43.0
07/26/98	19.8	10.0	---	---	51.0	0.0	50.8	0.0	54.2	0.0	58.1	41.6
07/27/98	19.8	10.0	---	---	53.7	0.0	52.8	0.0	56.1	0.0	57.2	37.5
07/28/98	19.8	9.9	---	---	54.0	0.0	53.2	0.0	55.1	0.0	59.0	37.7
07/29/98	19.8	9.9	---	---	49.8	0.0	49.8	0.0	53.8	0.0	55.0	41.9
07/30/98	19.7	9.8	---	---	51.3	0.0	51.7	0.0	54.3	0.0	55.8	42.4

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
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	65.1	35.4
07/23/98	174.3	2.8	175.3	45.5	177.9	98.0	190.8	89.5	40.2	51.9
07/24/98	179.4	9.6	185.2	48.4	171.7	61.3	191.7	87.7	60.1	34.7
07/25/98	178.5	17.4	193.3	47.7	189.6	57.1	192.1	87.6	66.8	28.5
07/26/98	173.6	27.3	169.8	45.2	159.8	91.5	168.7	87.9	66.6	4.9
07/27/98	184.1	39.4	188.9	47.2	190.9	118.1	197.2	87.8	64.1	36.1
07/28/98	195.5	38.7	200.3	49.2	192.7	67.5	199.6	86.4	67.4	36.7
07/29/98	171.3	12.1	178.7	44.0	171.0	50.5	188.9	84.3	54.8	40.6
07/30/98	162.8	7.5	160.9	41.6	---	---	174.3	84.1	47.5	33.5

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													
	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
	07/25/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/30/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
John Day Dam													
	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
	07/25/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	07/28/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/30/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Bonneville Dam													
	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
	07/25/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/28/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/30/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Rock Island Dam													
	07/22/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/24/98	SubYrlng Chinook	100	2	1	1.00%	0.00%	0	1	0	0	1	1
	07/27/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/29/98	SubYrlng Chinook	100	2	2	2.00%	0.00%	1	1	0	0	0	0

Hatchery Release Summary
Schedule for Next Two Weeks
From 07/23/98 - 08/06/98

Hatchery	Species	FPC	Number	Release Dates		Release Site	River Name
		LotID	Released	Begin	End		
				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 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>				
	24 h		12 h	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
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
7/24	117	117	118	24	115	115	115	24	114	115	116	24	114	114	115	24	112	113	113	23	110	111	112	24
7/25	115	116	116	24	114	114	115	24	114	114	116	24	114	114	115	24	112	113	114	24	110	111	112	24
7/26	115	116	117	24	114	114	115	24	114	115	116	24	114	115	117	23	112	113	115	23	110	111	112	23
7/27	119	119	120	21	114	114	115	20	114	114	115	20	115	115	115	23	113	113	113	23	112	113	115	19
7/28	119	120	121	24	114	115	115	24	114	115	118	24	114	114	115	12	113	113	114	23	112	113	114	22
7/29	119	120	120	24	113	114	115	24	113	113	114	8	110	115	115	20	113	114	114	23	111	112	114	23
7/30	121	121	122	17	114	114	114	16	---	---	---	0	114	114	114	23	113	113	114	23	111	112	113	22

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>				
	24 h		12 h	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
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
7/24	114	114	115	24	112	112	113	24	121	122	122	24	---	---	---	0	---	---	---	0	---	---	---	0
7/25	114	114	114	24	111	112	113	24	121	121	122	24	---	---	---	0	---	---	---	0	---	---	---	0
7/26	113	114	114	23	110	111	112	23	121	121	122	23	---	---	---	0	---	---	---	0	---	---	---	0
7/27	114	114	114	18	111	112	113	19	118	120	121	18	---	---	---	0	---	---	---	0	---	---	---	0
7/28	115	115	119	22	112	113	114	22	118	118	119	22	---	---	---	0	---	---	---	0	---	---	---	0
7/29	115	115	115	23	111	112	114	23	118	118	119	22	---	---	---	0	---	---	---	0	---	---	---	0
7/30	114	114	115	22	110	111	112	22	118	118	118	22	---	---	---	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>				
	24 h		12 h	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	24 h		12 h	#	
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
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
7/24	---	---	---	0	116	117	117	24	100	101	101	24	109	111	112	24	106	106	109	24	105	106	106	24
7/25	---	---	---	0	116	117	117	24	100	101	101	24	109	111	112	24	106	108	112	24	105	106	106	24
7/26	---	---	---	0	117	118	118	24	116	117	117	24	109	111	112	24	110	112	115	24	105	106	107	24
7/27	---	---	---	0	118	118	118	24	116	117	117	24	109	111	112	24	110	111	113	24	106	106	107	24
7/28	---	---	---	0	118	118	118	24	116	117	117	24	109	111	112	24	108	109	111	14	106	106	107	14
7/29	---	---	---	0	118	118	118	24	116	117	117	24	109	110	112	24	109	110	112	24	106	107	107	24
7/30	---	---	---	0	118	118	118	24	116	116	117	24	109	109	110	24	106	107	108	24	106	106	107	24

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>Tlwr L. Goose</u>			<u>Lower Mon.</u>			<u>Tlwr L. Mon</u>			<u>Ice Harbor</u>			<u>Tlwr Ice Harbor</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						
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
7/24	103	104	105	24	102	102	103	24	102	103	103	24	102	103	103	24	101	101	101	24	115	116	118	24
7/25	104	105	108	24	101	102	102	24	103	104	106	24	102	103	103	24	101	101	101	24	116	117	118	24
7/26	109	110	113	24	101	102	102	24	105	107	110	24	102	104	105	24	102	102	103	24	116	117	118	24
7/27	108	110	111	24	102	103	104	24	104	105	107	24	103	104	104	24	103	103	104	24	115	117	118	24
7/28	105	107	108	24	104	104	105	24	103	104	105	24	103	103	104	24	103	103	104	24	115	116	117	24
7/29	107	109	112	24	104	105	106	24	105	106	110	24	102	103	103	24	103	104	104	24	115	116	117	24
7/30	108	109	111	24	104	105	105	24	105	106	110	24	103	104	104	24	103	103	103	24	115	115	115	7

Total Dissolved Gas Saturation Data at Lower Columbia Sites

Date	<u>McNary-Oregon</u>			<u>McNary-Wash.</u>			<u>Tlwr McNary</u>			<u>John Day</u>			<u>Tlwr John Day</u>			<u>The Dalles</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						
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
7/24	114	116	118	24	111	111	111	24	113	113	114	24	105	105	105	24	112	118	120	24	106	109	111	24
7/25	115	118	120	24	111	112	117	24	113	115	115	24	105	105	106	24	112	118	120	24	107	110	113	24
7/26	113	115	117	24	111	113	116	24	111	112	113	24	105	105	106	23	112	118	119	24	107	109	113	23
7/27	112	115	118	24	110	111	112	24	112	113	113	24	---	---	---	0	112	118	120	24	109	112	114	23
7/28	112	115	119	24	111	112	114	24	113	113	114	24	---	---	---	0	112	117	119	24	109	112	115	23
7/29	112	112	115	17	111	113	114	23	111	113	115	24	107	108	109	23	112	117	118	24	108	110	112	23
7/30	---	---	---	0	109	110	113	24	110	111	113	24	107	108	108	22	113	117	118	22	108	109	112	23

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>#</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						
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
7/24	105	106	107	24	100	101	101	24	113	115	116	24	113	116	120	24	111	113	115	24	105	106	107	24
7/25	106	107	108	24	100	101	101	24	113	114	115	22	114	117	119	24	111	114	116	24	106	107	107	24
7/26	107	108	110	23	100	101	101	24	114	114	116	23	117	118	121	23	113	116	118	24	106	107	108	24
7/27	110	110	112	23	100	101	101	24	115	116	117	23	116	118	120	23	115	117	119	24	107	108	108	24
7/28	114	115	120	24	100	101	101	24	117	117	118	23	118	119	121	23	115	118	120	23	107	107	108	23
7/29	112	113	115	23	100	101	101	24	117	117	119	23	116	118	121	23	115	116	117	24	106	107	108	24
7/30	106	107	110	19	100	101	101	24	114	115	116	23	114	117	120	23	113	114	115	24	106	106	107	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

Date	Hatchery							Hatchery/Wild Combined			
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
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
07/24/98	---	---	---	---	36	20	4	9	0	68	0
07/25/98	---	---	---	---	28	5	0	0	80	0	0
07/26/98	---	---	---	---	20	30	0	5	0	0	10
07/27/98	---	---	---	---	32	20	20	0	1	0	0
07/28/98	---	---	---	---	24	8	0	0	---	0	0
07/29/98	---	---	---	---	60	8	0	0	0	99	0
07/30/98	---	---	---	---	32	16	---	0	54	0	0
Total:	0	0	0	0	539	462	56	77	508	405	35
# Days:	0	0	0	0	14	14	13	14	13	14	14
Average:	0	0	0	0	39	33	4	6	39	29	3

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
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
07/24/98	---	---	---	---	24	40	16
07/25/98	---	---	---	---	8	15	20
07/26/98	---	---	---	---	16	25	16
07/27/98	---	---	---	---	8	27	8
07/28/98	---	---	---	---	28	22	12
07/29/98	---	---	---	---	24	4	4
07/30/98	---	---	---	---	4	12	---
Total:	0	0	0	0	307	1,142	112
# Days:	0	0	0	0	14	14	13
Average:	0	0	0	0	22	82	9

Wild Subyearling Chinook

LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	
2,439	2,647	760	
1,841	2,953	580	
1,224	1,564	516	
1,212	1,374	356	
1,118	1,022	392	
1,164	1,420	260	
1,040	1,565	324	
836	1,641	544	
884	1,059	452	
840	902	484	
1,016	518	448	
460	371	288	
912	326	296	
700	342	---	
Total:	15,686	17,704	5,700
# Days:	14	14	13
Average:	1,120	1,265	438

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)
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
07/24/98	---	---	---	---	0	0	4	215	53,375	10,129	12,729
07/25/98	---	---	---	---	0	5	12	272	51,362	8,101	3,532
07/26/98	---	---	---	---	0	0	4	292	59,848	13,306	3,633
07/27/98	---	---	---	---	0	2	4	269	38,271	23,983	2,710
07/28/98	---	---	---	---	0	2	4	238	---	23,538	4,183
07/29/98	---	---	---	---	0	0	0	209	42,600	33,689	6,985
07/30/98	---	---	---	---	0	3	---	149	40,081	23,466	1,835
Total:	0	0	0	0	0	100	112	4,021	1,021,255	339,568	80,770
# Days:	0	0	0	0	14	14	13	14	13	14	14
Average:	0	0	0	0	0	7	9	287	78,558	24,255	5,769

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)
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
07/24/98	---	---	---	---	24	55	24	1	0	0	0
07/25/98	---	---	---	---	12	35	16	1	79	0	0
07/26/98	---	---	---	---	24	66	8	0	0	0	19
07/27/98	---	---	---	---	28	21	20	0	0	0	0
07/28/98	---	---	---	---	52	19	4	0	---	0	11
07/29/98	---	---	---	---	40	18	8	0	0	0	0
07/30/98	---	---	---	---	32	20	---	0	0	0	0
Total:	0	0	0	0	733	1,131	140	18	209	0	430
# Days:	0	0	0	0	14	14	13	14	13	14	14
Average:	0	0	0	0	52	81	11	1	16	0	31

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)
07/17/98	---	---	---	---	90	94	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
07/24/98	---	---	---	---	84	65	28	0	0	0	0
07/25/98	---	---	---	---	80	40	24	0	1	0	0
07/26/98	---	---	---	---	64	15	20	0	0	0	0
07/27/98	---	---	---	---	32	30	40	0	0	0	0
07/28/98	---	---	---	---	36	16	16	0	---	0	0
07/29/98	---	---	---	---	48	30	24	0	0	0	0
07/30/98	---	---	---	---	56	17	---	0	0	0	0
Total:	0	0	0	0	1,127	947	392	0	174	0	0
# Days:	0	0	0	0	14	14	13	14	13	14	14
Average:	0	0	0	0	81	68	30	0	13	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)
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
07/24/98	---	---	---	---	4	5	0	0	0	0	0
07/25/98	---	---	---	---	0	5	12	0	0	0	0
07/26/98	---	---	---	---	0	0	8	1	0	0	0
07/27/98	---	---	---	---	4	0	0	0	0	0	0
07/28/98	---	---	---	---	0	2	0	0	---	0	0
07/29/98	---	---	---	---	0	0	16	0	0	0	0
07/30/98	---	---	---	---	4	0	---	0	0	0	0
Total:	0	0	0	0	70	77	72	4	0	0	12
# Days:	0	0	0	0	14	14	13	14	13	14	14
Average:	0	0	0	0	5	6	6	0	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)
07/17/98	---	---	---	---	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
07/24/98	---	---	---	---	0	5	0	0	0	0	0
07/25/98	---	---	---	---	0	5	0	0	0	0	0
07/26/98	---	---	---	---	8	10	0	0	0	0	24
07/27/98	---	---	---	---	4	2	0	0	0	0	0
07/28/98	---	---	---	---	0	4	0	0	---	0	0
07/29/98	---	---	---	---	0	6	0	0	0	0	0
07/30/98	---	---	---	---	0	0	---	0	0	0	14
Total:	0	0	0	0	24	111	4	0	39	0	62
# Days:	0	0	0	0	14	14	13	14	13	14	14
Average:	0	0	0	0	2	8	0	0	3	0	4

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)
07/17/98	---	---	---	---	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
07/24/98	---	---	---	---	0	0	0	0	0	0	0
07/25/98	---	---	---	---	0	0	0	0	0	0	0
07/26/98	---	---	---	---	0	5	0	0	0	0	0
07/27/98	---	---	---	---	0	0	0	0	0	0	0
07/28/98	---	---	---	---	0	0	4	0	---	0	11
07/29/98	---	---	---	---	0	0	0	0	0	0	26
07/30/98	---	---	---	---	0	0	---	0	0	0	14
Total:	0	0	0	0	0	5	4	3	122	134	51
# Days:	0	0	0	0	14	14	13	14	13	14	14
Average:	0	0	0	0	0	0	0	0	9	10	4

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 30, 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	21,279	2,650	27,758	1,890	21,489	2,865						
TDA	25,330	503	69,365	375	44,144	1,889	15,202	1,516	19,827	1,176	10,075	763						
JDA	22,495	418	62,253	327	34,393	1,541	16,354	1,365	20,106	1,109	15,051	1,722						
MCN	19,456	335	57,832	404	33,819	1,722	15,707	1,287	20,240	1,161	15,631	1,606						
IHR	12,420	131	41,398	75	18,178	714	5,439	299	9,079	115	4,527	406						
LMN	10,627	126	38,479	146	17,565	767	4,238	289	9,047	92	4,294	428						
LGS	10,218	104	37,874	108	n/a	n/a	4,266	333	9,222	55	n/a	n/a						
LWG	9,881	106	33,855	81	15,110	655	4,332	313	10,544	120	4,295	418						
PRD	4,147	37	6,780	8	10,704	173	12,884	470	11,902	402	12,220	446						
RIS	3,270	54	6,153	52	8,534	192	9,961	746	9,433	357	9,742	643						
RRH	789	53	1,856	10	2,066	52	5,138	223	4,405	339	3,134	218						
WEL	6	4	942	29	1,204	50	2,000	835	2,013	72	1,712	140						

	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	12	0	19	0	19	13	13,023	46,550	50,934	43,593	63,621	58,329	14,737
TDA	0	0	0	0	1	1	8,724	31,911	39,939	12,134	20,909	25,173	4,318
JDA	0	0	0	0	0	0	9,870	35,143	40,249	19,218	17,218	16,547	4,124
MCN	0	0	0	0	0	0	9,435	37,124	42,139	9,301	12,463	14,032	2,354
IHR	0	0	0	0	0	0	0	6	8	5,136	5,738	7,629	1,165
LMN	0	0	0	0	0	0	2	15	9	3,581	4,559	6,271	859
LGS	0	0	0	0	n/a	n/a	2	8	n/a	3,214	3,298	n/a	941
LWG	0	0	0	0	0	0	3	3	6	5,237	5,054	7,202	1,251
PRD	0	1	0	0	0	0	11,461	42,783	45,987	786	592	1,253	0
RIS	9	0	5	0	2	0	9,103	36,590	38,823	438	330	910	0
RRH	0	0	0	0	1	0	5,335	25,904	19,410	357	228	537	0
WEL	0	3	0	0	0	0	3,199	20,232	17,268	108	118	351	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 29.

1998 totals at LGS are based on video counts accumulated through July 28.

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 07/17/98 to 07/30/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	832	15,296	1,176	712	24	18,040
Bypassed	0	26	0	0	0	26
Trucked	807	15,035	1,149	699	24	17,714
Barged	0	0	0	0	0	0
Total Transported	807	15,035	1,149	699	24	17,714
LITTLE GOOSE DAM						
Collected	1,604	17,804	1,024	1,131	116	21,679
Bypassed	0	0	0	0	0	0
Trucked	1,584	17,089	976	1,092	110	20,851
Barged	0	0	0	0	0	0
Total Transported	1,584	17,089	976	1,092	110	20,851
LOWER MONUMENTAL DAM						
Collected	168	5,812	464	140	8	6,592
Bypassed	35	939	61	23	0	1,058
Trucked	121	4,430	337	108	6	5,002
Barged	0	0	0	0	0	0
Total Transported	121	4,430	337	108	6	5,002
MCNARY DAM						
Collected	435	859,751	153	182	135	860,656
Bypassed	0	20,310	0	0	0	20,310
Trucked	0	0	0	0	0	0
Barged	393	900,521	146	166	131	901,357
Total Transported	393	900,521	146	166	131	901,357
PROJECT TOTALS						
Collected	3,039	898,663	2,817	2,165	283	906,967
Bypassed	35	21,275	61	23	0	21,394
Trucked	2,512	36,554	2,462	1,899	140	43,567
Barged	393	900,521	146	166	131	901,357
Total Transported	2,905	937,075	2,608	2,065	271	944,924

Transportation Summary Report

Cumulative Transportation Summary through 07/30/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	1,602,911	60,681	5,085,190	155,352	49,608	6,953,742
Bypassed	107,697	417	125,375	1,426	0	234,915
Trucked	40,249	50,911	67,490	6,292	609	165,551
Barged	1,449,633	8,532	4,888,200	147,145	48,911	6,542,421
Total Transported	1,489,882	59,443	4,955,690	153,437	49,520	6,707,972
LITTLE GOOSE DAM						
Collected	899,403	41,805	1,504,974	50,999	17,674	2,514,855
Bypassed	0	0	0	0	0	0
Trucked	13,165	38,449	9,853	3,354	812	65,633
Barged	874,575	1,663	1,490,712	47,129	16,696	2,430,775
Total Transported	887,740	40,112	1,500,565	50,483	17,508	2,496,408
LOWER MONUMENTAL DAM						
Collected	492,646	20,116	948,991	29,549	14,877	1,506,179
Bypassed	4,290	1,132	12,552	1,031	639	19,644
Trucked	1,271	14,561	4,233	416	257	20,738
Barged	485,912	3,913	931,488	28,063	13,963	1,463,339
Total Transported	487,183	18,474	935,721	28,479	14,220	1,484,077
M McNARY DAM						
Collected	1,044,027	7,816,566	327,356	125,972	512,030	9,825,951
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	28,781	7,376,938	6,038	11,552	13,006	7,436,315
Total Transported	35,816	7,447,906	10,926	16,530	17,121	7,528,299
PROJECT TOTALS						
Collected	4,038,987	7,939,168	7,866,511	361,872	594,189	20,800,727
Bypassed	1,116,295	164,778	453,942	111,646	493,287	2,339,948
Trucked	61,720	174,889	86,464	15,040	5,793	343,906
Barged	2,838,901	7,391,046	7,316,438	233,889	92,576	17,872,850
Total Transported	2,900,621	7,565,935	7,402,902	248,929	98,369	18,216,756