Fish Passage Center

Weekly Report #98 - 12

June 5, 1998

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

SUMMARY OF EVENTS:

Water Supply: Precipitation for the October through the end of May period significantly increased compared to the previous period of October through May. Because of the very wet period during the month of May, the precipitation balance increased to average or above average in most of the basin. The lowest amount was 90% of average at Flathead. Areas with precipitation lower than average were in the Washington Cascades and Upper Columbia Basin. Areas with the highest precipitation for the period of October through May were at Harney/Malheur Basin with 146%, at Owyhee/Malheur Basin with 138% and the Upper Deschutes with 134% of average. Observation of the precipitation in the entire basin during the month of May shows that the areas with highest precipitation remain in Upper Deschutes with 575%, at Klamath Basin with 387% of average, Burnt/Grande Ronde with 341% and at Rogue/ Umpqua with 326%. Areas with low precipitation were the NW Slope of the Washington Cascades with 94% and the Columbia above Castelgar with 92%. Those were the two only subbasins with total precipitation lower than average for the entire month of May. Precipitation in the Columbia above Coulee was 176% of the average, the Columbia above The Dalles was 203% of the average and the Snake River above Ice Harbor was 238% of the average.

The new June Early-bird Runoff Volume Forecast has been issued. In general, runoff volume forecast increased at all major sites in Columbia basin as the consequence of the heavy rain during May. This increase will only contribute to higher flows in the period of mid May to mid June. The runoff volume forecast increased in the range of 2% to 35%. The highest increase is in the Snake Basin. The summary of results is shown in the following Table:

Location	Period	April 98 Final		May 98 Final		June 98 Early bird	
		MAF	%	MAF	%	MAF	%
Libby	Apr-Sep	5.52	82	5.38	79	5.94	88
Hungry Horse	Apr-Sep	1.62	74	1.5	69	1.58	72
Grand Coulee	Jan-Jul	55.6	88	53.2	84	5.56	88
The Dalles	Jan-Jul	90.8	86	89.1	84	97.0	92
Lower Granite	Jan-Jul	25.0	84	25	84	30.1	101
Dworshak	Apr-Jul	1.75	65	1.73	64	2.01	74
Brownlee	Apr-Jul	4.78	82	4.54	78	6.56	113

System Storage: The system was passing peak flows of the season during last week. It is expected that a decrease in flows will follow this peak through the end of the season. The Snake river reservoirs continue passing high inflows and the Upper Columbia reservoirs outflows increased. A summary of actual elevations is shown in the following table:

Reservoir	Actual Elev. [ft] 6/3/98	Max. Pool [ft]
Mica	2422.5	2475.0
Arrow	1423.6	1444.0
Duncan	1848.2	1892.0
Libby	2445.07	2459.0
Hungry Horse	3552.94	3560.0
Grand Coulee	1286.40	1290.0
Brownlee	2076.80	2077.0
Dworshak	1599.69	1600.0

- Mica continues with same operations as last week. Actual outflow is about 1 kcfs and it is possible that outflow will be increased to 6-8 kcfs because of the problems with the transmission line between US and Canada. If the transmission line is repaired, the flow will be reduced to 1 kcfs. Current actual and Treaty elevations are almost the same, about 2422.5 ft. The water is contining to be stored on the Non Treaty accounts of

BPA and BC Hydro at rate of 5 kcfs on each side. Currently there is 942 ksfd on the BPA account and 891 ksfd on the BC Hydro account.

- Arrow continues continues refill operations. Current actual elevation remained to be about 7 ft below Treaty elevation. Current outflow is 12 kcfs and 10 kcfs is stored into Treaty storage. It will be released later in the season by the end of July. The current requested outflow is 20 kcfs below Arrow for protecting trout redds, but because of the high Kootenai river inflows in the range of 70 kcfs, outflows from Arrow have been reduced to 12 kcfs. According to BPA, trout redds are at protected because of the upstream backwater effect of Kootenai River.
- Duncan continues to in refill to the end of July full pool elevation last weeks with outflow of 100 cfs.
- Libby continues last weeks operations: to provide constant flows of 25 kcfs at Bonners Ferry. The actual outflow is in the range of 14-18 kcfs.
- Hungry Horse is releasing higher outflows up to 4.8 kcfs to slow refill, as the reservoir is 7 ft from full.
- Grand Coulee will continue to pass currently high inflows with projected average outflows at Priest Rapids higher than 135 kcfs.
- Brownlee is full and continues to pass inflow in the range of 60-80 kcfs.
- Dworshak is full and will continue to pass inflow in the range of 10-14 kcfs.

Upper Snake reservoirs:

The system continued to be operated for flood control due the high precipitation in the area. Irrigation demands are low.

Jackson Lake was refilled up to 90% of full and currently is releasing 5.6 kcfs.

Palisades continues to pass inflow to the end of next week. Currently, the outflow is 16.9 kcfs and the reservoir is 73% full.

American Falls is full and it will continue to pass inflow of 20.2 kcfs. through the end of the next week.

Millner flow at the lowest point of the Upper Snake system decreased to 13.5 kcfs compared to last week's peak flows of 16.5 kcfs. Irrigation withdrawal upstream of Minidoka increased to 6 kcfs (higher for 1 kcfs compared to withdrawals of last week).

System Streamflow: The weekly average flows are slowly receeding for the Snake River and peaking for the mid Columbia. The summary of average weekly flows for run of the river projects during the May 22-June 4 period is shown in the following Table:

Project	May 22-28	May 29-June4
Priest Rapids	141.7 kcfs	228.4 kcfs
McNary	323.9 kcfs	346.1 kcfs
Lower Granite	178.8 kcfs	165.1 kcfs
Bonneville	335.5 kcfs	413.8 kcfs

Spill: Flows in the Snake River have receded slowly this past week and spill levels decreased through the week. Most spill that occurred at the lower Snake River Projects was in excess of hydraulic capacity. Dworshak reservoir is full and passing inflow. Presently, inflow is above powerhouse capacity. Spill at Dworshak averaged 1.9 kcfs over the past week. Spill averaged 64.7 kcfs, 70.8 kcfs, 75.4 kcfs and 88.8 kcfs at Lower Granite, Little Goose, Lower Monumental and Ice Harbor dams, respectively.

The lower Columbia River continued with high flows. Spill at the lower Columbia projects was even greater than last week, and averaged 229.6 kcfs at McNary Dam, 164.4 kcfs at John Day Dam, 236.3 kcfs at The Dalles Dam, and 204.4 kcfs at Bonneville Dam over the past week. Spill continues at all the Mid-Columbia projects.

Total Dissolved Gas Supersaturation and gas Bubble Trauma Monitoring: As expected total dissolved gas levels continued to exceed the water quality waivers at all the lower Snake Projects due to the high spill. Tailwater concentrations were well in excess of the waivers at the beginning of the week, but neared the waiver limits towards the end of the reporting week. The Hells Canyon project has been passing inflows of 60-80 kcfs. The hydraulic capacity of that project

is only 30 kcfs and, consequently, significant amounts of spill have been occurring yielding high levels of TDGS.

The gas levels in the lower Columbia are also above the gas waivers due to a combination of a lack of hydraulic capacity and excess generation spill. Limited data is available for the Mid-Columbia sites at this time, but levels at the sites monitored show dissolved gas levels above the waiver limits during most of the week. Gas bubble trauma monitoring has occurred at all sites over the past week. Some juvenile fish are showing signs throughout the system, with the percentage of signs sometimes exceeding the action criteria (Little Goose and Ice Harbor). However, no management action could be taken since the spill levels were not a result of the Biological Opinion spill program, but were due to flows in excess of hydraulic capacity. Monitoring of GBT in yearling chinook will end in the Snake this week due to decreasing numbers of fish. Steelhead monitoring will continue as long as numbers hold out.

Smolt Monitoring. *Snake River Drainage.* No traps operated this week due to high tributary flows. Once high tributary flows subside, the Snake R (Lewiston) and Imnaha River traps anticipate additional operation, while operations of the Salmon River and Grande Ronde River traps are finished for the season. Following the May 23-25 spike in flow and increased smolt passage, the normal decreasing trend for this time of year continues for passage indices of yearling chinook, steelhead, coho and sockeye at Lower Granite, Little Goose, and Lower Monumental dams. The high late May flows have begun moving subyearling chinook past the Snake River dams. Through 12 a.m. June 4, the cumulative number of PIT tagged wild subyearling chinook is 10 at Lower Granite Dam, 5 at Little Goose Dam, and 1 at Lower Monumental Dam. Likewise, the cumulative number of PIT tagged hatchery subyearling fall chinook is 207 at Lower Granite Dam, 70 at Little Goose Dam, and 33 at Lower Monumental Dam. Because the PIT tagged hatchery subyearling chinook are not adipose clipped they are counted in the sampling at the dams as wild chinook. Those interested in monitoring the progress of the PIT tagged subyearling chinook may query the following groups of fish in PTAGIS paying particular attention to the beginning release dates of the hatchery fish in order to avoid counting yearling fall chinook tagged and released at the same sites:

Coordinator Identification	Tag Site	Release Site	Species Race RearType	Release Dates Begin
BDA	lyfe	clwr	13H	5/29/98
WDM	lyfe	clwr	13H	6/2/88
WDM	lyfe	snaker	13H	6/2/98
WPC	lyfe	snaker	13H	5/14/98
WPC	snaker	snaker	15W	4/16/98

Columbia River Drainage. The passage indices at Rock Island Dam have been fairly stable for yearling chinook, increasing for coho, and decreasing for steelhead and sockeye compared to last week. Since the late-season spike in passage of spring migrants around May 30 at McNary Dam, the trend in passage indices of yearling chinook, coho, steelhead, and sockeye has been a typical decreasing one. Subyearling chinook passage indices at McNary Dam have been steadily increasing this week with a 1-day jump to 129,000 fish on June 3. Four days after the spike in passage of spring migrants at McNary Dam, a large jump in passage occurred at John Day Dam between 11 p.m. – 3 a.m. June 2 for yearling chinook, coho, and sockeye, as well as for subyearling chinook, but not for steelhead. The trend in passage indices at Bonneville Dam has been little changed from last week for yearling chinook, steelhead, and sockeye, while increasing for coho. Subyearling chinook passage indices at Bonneville Dam have steadily increasing this week.

Adult Fish Passage: At Bonneville Dam, the preliminary adult spring chinook for the 1998 season was 38,253, about 1/3 the 1997 total and ½ the 10-year average. The summer chinook count began on June 1 and appeared very reduced (only 812 through June 4); however, the river Q has been high with turbidity readings as low as 1-ft during the past week. The early part of the summer chinook run is normally destined for the Snake River (through mid-June) with the Mid-Columbia summer chinook dominating the counts after mid-June.

The adult spring chinook count at McNary Dam was 18,805 through June 4. The Snake River portion of the up-river spring chinook run was 11,427 at Ice Harbor Dam with the Mid-Columbia count at Priest Rapids Dam totaling 3,816. The count of fish past Prosser Dam on the Yakima River was about 1,500 through early June with Ringold Hatchery having about 900 to date. So far this accounts for about 94% of the spring chinook that have been counted at McNary Dam.

The high flows in the Snake River resulted in very reduced numbers of fish passing the dams during the past week. Adult salmon are now passing the dams at a more normal rate during the last few days. River Q in the Mid-Columbia increased to above 200 kcfs through most of the week resulting in higher levels of spill at some of the projects.

The number of spring chinook reported at Rock Island Dam was near 2,800 for the season, about 74% of the Priest Rapids count to date. About 75% of the Rock Island count will likely enter the Wenatchee River basin. All spring chinook arriving at Wells Dam will be trapped and moved to a hatchery for holding until spawning season.

The steelhead run for the 1998/99 cycle is beginning to pick up at Bonneville Dam., after reducing in numbers with the higher flows during the past week. The high daily tally was 132 for the week with the count for the cumulative total of 3,324.

As noted in the previous report, Bonneville project started the second fish turbine at the new powerhouse on May 28, and it has basically worked satisfactorily since that date. This allows the WA shore fishway to operate at normal criteria levels.

Hatchery Releases: Juvenile subyearling summer and fall chinook will be released from mid-May through late June from hatcheries and acclimation facilities. The Priest Rapids and Ringold Hatchery fall chinook will be released in June as will the summer chinook from Wells (June 4 – 15) and Turtle Rock Hatcheries (mid-June to end of June). Subyearling fall chinook released in the Snake River are from Pittsburg Landing and Big Canyon Acclimation Sites with no fish released from Lyons Ferry Hatchery (on-site). Subyearling releases of fall chinook from the Umatilla River Basin were completed by the end of May. Klickitat Hatchery opened tail screens in mid-May and have allowed the fish to volitionally emigrate from the ponds. The Yakima acclimation ponds also allow the fall chinook volitional emigration into the Yakima River. Little White Salmon fall chinook will be released in late June. Subyearling spring chinook have been released into the Klickitat (500k) and Entiat (157k) rivers this season.

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
05/22/98	111.7	0.1	113.0	0.0	126.9	10.5	135.5	0.0	138.2	37.0	107.8	26.5	117.7	70.6
05/23/98	75.0	0.1	85.8	0.0	105.3	9.1	117.5	0.0	127.1	37.3	120.1	24.4	132.8	78.9
05/24/98	80.4	0.5	81.1	0.9	104.3	9.0	105.0	0.0	110.9	37.4	107.5	21.3	126.5	77.0
05/25/98	136.5	3.3	130.2	6.2	124.8	10.1	130.7	0.3	137.9	37.5	103.5	20.2	109.9	65.5
05/26/98	116.2	0.1	123.3	0.0	140.6	11.0	149.9	0.0	156.6	37.5	145.2	30.3	164.2	99.1
05/27/98	125.5	0.1	122.3	0.8	142.6	11.0	147.4	1.3	154.9	37.4	148.9	30.7	165.5	97.9
05/28/98	175.7	2.6	168.2	13.2	190.5	23.9	191.0	28.6	189.3	37.3	160.7	32.1	175.6	104.4
05/29/98	170.2	3.9	175.4	19.0	209.0	42.2	217.7	52.0	218.5	44.0	194.7	47.6	209.6	124.6
05/30/98	187.6	19.3	184.9	26.3	212.0	42.3	218.1	59.2	222.6	45.2	217.5	71.0	241.3	145.2
05/31/98	166.3	13.1	153.5	13.2	187.2	65.6	184.4	46.0	187.2	44.1	184.6	42.0	211.4	127.8
06/01/98	192.1	22.2	194.7	27.9	218.4	62.4	216.0	68.3	219.1	48.7	200.9	67.0	214.8	132.8
06/02/98	205.0	22.9	209.6	30.2	241.2	72.8	238.8	83.9	245.0	55.0	237.8	92.3	259.5	161.3
06/03/98	191.9	12.0	189.1	15.0	218.4	47.9	225.1	69.0	233.5	46.8	230.9	85.1	250.5	148.5
06/04/98	170.3	1.2	164.8	8.7	186.1	25.8	190.7	30.5	194.5	36.6	185.5	37.9	213.0	129.2

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

	Dworshak		Brownlee		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/22/98	10.0	0.6	---	---	143.6	42.0	138.5	43.6	143.1	42.1	145.8	73.5
05/23/98	12.2	2.8	---	---	172.6	68.4	162.5	61.9	172.1	70.5	173.1	88.6
05/24/98	13.4	4.1	---	---	173.5	68.8	166.2	65.6	179.3	78.2	183.3	106.8
05/25/98	12.6	3.2	---	---	161.5	57.1	155.4	54.7	166.2	63.5	167.4	84.4
05/26/98	11.9	2.5	---	---	178.0	73.4	167.7	68.3	179.4	79.0	180.6	94.3
05/27/98	14.1	4.7	---	---	213.3	109.4	200.4	98.4	211.5	110.0	212.4	124.6
05/28/98	11.0	1.6	---	---	209.0	105.8	197.8	98.3	221.3	120.5	218.6	132.3
05/29/98	9.7	0.3	---	---	191.9	88.1	183.1	85.2	191.8	92.3	189.6	104.3
05/30/98	12.4	3.0	---	---	189.5	88.8	179.8	86.9	198.0	100.9	200.0	107.8
05/31/98	11.9	2.5	---	---	167.5	64.9	163.1	70.9	174.8	87.6	176.5	88.5
06/01/98	10.2	0.9	---	---	162.6	59.7	152.8	65.7	162.7	66.9	164.3	79.1
06/02/98	11.2	1.8	---	---	149.0	49.8	144.1	68.6	153.0	66.2	156.2	82.2
06/03/98	13.0	3.6	---	---	150.7	58.0	146.0	66.1	155.7	64.0	157.2	83.8
06/04/98	10.6	1.2	---	---	142.0	43.4	139.0	52.0	144.1	49.6	149.3	75.7

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
05/22/98	293.1	133.7	295.7	64.7	291.7	163.2	306.0	104.0	71.6	121.2
05/23/98	284.4	132.8	298.3	101.6	287.6	107.7	299.4	108.2	69.3	112.7
05/24/98	317.3	156.3	335.1	111.7	322.2	190.5	320.8	119.2	70.8	121.6
05/25/98	287.0	142.2	308.8	141.0	303.5	159.4	326.7	141.5	68.8	107.3
05/26/98	306.1	147.2	320.2	102.2	314.0	180.7	311.9	112.7	74.7	115.4
05/27/98	379.6	206.8	402.7	159.8	385.4	154.8	378.0	161.9	75.3	131.7
05/28/98	400.1	238.2	424.5	212.3	414.4	243.8	404.8	184.1	79.7	132.7
05/29/98	409.0	251.0	418.6	190.5	408.1	188.3	418.5	208.5	73.1	127.7
05/30/98	414.3	244.1	438.8	189.3	442.2	337.7	417.9	210.1	79.4	119.2
05/31/98	394.4	226.2	420.3	141.2	416.5	239.4	419.9	203.3	79.3	128.0
06/01/98	366.8	195.4	415.5	147.0	416.2	237.8	418.7	210.8	72.9	125.8
06/02/98	385.0	230.0	404.2	166.4	386.4	180.1	410.4	203.7	75.4	122.1
06/03/98	405.4	237.3	416.1	164.9	412.3	197.2	412.6	207.9	73.5	121.9
06/04/98	390.8	223.2	424.2	151.8	416.0	273.6	398.7	186.3	79.6	123.6

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: Rank 1	Rank 2	Rank 3	Rank 4	Fish with L. Line GBT: Num Fish	Avg. Rank
Lower Granite Dam													
	05/27/98	Yearling Chinook	24	4	1	4.16%	0.00%	1	0	0	0	3	1
	05/27/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/29/98	Yearling Chinook	6	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/29/98	Steelhead	100	2	0	0.00%	0.00%	0	0	0	0	2	1
	06/01/98	Yearling Chinook	4	0	0	0.00%	0.00%	0	0	0	0	0	0
	06/01/98	Steelhead	100	4	0	0.00%	0.00%	0	0	0	0	3	1
	06/03/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Little Goose Dam													
	05/26/98	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/27/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/28/98	Yearling Chinook	32	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/29/98	Steelhead	100	4	3	3.00%	0.00%	3	0	0	0	1	1
	05/30/98	Yearling Chinook	17	2	2	11.76%	0.00%	2	0	0	0	0	0
	05/31/98	Steelhead	100	8	8	8.00%	0.00%	8	0	0	0	0	0
	06/02/98	Yearling Chinook	8	0	0	0.00%	0.00%	0	0	0	0	0	0
	06/04/98	Steelhead	25	5	5	20.00%	0.00%	5	0	0	0	0	0
Lower Monumental Dam													
	05/27/98	Yearling Chinook	86	5	2	2.32%	0.00%	2	0	0	0	2	1
	05/27/98	Steelhead	100	3	1	1.00%	0.00%	1	0	0	0	2	1
	05/29/98	Yearling Chinook	31	3	1	3.22%	0.00%	1	0	0	0	2	1
	05/29/98	Steelhead	100	9	5	5.00%	0.00%	5	0	0	0	4	1
	06/01/98	Yearling Chinook	10	0	0	0.00%	0.00%	0	0	0	0	0	0
	06/01/98	Steelhead	100	11	8	8.00%	0.00%	8	0	0	0	3	1
	06/03/98	Yearling Chinook	2	1	0	0.00%	0.00%	0	0	0	0	1	1
	06/03/98	Steelhead	100	10	5	5.00%	0.00%	5	0	0	0	5	1.2
Ice Harbor Dam													
	05/26/98	Yearling Chinook	14	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/26/98	Steelhead	100	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/29/98	Yearling Chinook	27	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/29/98	Steelhead	100	9	6	6.00%	0.00%	6	0	0	0	3	1
	06/02/98	Yearling Chinook	31	2	1	3.22%	0.00%	1	0	0	0	1	1
	06/02/98	Steelhead	100	20	15	15.00%	0.00%	14	1	0	0	5	1

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

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank: Rank 1	Rank 2	Rank 3	Rank 4	Fish with L. Line GBT: Num Fish	Avg. Rank
McNary Dam													
	05/26/98	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/26/98	Steelhead	68	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/28/98	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/28/98	Steelhead	85	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/30/98	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/30/98	Steelhead	100	2	1	1.00%	0.00%	1	0	0	0	1	1
	06/02/98	Yearling Chinook	57	4	3	5.26%	0.00%	3	0	0	0	1	1
	06/02/98	Steelhead	41	4	2	4.87%	0.00%	1	1	0	0	2	2
	06/04/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	06/04/98	Steelhead	31	0	0	0.00%	0.00%	0	0	0	0	0	0
John Day Dam													
	05/26/98	Yearling Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	05/27/98	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/28/98	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/29/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/30/98	Yearling Chinook	100	6	6	6.00%	0.00%	6	0	0	0	0	0
	05/31/98	Steelhead	100	8	8	8.00%	1.00%	7	0	1	0	0	0
	06/02/98	Yearling Chinook	100	6	5	5.00%	0.00%	4	1	0	0	0	0
	06/03/98	Steelhead	100	5	5	5.00%	0.00%	5	0	0	0	0	0
	06/04/98	Yearling Chinook	100	7	7	7.00%	1.00%	6	0	1	0	0	0
	06/05/98	Steelhead	100	7	7	7.00%	0.00%	6	1	0	0	0	0
Bonneville Dam													
	05/26/98	Yearling Chinook	60	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/27/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/28/98	Yearling Chinook	57	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/29/98	Steelhead	100	7	2	2.00%	0.00%	2	0	0	0	2	1
	05/30/98	Yearling Chinook	42	3	1	2.38%	0.00%	0	1	0	0	2	2
	06/01/98	Steelhead	92	7	7	7.60%	0.00%	6	1	0	0	0	0
	06/02/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	06/03/98	Steelhead	33	0	0	0.00%	0.00%	0	0	0	0	0	0
Rock Island Dam													
	05/27/98	Yearling Chinook	100	9	8	8.00%	0.00%	8	0	0	0	1	1
	05/27/98	Steelhead	100	3	2	2.00%	0.00%	2	0	0	0	1	1
	05/29/98	Yearling Chinook	100	9	6	6.00%	0.00%	6	0	0	0	3	1
	05/29/98	Steelhead	100	5	5	5.00%	0.00%	5	0	0	0	0	0
	06/01/98	Yearling Chinook	100	10	9	9.00%	0.00%	7	2	0	0	1	1
	06/01/98	Steelhead	22	0	0	0.00%	0.00%	0	0	0	0	0	0
	06/03/98	Yearling Chinook	100	13	6	6.00%	1.00%	4	1	1	0	7	1
	06/03/98	Steelhead	46	3	2	4.34%	0.00%	2	0	0	0	1	1

Hatchery Release Summary
Schedule for Last Two Weeks
From 05/22/98 to 06/04/98

Hatchery	Species	FPC LotID	Number Released	Release Dates Begin	End	Release Site	River Name
			Nez Perce Tribe				
Kooskia	Coho	98138	220,000	05/11/98	05/22/98	Kooskia H	Clearwater River, Main Fk
Lyons Ferry	FA Chinook	98087	51,500	05/14/98	07/07/98	Pittsburg Landing	Snake River
	FA Chinook	98086	31,500	06/01/98	07/06/98	Clearwater R	Clearwater River, Main Fk
	Agency Total:		303,000				
			ODFW				
Big Canyon	SU Steelhead	98107	85,000	05/13/98	05/27/98	Big Canyon H	Grande Ronde River
	Agency Total:		85,000				
			Umatilla Tribe				
Thornhollow	FA Chinook	98047	2,682,000	05/28/98	06/01/98	Thornhollow Acclim Pd	Umatilla River
	Agency Total:		2,682,000				
			USFWS				
Entiat	SP Chinook	98064	164,999	05/28/98	05/28/98	Entiat H	Entiat River
	Agency Total:		164,999				
			WDFW				
Klickitat	Coho	98095	1,100,000	04/20/98	06/10/98	Klickitat H	Klickitat River
	FA Chinook	98096	4,000,000	05/21/98	06/20/98	Klickitat H	Klickitat River
Wells	SU Steelhead	98030	64,703	04/24/98	05/22/98	Wells H	Mid-Columbia River
	SU Steelhead	98031	251,300	04/24/98	05/22/98	Methow R	Mid-Columbia River
	SU Chinook	98032	540,000	06/04/98	06/15/98	Wells H	Mid-Columbia River
	Agency Total:		5,956,003				
			Yakama Tribe				
Lost Creek	Coho	98147	300,000	04/24/98	06/04/98	Naches R	Yakama River
Prosser	FA Chinook	98153	1,700,000	05/08/98	06/12/98	Prosser Acclim Pd	Yakama River
Roza	Coho	98150	690,000	04/30/98	05/30/98	Roza Acclim Pd	Yakama River
	Agency Total:		2,690,000				
	Total Release:		11,881,002				

Hatchery Release Summary
Schedule for Next Two Weeks
From 06/05/98 to 06/18/98

Hatchery	Species	FPC LotID	Number Released	Release Dates Begin	End	Release Site	River Name
			WDFW				
Priest Rapids	FA Chinook	98140	6,700,000	06/15/98	06/25/98	Priest Rapids H	Mid-Columbia River
Ringold	FA Chinook	98145	3,500,000	06/15/98	06/25/98	Ringold Springs H	Mid-Columbia River
	Agency Total:		10,200,000				
	Total Release:		10,200,000				

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			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
5/22	119	119	119	24	109	110	111	24	109	109	110	24	109	110	110	23	106	106	107	20	109	109	109	23
5/23	119	119	120	24	107	109	109	24	108	108	109	24	108	109	109	22	---	---	---	0	109	109	109	23
5/24	119	120	121	24	108	109	110	24	108	108	109	24	109	109	109	23	---	---	---	0	108	109	109	23
5/25	119	119	120	24	108	108	109	24	108	108	109	24	109	109	109	23	---	---	---	0	108	109	109	23
5/26	117	118	118	24	108	108	109	24	108	109	109	24	109	109	109	23	106	106	106	7	107	108	109	23
5/27	119	120	122	24	109	110	110	24	108	108	110	24	107	108	108	23	104	105	105	23	107	108	108	23
5/28	123	123	125	24	110	110	110	24	107	108	108	24	107	107	108	23	104	104	106	21	107	107	108	22
5/29	124	125	125	24	110	111	111	24	108	108	109	24	108	108	109	23	105	105	106	22	109	109	112	23
5/30	124	124	125	24	109	110	110	24	109	109	110	24	107	107	108	23	105	106	106	22	111	113	116	23
5/31	124	125	126	24	110	110	111	24	109	109	109	24	108	109	110	23	106	107	107	23	111	111	112	23
6/1	124	124	125	24	111	111	111	24	110	111	112	24	110	110	110	23	107	107	108	22	115	116	118	23
6/2	124	125	126	24	110	110	111	24	110	111	111	21	110	110	111	23	108	108	109	21	116	118	120	23
6/3	125	126	127	24	109	110	111	24	110	111	113	24	111	111	112	23	109	109	110	22	117	118	121	22
6/4	123	123	125	24	110	110	110	24	108	108	109	24	110	111	112	23	107	108	109	23	114	115	118	23

Total Dissolved Gas Saturation Data at Mid Columbia Sites

	Tlwtr. Rocky R.				Rock Island				Tlwtr. Rock Island				Wanapum				Tlwtr Wanapum				Priest Rapids			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
5/22	110	110	110	23	108	109	109	23	117	117	118	23	---	---	---	0	---	---	---	0	---	---	---	0
5/23	109	109	110	23	107	108	108	23	118	118	119	23	---	---	---	0	---	---	---	0	---	---	---	0
5/24	109	109	109	23	107	107	108	23	118	119	119	23	---	---	---	0	---	---	---	0	---	---	---	0
5/25	109	109	109	23	107	107	108	23	117	118	119	23	---	---	---	0	---	---	---	0	---	---	---	0
5/26	109	109	109	23	107	107	107	23	117	117	119	23	---	---	---	0	---	---	---	0	---	---	---	0
5/27	109	109	110	23	106	106	106	23	116	117	118	23	---	---	---	0	---	---	---	0	---	---	---	0
5/28	109	111	114	22	107	108	111	22	116	116	117	22	---	---	---	0	---	---	---	0	---	---	---	0
5/29	113	115	120	23	112	113	114	23	118	120	122	23	---	---	---	0	---	---	---	0	---	---	---	0
5/30	116	118	123	23	114	115	116	23	121	122	124	23	---	---	---	0	---	---	---	0	---	---	---	0
5/31	115	117	120	23	115	116	117	23	121	122	123	23	---	---	---	0	---	---	---	0	---	---	---	0
6/1	120	122	125	23	117	118	119	23	123	124	125	23	---	---	---	0	---	---	---	0	---	---	---	0
6/2	121	124	127	23	120	122	123	23	125	126	127	23	---	---	---	0	---	---	---	0	---	---	---	0
6/3	121	122	125	21	122	123	125	22	125	127	128	22	---	---	---	0	---	---	---	0	---	---	---	0
6/4	116	118	123	23	117	120	121	23	121	124	125	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			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
5/22	---	---	---	0	101	102	104	24	101	101	102	24	115	116	117	24	105	105	106	24	115	116	117	24
5/23	---	---	---	0	105	107	109	24	102	103	103	24	119	120	121	24	104	104	105	24	122	125	127	24
5/24	---	---	---	0	109	109	109	24	104	104	105	24	118	119	120	24	105	106	107	24	123	125	125	24
5/25	---	---	---	0	107	109	109	24	102	103	104	24	116	116	117	24	106	107	107	24	120	120	121	24
5/26	---	---	---	0	105	106	106	24	102	102	102	24	116	118	119	24	106	106	107	24	124	127	131	24
5/27	---	---	---	0	109	109	111	12	103	104	105	24	119	119	120	24	105	105	105	11	132	132	133	12
5/28	---	---	---	0	106	108	109	24	103	104	104	24	107	115	119	24	107	108	109	24	130	132	132	24
5/29	---	---	---	0	103	104	108	24	101	102	103	24	96	97	98	24	109	109	110	24	125	125	126	24
5/30	---	---	---	0	108	108	109	24	103	103	104	24	98	99	99	21	107	107	108	24	125	125	126	24
5/31	---	---	---	0	107	108	109	24	103	104	105	24	99	100	101	24	108	110	110	24	123	123	124	24
6/1	---	---	---	0	103	103	104	24	102	103	103	24	100	103	104	22	109	110	110	24	121	123	124	24
6/2	---	---	---	0	105	107	109	24	102	104	105	24	102	104	105	24	109	109	110	24	119	121	125	24
6/3	---	---	---	0	109	110	110	24	104	105	106	24	103	104	105	24	108	108	110	24	120	123	126	24
6/4	---	---	---	0	104	104	104	24	102	102	103	24	102	103	104	24	108	108	110	24	117	117	121	24

[1] Data provided by the Corps of Engineers.

[2] Dissolved gas readings and averages have been rounded to the nearest integer.

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

Total Dissolved Gas Saturation Data at Snake Sites

	Little Goose				Tlwtr L. Goose				Lower Mon.				Tlwtr L. Mon				Ice Harbor				Tlwtr Ice Harbor			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
5/22	108	108	109	24	118	120	120	24	114	116	118	24	122	124	126	24	113	114	114	23	120	120	121	23
5/23	108	109	110	24	122	123	126	20	115	117	117	24	128	129	132	24	114	115	117	24	122	123	126	24
5/24	115	118	121	24	124	125	126	24	123	126	126	24	130	131	131	24	121	123	124	24	125	127	127	24
5/25	119	120	121	24	122	122	123	24	124	125	126	18	128	128	129	18	123	124	124	24	122	122	124	24
5/26	116	117	117	24	124	126	127	24	121	121	122	24	129	131	132	24	121	121	122	15	122	122	123	15
5/27	115	115	116	12	128	128	129	12	122	122	124	12	132	132	133	12	120	120	121	12	127	127	128	12
5/28	124	125	127	24	129	129	129	24	130	131	132	24	133	133	134	24	127	128	129	24	129	131	132	24
5/29	126	127	128	24	127	129	130	24	129	130	131	24	131	132	133	24	127	129	130	24	125	127	129	24
5/30	123	124	124	24	127	128	128	24	126	128	129	24	131	132	132	24	124	125	126	24	125	127	129	24
5/31	126	127	127	24	125	126	127	24	128	129	130	24	130	131	133	24	127	128	128	24	123	123	123	23
6/1	124	126	127	24	124	125	126	24	127	127	127	24	129	130	131	24	127	128	128	24	122	123	124	23
6/2	121	121	122	24	124	126	128	24	124	125	126	17	128	129	130	17	125	125	126	19	121	123	126	19
6/3	119	121	123	24	123	126	129	23	125	126	128	24	127	128	131	23	124	125	127	24	122	124	127	24
6/4	118	121	125	24	120	121	124	24	124	126	128	24	125	126	127	24	123	124	127	23	120	121	122	24

Total Dissolved Gas Saturation Data at Lower Columbia Sites

	McNary-Oregon				McNary-Wash.				Tlwtr McNary				John Day				Tlwtr John Day				The Dalles			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
5/22	110	110	111	24	109	110	110	24	120	120	121	24	111	111	111	23	114	119	121	24	110	110	111	23
5/23	109	109	111	24	109	110	110	24	119	120	121	24	109	109	110	23	118	120	122	23	109	111	112	23
5/24	110	110	111	24	111	112	113	24	121	121	122	24	108	108	109	23	120	120	122	22	111	112	113	23
5/25	111	112	112	24	112	113	113	24	120	121	122	24	108	108	108	23	120	120	122	23	112	114	116	23
5/26	112	113	113	23	113	113	114	23	121	121	121	23	109	110	110	23	119	120	121	23	110	111	112	23
5/27	111	111	111	12	111	111	112	12	124	124	127	12	109	109	110	23	123	124	125	24	110	112	114	23
5/28	113	116	117	24	111	112	113	24	126	128	128	24	109	110	111	23	124	126	127	24	115	116	118	23
5/29	117	118	119	24	114	116	116	24	127	128	128	24	111	112	114	23	124	125	126	24	116	117	117	23
5/30	116	117	117	24	112	113	114	24	127	127	127	24	115	115	116	23	126	126	127	24	114	115	115	23
5/31	114	114	114	2	110	110	110	2	126	126	126	2	117	118	119	23	124	124	127	24	116	117	117	23
6/1	120	120	121	24	117	118	118	24	125	126	126	24	121	121	122	23	124	125	127	24	117	117	118	23
6/2	119	119	120	14	117	118	119	15	128	128	128	15	120	121	122	23	122	123	125	23	117	118	119	23
6/3	118	119	120	24	117	117	117	24	128	129	129	24	119	120	120	23	124	125	126	24	119	119	120	23
6/4	117	118	119	24	117	117	118	24	127	128	128	24	120	121	122	23	123	123	124	24	116	116	117	23

Total Dissolved Gas Saturation Data at Lower Columbia Sites

	Dnstr T. Dalles				Bonneville				Warrendale				Skamania				Camas\Wash.				Wauna Mill			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
5/22	111	112	114	23	111	112	114	23	116	118	121	23	116	118	120	23	117	118	119	24	111	112	112	24
5/23	110	112	113	23	110	112	113	23	116	118	120	23	115	117	119	23	114	115	117	24	112	112	113	24
5/24	113	114	120	24	113	114	115	23	118	120	121	22	117	118	120	23	115	117	119	23	111	112	113	23
5/25	114	115	116	23	114	115	116	23	120	122	123	23	120	123	124	23	118	120	121	24	110	110	111	24
5/26	114	115	116	23	100	101	101	24	119	120	122	23	118	120	121	23	117	119	121	24	111	111	111	24
5/27	113	114	115	23	100	101	101	24	120	121	123	23	119	120	121	23	116	117	118	24	111	111	112	24
5/28	115	116	120	23	100	101	101	24	122	123	125	23	121	122	124	23	119	119	120	24	112	112	113	24
5/29	120	122	124	24	119	119	120	23	125	126	126	23	124	125	125	23	121	122	122	24	112	113	114	24
5/30	122	123	124	24	116	117	118	23	123	124	125	23	123	123	124	23	122	122	123	24	112	112	113	24
5/31	121	122	122	24	121	122	122	23	126	127	127	23	125	127	127	23	123	125	126	24	114	115	116	24
6/1	121	122	123	24	120	121	121	23	126	126	127	23	125	125	126	23	124	125	125	23	114	114	114	23
6/2	121	122	122	24	117	118	119	23	124	124	125	23	123	124	125	23	123	123	125	23	115	116	116	23
6/3	122	123	124	24	118	118	119	23	125	126	127	23	124	125	126	23	123	124	125	24	115	115	115	24
6/4	121	122	122	24	117	118	120	23	124	124	125	23	123	124	124	23	122	122	122	24	114	114	114	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)
05/22/98	1	2	4	0	3,017	4,082	2,954	545	23,923	24,570	4,145
05/23/98	---	---	---	19	6,426	3,467	5,445	546	15,331	24,990	5,172
05/24/98	---	---	---	---	3,596	4,060	3,884	696	23,449	20,502	2,267
05/25/98	---	---	0	---	4,059	5,431	2,680	422	18,400	22,030	2,562
05/26/98	---	---	---	---	2,756	5,320	2,221	694	10,830	15,336	1,905
05/27/98	---	---	---	---	1,522	6,790	6,563	631	13,998	15,198	1,421
05/28/98	---	---	---	---	978	3,842	3,787	366	11,720	10,939	2,995
05/29/98	---	---	---	---	524	1,546	1,167	445	18,601	11,515	2,968
05/30/98	---	---	---	---	398	1,106	1,250	773	37,151	10,148	2,666
05/31/98	---	---	---	---	110	747	384	818	16,111	11,014	2,009
06/01/98	---	---	---	---	194	509	320	508	8,961	21,965	2,382
06/02/98	---	---	---	---	179	636	280	644	11,706	99,226	2,182
06/03/98	---	---	---	---	127	395	109	393	7,442	28,200	3,073
06/04/98	---	---	---	---	220	349	248	292	5,069	22,091	---
Total:	1	2	4	19	24,106	38,280	31,292	7,773	222,692	337,724	35,747
# Days:	1	1	2	2	14	14	14	14	14	14	13
Average:	1	2	2	10	1,722	2,734	2,235	555	15,907	24,123	2,750

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
05/22/98	0	5	12	4	2,030	1,257	565
05/23/98	---	---	---	42	3,319	1,158	622
05/24/98	---	---	---	---	5,308	1,658	185
05/25/98	---	---	2	---	5,196	2,740	824
05/26/98	---	---	---	---	2,518	3,473	395
05/27/98	---	---	---	---	1,155	3,558	2,207
05/28/98	---	---	---	---	1,626	3,630	2,799
05/29/98	---	---	---	---	615	1,335	1,030
05/30/98	---	---	---	---	448	1,449	1,369
05/31/98	---	---	---	---	37	1,223	703
06/01/98	---	---	---	---	194	707	245
06/02/98	---	---	---	---	102	369	245
06/03/98	---	---	---	---	111	531	73
06/04/98	---	---	---	---	117	400	186
Total:	0	5	14	46	22,776	23,488	11,448
# Days:	1	1	2	2	14	14	14
Average:	0	5	7	23	1,627	1,678	818

Wild Subyearling Chinook

Date	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
05/22/98	0	0	0
05/23/98	0	0	0
05/24/98	0	0	277
05/25/98	0	0	49
05/26/98	61	0	49
05/27/98	898	90	185
05/28/98	748	200	329
05/29/98	258	0	102
05/30/98	298	0	298
05/31/98	438	143	256
06/01/98	355	140	171
06/02/98	275	0	35
06/03/98	127	82	214
06/04/98	205	65	93
Total:	3,663	720	2,058
# Days:	14	14	14
Average:	262	51	147

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)
05/22/98	0	0	0	0	0	0	0	6	4,031	0	3,938
05/23/98	---	---	---	0	0	0	0	5	2,988	98	3,644
05/24/98	---	---	---	---	0	0	0	3	2,996	0	3,939
05/25/98	---	---	0	---	0	0	0	0	4,515	490	5,101
05/26/98	---	---	---	---	0	0	0	1	5,381	0	3,973
05/27/98	---	---	---	---	0	0	62	0	13,108	525	6,074
05/28/98	---	---	---	---	0	0	0	3	14,626	146	10,682
05/29/98	---	---	---	---	60	0	102	11	22,923	484	12,178
05/30/98	---	---	---	---	0	0	0	26	42,602	70	16,183
05/31/98	---	---	---	---	0	0	0	17	52,366	1,398	11,412
06/01/98	---	---	---	---	97	35	34	14	52,296	4,755	27,435
06/02/98	---	---	---	---	97	0	70	10	50,682	29,228	53,635
06/03/98	---	---	---	---	32	0	71	13	129,108	11,537	87,738
06/04/98	---	---	---	---	29	0	31	6	84,390	6,080	---
Total:	0	0	0	0	315	35	370	115	482,012	54,811	245,932
# Days:	1	1	2	2	14	14	14	14	14	14	13
Average:	0	0	0	0	23	3	26	8	34,429	3,915	18,918

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)
05/22/98	0	0	0	1	5,683	1,128	895	450	6,750	46,858	7,171
05/23/98	---	---	---	3	11,744	2,187	2,022	330	2,988	32,242	8,689
05/24/98	---	---	---	---	11,131	3,349	2,127	341	4,070	37,160	6,184
05/25/98	---	---	0	---	8,769	4,131	1,283	341	3,599	29,618	10,110
05/26/98	---	---	---	---	4,883	6,389	839	745	2,747	14,591	8,816
05/27/98	---	---	---	---	5,702	10,350	2,905	1,245	4,527	18,579	9,112
05/28/98	---	---	---	---	2,575	7,087	4,446	1,215	2,790	10,427	16,820
05/29/98	---	---	---	---	1,548	2,429	3,455	2,762	7,886	6,856	16,182
05/30/98	---	---	---	---	1,228	1,499	1,607	4,445	8,795	11,503	10,511
05/31/98	---	---	---	---	876	1,192	1,343	4,412	4,750	6,605	13,017
06/01/98	---	---	---	---	1,098	1,410	754	3,242	5,314	8,620	18,211
06/02/98	---	---	---	---	1,147	719	982	5,429	5,164	47,015	16,335
06/03/98	---	---	---	---	1,030	576	927	4,691	7,636	5,684	34,678
06/04/98	---	---	---	---	1,129	441	434	1,984	3,463	9,236	---
Total:	0	0	0	4	58,543	42,887	24,019	31,632	70,479	284,994	175,836
# Days:	1	1	2	2	14	14	14	14	14	14	13
Average:	0	0	0	2	4,182	3,063	1,716	2,259	5,034	20,357	13,526

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)
05/22/98	12	565	20	153	46,544	8,498	8,793	191	4,813	13,768	6,052
05/23/98	---	---	---	664	58,838	16,585	18,046	117	4,628	14,014	3,685
05/24/98	---	---	---	---	82,195	20,206	14,888	131	4,146	12,889	3,169
05/25/98	---	---	70	---	126,494	44,905	17,619	97	4,253	11,749	2,954
05/26/98	---	---	---	---	50,103	75,197	14,266	160	2,750	6,669	1,561
05/27/98	---	---	---	---	33,958	61,022	38,877	218	5,048	5,319	3,282
05/28/98	---	---	---	---	44,946	44,769	32,275	161	3,880	12,677	4,671
05/29/98	---	---	---	---	23,334	13,541	18,575	147	9,395	17,000	10,302
05/30/98	---	---	---	---	15,341	25,519	21,016	204	8,797	7,368	7,083
05/31/98	---	---	---	---	17,197	10,764	9,270	43	7,865	10,365	6,472
06/01/98	---	---	---	---	12,597	11,580	8,277	13	5,663	16,382	8,673
06/02/98	---	---	---	---	11,331	10,057	5,715	17	8,155	15,289	2,394
06/03/98	---	---	---	---	7,730	3,975	4,194	19	2,644	12,844	7,627
06/04/98	---	---	---	---	7,906	2,668	3,472	28	2,226	8,307	---
Total:	12	565	90	817	538,514	349,286	215,283	1,546	74,263	164,640	67,925
# Days:	1	1	2	2	14	14	14	14	14	14	13
Average:	12	565	45	409	38,465	24,949	15,377	110	5,305	11,760	5,225

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)
05/22/98	3	125	19	24	7,848	1,481	2,913	64	1,044	13,160	3,026
05/23/98	---	---	---	61	8,984	1,910	3,345	85	773	8,232	3,392
05/24/98	---	---	---	---	16,439	3,556	2,219	72	1,202	8,065	2,751
05/25/98	---	---	23	---	19,810	6,232	2,435	73	982	8,322	1,500
05/26/98	---	---	---	---	9,902	12,629	2,863	81	729	4,181	1,561
05/27/98	---	---	---	---	6,876	11,749	7,628	119	1,545	3,628	2,792
05/28/98	---	---	---	---	7,968	10,732	8,234	88	1,224	8,580	3,010
05/29/98	---	---	---	---	3,988	3,388	4,085	113	3,143	9,155	4,899
05/30/98	---	---	---	---	2,430	4,485	4,882	0	3,894	3,041	4,097
05/31/98	---	---	---	---	1,753	2,384	1,087	67	2,856	5,024	6,773
06/01/98	---	---	---	---	1,647	1,692	1,348	16	2,998	8,129	3,269
06/02/98	---	---	---	---	1,223	1,603	631	52	1,918	9,543	905
06/03/98	---	---	---	---	1,045	988	763	74	616	6,787	4,774
06/04/98	---	---	---	---	1,012	786	465	37	494	2,831	---
Total:	3	125	42	85	90,925	63,615	42,898	941	23,418	98,678	42,749
# Days:	1	1	2	2	14	14	14	14	14	14	13
Average:	3	125	21	43	6,495	4,544	3,064	67	1,673	7,048	3,288

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)
05/22/98	0	0	0	24	812	458	482	3	1,127	3,195	166
05/23/98	---	---	---	27	881	288	700	5	193	392	230
05/24/98	---	---	---	---	0	213	0	5	452	528	44
05/25/98	---	---	0	---	2,436	322	247	9	654	0	92
05/26/98	---	---	---	---	1,843	928	99	16	448	457	81
05/27/98	---	---	---	---	1,173	2,893	804	134	709	583	490
05/28/98	---	---	---	---	831	2,317	2,635	94	480	128	557
05/29/98	---	---	---	---	218	314	915	53	1,148	343	252
05/30/98	---	---	---	---	205	564	1,667	75	2,138	0	62
05/31/98	---	---	---	---	146	337	575	155	1,463	250	72
06/01/98	---	---	---	---	242	325	582	55	348	31	0
06/02/98	---	---	---	---	275	204	526	63	719	849	160
06/03/98	---	---	---	---	95	82	357	32	727	153	0
06/04/98	---	---	---	---	205	16	527	33	371	789	---
Total:	0	0	0	51	9,362	9,261	10,116	732	10,977	7,698	2,206
# Days:	1	1	2	2	14	14	14	14	14	14	13
Average:	0	0	0	26	669	662	723	52	784	550	170

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)
05/22/98	0	0	0	0	0	0	0	34	17,443	13,616	4,353
05/23/98	---	---	---	0	0	0	0	52	12,528	18,032	2,638
05/24/98	---	---	---	---	0	0	92	31	9,226	19,673	2,553
05/25/98	---	---	0	---	0	0	0	79	8,116	13,463	1,708
05/26/98	---	---	---	---	92	51	0	221	5,664	4,672	1,135
05/27/98	---	---	---	---	0	90	124	81	6,989	8,991	514
05/28/98	---	---	---	---	21	200	165	57	3,957	4,573	1,682
05/29/98	---	---	---	---	20	0	0	198	13,093	6,251	1,344
05/30/98	---	---	---	---	0	0	0	88	10,428	4,240	577
05/31/98	---	---	---	---	0	99	64	29	6,340	2,629	673
06/01/98	---	---	---	---	0	35	0	17	5,669	3,988	1,786
06/02/98	---	---	---	---	16	0	0	27	5,044	10,242	905
06/03/98	---	---	---	---	0	0	0	19	4,498	8,925	1,646
06/04/98	---	---	---	---	0	32	31	7	4,698	4,038	---
Total:	0	0	0	0	149	507	476	940	113,693	123,333	21,514
# Days:	1	1	2	2	14	14	14	14	14	14	13
Average:	0	0	0	0	11	36	34	67	8,121	8,810	1,655

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 June 04, 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	37,415	875	113,813	961	81,891	2,833	812	33	3,593	34	1,723	134						
TDA	24,482	503	71,036	385	49,124	1,797	217	10	930	6	512	41						
JDA	22,285	409	62,360	336	37,607	1,432												
MCN	18,805	302	55,228	386	35,379	1,488												
IHR	11,427	117	37,334	79	18,456	539												
LMN	9,012	72	31,344	391	16,585	558												
LGS	8,440	62	31,039	85	n/a	n/a												
LWG	7,554	50	26,562	45	12,719	377												
PRD	3,816	22	5,553	10	9,899	117												
RIS	2,806	39	4,337	22	7,223	90												
RRH	650	34	1,310	1	1,525	15												
WEL	1	1	607	13	767	15												

	Coho						Sockeye			Steelhead		
	1998		1997		10-Yr Avg.				10-Yr			10-Yr
	Adult	Jack	Adult	Jack	Adult	Jack	1998	1997	Avg.	1998	1997	Avg.
BON	0	0	0	0	0	0	11	36	2	3,324	5,676	5,954
TDA	0	0	0	0	0	0	2	16	2	1,209	1,318	2,242
JDA	0	0	0	0	0	0	0	10	1	7,376	3,247	3,359
MCN	0	0	0	0	0	0	0	0	1	1,739	1,725	3,100
IHR	0	0	0	0	0	0	0	0	0	1,807	1,411	3,259
LMN	0	0	0	0	0	0	0	0	0	1,397	1,267	2,906
LGS	0	0	0	0	na	na	0	0	na	2,029	1,411	na
LWG	0	0	0	0	0	0	0	0	0	4,159	3,640	6,306
PRD	0	1	0	0	0	0	1	1	17	21	22	74
RIS	0	0	0	0	0	0	0	1	4	34	38	145
RRH	0	0	0	0	1	0	0	0	0	89	55	87
WEL	0	0	0	0	0	0	0	17	0	6	37	38

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 June 03.

1998 totals at LGS are based on video counts accumulated through June 02.

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.

Transportation Summary Report

Two-Week Transportation Summary from 5/22/98 to 06/04/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	29,320	2,220	382,840	36,360	5,850	456,590
Bypassed	580	0	4,140	0	0	4,720
Trucked	0	0	0	0	0	0
Barged	30,047	2,208	407,923	38,213	6,260	484,651
Total Transported	**30,047**	**2,208**	**407,923**	**38,213**	**6,260**	**484,651**
LITTLE GOOSE DAM						
Collected	36,696	408	240,998	24,718	5,476	308,296
Bypassed	0	0	0	0	0	0
Trucked	0	0	0	0	0	0
Barged	41,296	407	245,418	25,584	5,520	318,225
Total Transported	**41,296**	**407**	**245,418**	**25,584**	**5,520**	**318,225**
LOWER MONUMENTAL DAM						
Collected	23,554	1,270	138,740	12,765	5,575	181,904
Bypassed	860	179	9,739	997	639	12,414
Trucked	0	0	0	0	0	0
Barged	24,866	1,086	137,751	12,555	5,482	181,740
Total Transported	**24,866**	**1,086**	**137,751**	**12,555**	**5,482**	**181,740**
MCNARY DAM						
Collected	101,775	201,461	43,073	31,309	57,439	435,057
Bypassed	92,245	95,680	37,035	24,895	51,081	300,936
Trucked	7,035	70,968	4,888	4,978	4,115	91,984
Barged	0	0	0	0	0	0
Total Transported	**7,035**	**70,968**	**4,888**	**4,978**	**4,115**	**91,984**
PROJECT TOTALS						
Collected	191,345	205,359	805,651	105,152	74,340	1,381,847
Bypassed	93,685	95,859	50,914	25,892	51,720	318,070
Trucked	7,035	70,968	4,888	4,978	4,115	91,984
Barged	96,209	3,701	791,092	76,352	17,262	984,616
Total Transported	**103,244**	**74,669**	**795,980**	**81,330**	**21,377**	**1,076,600**

Cumulative Transportation Summary through 06/04/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	1,496,067	4,680	4,940,623	144,074	47,260	6,632,704
Bypassed	102,011	33	124,023	1,425	0	227,492
Trucked	24,303	46	33,352	93	10	57,804
Barged	1,443,891	4,596	4,827,101	142,367	47,195	6,465,150
Total Transported	**1,468,194**	**4,642**	**4,860,453**	**142,460**	**47,205**	**6,522,954**
LITTLE GOOSE DAM						
Collected	882,404	408	1,475,064	45,504	15,329	2,418,709
Bypassed	0	0	0	0	0	0
Trucked	568	0	1,097	5	0	1,670
Barged	870,465	407	1,469,939	45,083	15,201	2,401,095
Total Transported	**871,033**	**407**	**1,471,036**	**45,088**	**15,201**	**2,402,765**
LOWER MONUMENTAL DAM						
Collected	488,443	1,292	927,441	25,782	12,335	1,455,293
Bypassed	4,255	189	11,667	1,008	639	17,758
Trucked	797	0	780	0	0	1,577
Barged	482,281	1,098	914,469	24,761	11,692	1,434,301
Total Transported	**483,078**	**1,098**	**915,249**	**24,761**	**11,692**	**1,435,878**
MCNARY DAM						
Collected	1,015,559	228,662	322,242	115,669	500,811	2,182,943
Bypassed	1,004,308	122,732	316,015	109,189	492,648	2,044,892
Trucked	7,035	70,968	4,888	4,978	4,115	91,984
Barged	0	0	0	0	0	0
Total Transported	**7,035**	**70,968**	**4,888**	**4,978**	**4,115**	**91,984**
PROJECT TOTALS						
Collected	3,882,473	235,042	7,665,370	331,029	575,735	12,689,649
Bypassed	1,110,574	122,954	451,705	111,622	493,287	2,290,142
Trucked	32,703	71,014	40,117	5,076	4,125	153,035
Barged	2,796,637	6,101	7,211,509	212,211	74,088	10,300,546
Total Transported	**2,829,340**	**77,115**	**7,251,626**	**217,287**	**78,213**	**10,453,581**