



Fish Passage Center

Weekly Report #98 - 10

May 22, 1998

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SUMMARY OF EVENTS:

Water Supply. Precipitation for the October through May period continues to vary from 76% at Flathead to 123% at Klamath basin and 130% at Harney/Malheur basin. Most of the precipitation in the basin continues to fall in the 80% to 110% range. Precipitation distribution for May 1 through 19 continues to show high variations, with the highest precipitation on the Snake River Plain at 358% and Klamath Basin at 353% and the lowest in the NW Slope Washington Cascades. The Snake River basin and Upper Deschutes/Crooked continue to be the areas with the highest precipitation, in the range of 246% to 358%. Precipitation in the Columbia above the Grand Coulee was 78%, the Columbia above the Dalles was 128% of average and the Snake River above Ice Harbor was 215% of average.

System Storage. The flows in the system continued to be high during last week. High precipitation with melting runoff in the Snake Basin caused reservoirs to be full, or almost full. The upper Columbia reservoirs are in refill at a much slower rate this season.

A summary of actual elevations is shown in the following table:

Reservoir	Actual Elev. [ft] 5/21/98	Max. Reservoir Pool [ft]
Libby	2425.88	2459.0
Hungry Horse	3541.02	3560.0
Grand Coulee	1280.90	1290.0
Brownlee	2076.6	2077.0
Dworshak	1595.73	1600.0

- Libby was operated to provide 15 kcfs at Bonners Ferry during May 15 through 17, with an outflow of 6 kcfs. On Monday, May 18, the outflow at Libby was increased gradually to full powerhouse capacity for 4 to 5 days. The releases after May 22 will be reevaluated and gradually decreased to flows to maintain 15 kcfs at Bonners Ferry.
- Hungry Horse continues to be at a minimum outflow of about 170 cfs to 270 cfs, controlling the flow of 3.5 kcfs at Columbia Falls. It continues to refill to the BiOp required end of June elevation.
- Grand Coulee will refill to 1285 ft by the end of the month and support the average outflow at Priest Rapids of 135 kcfs.
- Brownlee is full. Increased precipitation in the Snake basin increased inflows to the reservoir up to 66 kcs. The reservoir is currently passing inflow.
- Dworshak will continue with outflows of 6 to 9 kcfs, as the reservoir is projected to be at an elevation no higher than 1597 ft by the end of May.

Upper Snake reservoirs:

Although the system is in the irrigation season, the outflow from the reservoirs is well beyond the irrigation demands because of the increased precipitation in the basin. The system is operated for flood control.

Jackson Lake was passing inflow to 4.5 kcfs during last week and it is expected to continue with similar flows during next week. Currently the reservoir is 86% full.

Palisades was in slow refill during last week and it is expected to pass inflow to the end of next week. Currently, the outflow is 14.45 kcfs and the reservoir is 69% full.

American Falls is full and is passing inflow of 20.9 kcfs.

Milner flow at the lowest point of the Upper Snake system is peaking at 15.4 kcfs. Irrigation withdrawal upstream at Minidoka has decreased to about 5 kcfs.

System Streamflow The weekly average flows in the Snake River continued to peak during last week while slowly receding in the mid Columbia. The summary of average weekly flows for run of the river projects during the May 8 through 21 period is shown in the following Table:

Project	May 8-14	May 15-21
Priest Rapids	195.6 kcfs	180.8 kcfs
McNary	327.6 kcfs	310.9 kcfs
Lower Granite	125.6 kcfs	125.7 kcfs
Bonneville	343.9 kcfs	326.8 kcfs

Spill. In general, spill volumes were relatively stable over the past week. Spill at Lower Granite Dam averaged 32 kcfs per day. The river flows continued high enough throughout the week to result in daytime spill at Little Goose and Lower Monumental dams. Spill at Ice Harbor Dam continued on a 24-hour basis. Spill averaged 33.4 kcfs, 27.6 kcfs, and 65.9 kcfs at Little Goose, Lower Monumental and Ice Harbor dams, respectively.

Continued high flows in the lower Columbia resulted in 24-hour spill at McNary and John Day dams. The Biological Opinion includes a 24-hour spill program for both The Dalles and Bonneville dams. Spill averaged slightly less than last week and was 139.6 kcfs at McNary Dam, 109.1 kcfs at John Day Dam, 143.7 kcfs at The Dalles Dam (averaging 45% of total flow), and 117 kcfs at Bonneville Dam over the past week. Spill for fish passage continues at all the Mid-Columbia projects.

Total Dissolved Gas Supersaturation and gas Bubble Trauma Monitoring: Total dissolved gas below Lower Granite Dam remained well below the gas cap, since spill is limited due to the

surface collector research. Total dissolved gas levels are being managed to the gas waivers below Little Goose, Lower Monumental, and Ice Harbor dams to the extent possible. The gas levels in the lower Columbia are being managed as close to the gas waivers as possible. Limited data is available for the Mid-Columbia sites at this time, but levels at the sites monitored show dissolved gas levels below the waiver limits. Gas bubble trauma monitoring has occurred at all sites over the past week. Few juvenile fish are showing signs throughout the system, with the percentage of signs remaining well below the action criteria. No adult salmon were reported with signs of GBT during the last reporting period.

Smolt Monitoring. *Snake River Drainage.* Hatchery steelhead, which continue to dominate the collections in the traps on the Salmon, Imnaha, Grande Ronde, and Snake rivers this week, showed an increase in numbers at the Imnaha River trap from last week's level. The normal decreasing trend in passage indices for yearling chinook and steelhead continued at Lower Granite, Little Goose, and Lower Monumental dams. Hatchery sockeye passage indices began to decrease this week at these three dams.

Columbia River Drainage. The passage indices at Rock Island Dam have not yet begun a decreasing trend for yearling chinook, coho, and wild steelhead, and only during the latter half of this week has hatchery steelhead and wild sockeye passage indices begun to decrease. The trend in passage indices this week at McNary Dam has been one of increasing coho, unchanged yearling chinook, and decreasing wild and hatchery steelhead and sockeye. Similar trends in passage indices occurred at John Day and Bonneville dams for steelhead and sockeye, while both yearling chinook and coho passage indices remained little changed from last week's levels. Subyearling chinook from the Spring Creek Hatchery tule fall chinook release began passing Bonneville Dam on May 16.

Adult Fish Passage. At Bonneville Dam, daily counts of adult spring chinook ranged between 350 and 221 for the week ending May 21, with a cumulative total of 35,209. Of the adult spring chinook counted past Bonneville Dam, about 66% have been counted at The Dalles Dam and of these, about 16,600 have passed McNary Dam. The adult spring chinook count at Ice Harbor Dam (Snake River) through 5/21 totals 10,206 and 3,151 at Priest Rapids Dam (Mid-Columbia River). Adult salmon that have returned to the Yakama River and Ringold Hatchery would account for additional fish that have passed McNary Dam.

At Wells Dam, all or nearly all spring chinook will be trapped from the fish ladders and taken to hatcheries for later spawning. Therefore, Wells Dam adult spring chinook counts for 1998 should not be compared to previous years. Adult spring chinook counted at Rocky Reach Dam are normally destined for either the Entiat River or else pass over Wells Dam to the Methow River and tributaries. Spring chinook migrating to the Methow River will be intercepted at the trapping facilities at Wells Dam until June 28.

The steelhead run for the 1998/99 cycle is beginning to pass Bonneville Dam. Numbers of migrating adult fish have increased through the week to a high daily tally of 69 for the week.

Hatchery Releases. Hatchery releases of yearling fish are nearing completion for the year with final releases expected by the end of May or early June. Coho will be volitionally released through the month and into early June at Klickitat Hatchery and some acclimation ponds in the Yakama Basin.

Juvenile subyearling summer and fall chinook will be released from mid-May through late June from hatcheries and acclimation facilities. Initial release of subyearling fall chinook from the Yakama River (Prosser Pd) began on 5/8 with volitional emigration from the Pond this year. The screens were opened during the evening (twice per week for the first two weeks). The screens will be removed soon and remain out to allow volitional exit from the ponds for the remaining fish. The Priest Rapids and Ringold Hatchery

fall chinook will be released in June, as will the summer chinook from Wells and Turtle Rock Hatcheries. Subyearling fall chinook released in the Snake River will be 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 has begun with the Klickitat and Little White Salmon fall chinook scheduled for release in June.

Subyearling spring chinook were released in the Klickitat and Entiat rivers.

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
05/08/98	165.8	0.0	163.2	0.0	186.7	11.9	193.4	33.1	199.1	46.6	195.5	58.3	211.9	127.8
05/09/98	115.0	0.0	124.7	0.0	159.5	12.1	175.8	33.4	183.4	46.5	187.5	48.7	214.5	129.1
05/10/98	111.5	0.0	112.4	0.0	137.9	11.4	143.9	30.5	147.7	46.6	143.5	28.8	158.0	95.2
05/11/98	153.3	0.0	150.2	0.0	175.7	14.3	177.0	29.4	178.2	42.9	169.0	38.0	183.3	108.9
05/12/98	146.0	0.0	153.5	0.0	176.0	12.4	182.0	37.3	185.1	33.5	185.7	40.6	206.4	124.4
05/13/98	136.4	0.0	141.8	0.0	166.7	12.1	174.5	28.5	182.8	36.1	180.2	36.6	199.8	119.3
05/14/98	159.7	0.0	154.7	0.0	177.6	12.1	179.2	27.3	186.7	41.2	176.5	33.9	198.8	118.2
05/15/98	130.1	0.0	136.2	0.0	162.6	12.1	179.7	27.2	189.5	42.7	180.4	27.1	201.2	119.8
05/16/98	139.3	0.0	139.8	0.0	155.3	12.0	154.2	18.8	163.3	44.0	173.4	26.0	188.9	115.0
05/17/98	113.1	0.0	120.2	0.0	142.9	11.5	151.2	19.8	158.5	44.0	146.4	22.2	163.9	97.9
05/18/98	161.2	0.0	157.5	0.0	170.7	12.1	171.6	22.7	173.5	44.0	151.8	22.9	165.3	99.0
05/19/98	133.5	0.0	134.8	0.0	149.9	12.1	163.2	25.4	170.7	41.0	169.5	28.4	187.2	112.1
05/20/98	126.1	0.0	135.2	0.0	153.6	12.1	159.6	26.3	162.3	37.2	166.9	41.9	184.3	110.9
05/21/98	121.9	0.1	122.1	0.0	140.4	11.2	143.1	18.2	149.3	37.2	149.8	37.9	174.4	104.1

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
05/08/98	1.3	0.0	---	---	128.9	32.5	125.3	31.7	128.0	27.1	132.9	75.8
05/09/98	1.3	0.0	---	---	131.3	34.7	126.8	34.8	134.6	33.4	139.7	79.0
05/10/98	1.3	0.0	---	---	129.8	33.1	124.8	32.5	128.9	28.7	131.5	73.6
05/11/98	1.3	0.0	---	---	123.7	29.2	118.1	42.6	124.1	24.5	128.8	66.6
05/12/98	1.3	0.0	---	---	122.5	29.2	116.6	26.8	118.7	22.0	124.2	66.7
05/13/98	1.3	0.0	---	---	125.4	29.3	124.1	33.5	129.0	27.5	132.6	68.7
05/14/98	1.3	0.0	---	---	117.3	29.2	112.3	25.1	115.1	20.5	118.5	65.8
05/15/98	1.3	0.0	---	---	127.0	32.4	120.8	33.4	125.7	29.3	129.2	67.4
05/16/98	1.3	0.0	---	---	123.7	29.3	120.3	30.0	125.1	27.4	130.5	65.9
05/17/98	1.3	0.0	---	---	126.0	29.2	120.2	35.2	125.2	23.6	128.3	65.4
05/18/98	1.3	0.0	---	---	127.9	36.5	125.1	32.8	128.8	26.6	133.5	66.5
05/19/98	6.1	0.0	---	---	127.5	30.5	122.3	33.0	125.0	26.8	127.7	65.2
05/20/98	8.0	0.0	---	---	125.5	32.3	121.3	37.2	128.4	32.1	134.9	65.7
05/21/98	8.5	0.0	---	---	122.6	31.9	115.9	32.4	118.4	27.4	122.0	65.3

**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		
05/08/98	339.7	165.6	360.4	125.5	355.5	206.0	365.0	143.7	79.4	132.7
05/09/98	360.5	185.9	380.2	133.6	367.6	132.0	363.0	142.4	79.8	131.6
05/10/98	329.3	157.4	357.9	123.4	351.1	199.8	367.9	143.2	81.1	134.4
05/11/98	300.4	135.1	313.1	113.9	307.4	113.6	333.0	112.2	79.3	132.3
05/12/98	309.6	139.3	331.6	120.1	324.0	186.8	315.1	109.0	76.0	121.0
05/13/98	326.5	152.1	321.6	120.2	312.9	112.1	326.2	107.1	83.0	126.8
05/14/98	327.4	147.2	353.2	124.6	345.4	198.6	349.4	126.0	94.3	119.9
05/15/98	333.4	153.9	350.5	121.4	335.1	121.2	344.8	128.4	77.1	130.1
05/16/98	317.6	139.2	325.5	110.2	319.4	181.7	326.3	108.0	79.1	130.0
05/17/98	296.9	120.6	308.1	94.8	296.7	107.9	311.2	110.4	75.7	115.9
05/18/98	293.6	124.9	326.5	109.7	319.5	181.3	325.9	123.8	79.7	113.2
05/19/98	315.2	149.9	312.7	102.9	303.2	111.0	309.9	109.6	73.2	117.9
05/20/98	308.1	146.1	323.5	107.4	321.5	185.3	329.7	114.7	80.3	125.5
05/21/98	312.5	142.6	334.1	117.6	324.7	117.5	339.6	123.8	76.0	130.9

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
Lower Granite Dam													
	05/13/98	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/13/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/15/98	Yearling Chinook	100	4	2	2.00%	0.00%	2	0	0	0	2	1
	05/15/98	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	0	0
	05/18/98	Yearling Chinook	100	2	1	1.00%	0.00%	1	0	0	0	1	1
	05/18/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/20/98	Yearling Chinook	18	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/20/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Little Goose Dam													
	05/12/98	Yearling Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	05/13/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/14/98	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/15/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/16/98	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/16/98	Steelhead	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	05/19/98	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/20/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/21/98	Yearling Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
Lower Monumental Dam													
	05/13/98	Yearling Chinook	100	2	2	2.00%	0.00%	2	0	0	0	0	0
	05/13/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/15/98	Yearling Chinook	99	4	1	1.01%	0.00%	1	0	0	0	3	1
	05/15/98	Steelhead	100	4	3	3.00%	0.00%	3	0	0	0	1	1
	05/18/98	Yearling Chinook	100	4	1	1.00%	0.00%	1	0	0	0	3	1
	05/18/98	Steelhead	100	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/20/98	Yearling Chinook	100	4	1	1.00%	0.00%	1	0	0	0	3	1
	05/20/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Ice Harbor Dam													
	05/12/98	Yearling Chinook	77	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/12/98	Steelhead	100	3	1	1.00%	0.00%	1	0	0	0	2	1
	05/19/98	Yearling Chinook	60	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/19/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0

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													
	05/12/98	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/12/98	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/14/98	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/14/98	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/16/98	Yearling Chinook	100	3	0	0.00%	0.00%	0	0	0	0	3	1.3
	05/16/98	Steelhead	100	8	0	0.00%	0.00%	0	0	0	0	8	1
	05/19/98	Yearling Chinook	100	7	0	0.00%	0.00%	0	0	0	0	7	1
	05/19/98	Steelhead	100	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/21/98	Yearling Chinook	100	5	0	0.00%	0.00%	0	0	0	0	5	1
	05/21/98	Steelhead	71	4	0	0.00%	0.00%	0	0	0	0	4	1
John Day Dam													
	05/12/98	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	0	0
	05/13/98	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/14/98	Yearling Chinook	100	3	0	0.00%	0.00%	0	0	0	0	0	0
	05/15/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/16/98	Yearling Chinook	100	2	1	1.00%	0.00%	1	0	0	0	0	0
	05/17/98	Steelhead	100	2	2	2.00%	0.00%	2	0	0	0	0	0
	05/19/98	Yearling Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	05/20/98	Steelhead	100	7	7	7.00%	0.00%	7	0	0	0	0	0
	05/21/98	Yearling Chinook	100	3	3	3.00%	0.00%	3	0	0	0	0	0
	05/22/98	Steelhead	100	7	7	7.00%	0.00%	0	0	0	0	0	0
Bonneville Dam													
	05/12/98	Yearling Chinook	94	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/13/98	Steelhead	100	2	0	0.00%	0.00%	0	0	0	0	1	1
	05/14/98	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/15/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/16/98	Yearling Chinook	58	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/18/98	Steelhead	81	1	0	0.00%	0.00%	0	0	0	0	0	0
	05/19/98	Yearling Chinook	61	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/20/98	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/21/98	Yearling Chinook	72	2	1	1.38%	0.00%	1	0	0	0	1	1
Rock Island Dam													
	05/13/98	Yearling Chinook	100	4	3	3.00%	0.00%	1	2	0	0	1	1
	05/13/98	Steelhead	100	3	3	3.00%	0.00%	3	0	0	0	0	0
	05/15/98	Yearling Chinook	100	4	3	3.00%	0.00%	1	2	0	0	1	1
	05/15/98	Steelhead	100	3	2	2.00%	0.00%	2	0	0	0	1	1
	05/18/98	Yearling Chinook	100	5	4	4.00%	0.00%	4	0	0	0	1	1
	05/18/98	Steelhead	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	05/20/98	Yearling Chinook	100	14	12	12.00%	0.00%	10	2	0	0	2	1
	05/20/98	Steelhead	100	7	5	5.00%	0.00%	4	1	0	0	2	1

Hatchery Release Summary
Schedule for Last Two Weeks
From 05/08/98 to 05/21/98

Hatchery	Species	FPC LotID	Number Released	Release Dates		Release Site	River Name
				Begin	End		
Nez Perce Tribe							
Lyons Ferry	FA Chinook	98087	51,500	05/14/98	07/07/98	Pittsburg Landing	Snake River
	Agency Total:		51,500				
ODFW							
Big Canyon	SU Steelhead	98108	85,000	05/12/98	05/12/98	Big Canyon H	Grande Ronde River
	SU Steelhead	98107	85,000	05/13/98	05/27/98	Big Canyon H	Grande Ronde River
Li Sheep	SU Steelhead	98110	33,000	05/19/98	05/19/98	L Sheep Acclim Pd	Imnaha River
Wallowa	SU Steelhead	98105	200,000	05/06/98	05/20/98	Wallowa Acclim Pd	Grande Ronde River
	Agency Total:		403,000				
Umatilla Tribe							
Thornhollow	FA Chinook	98047	2,682,000	05/20/98	05/31/98	Thornhollow Acclim Pd	Umatilla River
	Agency Total:		2,682,000				
USFWS							
Entiat	SP Chinook	98064	160,000	05/14/98	05/15/98	Entiat H	Entiat River
Spring Creek	FA Chinook	98075	3,674,602	05/15/98	05/15/98	Spring Creek H	Columbia River
	Agency Total:		3,834,602				
WDFW							
Klickitat	Coho	98095	1,000,000	04/20/98	06/10/98	Klickitat H	Klickitat River
	SP Chinook	98094	275,000	05/20/98	05/30/98	Upper Klickitat R	Klickitat River
	Agency Total:		1,055,000				
Yakama Tribe							
Lost Creek	Coho	98148	200,000	04/20/98	05/10/98	Naches R	Yakama River
	Coho	98149	200,000	04/20/98	05/10/98	Naches R	Yakama River
	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:		3,090,000				
	Total Release:		11,336,102				

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

Hatchery	Species	FPC LotID	Number Released	Release Dates		Release Site	River Name
				Begin	End		
Nez Perce Tribe							
Lyons Ferry	FA Chinook	98086	31,500	06/01/98	07/06/98	Clearwater R	Clearwater River, Main Fk
	Agency Total:		31,500				
WDFW							
Klickitat	FA Chinook	98096	4,000,000	05/25/98	06/22/98	Klickitat H	Klickitat River
	Agency Total:		4,000,000				
	Total Release:		4,031,500				

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

Total Dissolved Gas Saturation Data at Upper Columbia Sites

Date	<u>Can. Boundary</u>			<u>Grand Coulee</u>				<u>Tlwr G. Coulee</u>				<u>Chief Joseph</u>				<u>Wells</u>				<u>Rocky Reach</u>				
	<u>24 h</u>		<u>12 h</u>	<u>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
5/8	115	115	118	9	107	107	108	8	107	107	108	12	108	109	109	23	106	106	107	15	108	108	109	23
5/9	116	118	119	24	108	108	108	24	107	107	108	24	108	108	108	23	106	106	107	22	107	108	108	23
5/10	117	118	119	24	108	108	108	24	107	107	108	24	108	109	109	23	107	107	107	14	106	107	108	23
5/11	117	118	120	24	108	109	109	24	107	108	108	24	109	109	110	23	107	107	108	21	108	109	110	22
5/12	117	119	120	24	109	109	109	24	108	108	109	15	109	109	110	23	108	108	108	20	110	110	111	23
5/13	116	118	119	24	109	109	109	24	---	---	---	0	109	109	110	23	107	108	108	22	110	110	110	22
5/14	113	115	119	24	111	116	134	23	108	108	109	8	108	108	109	23	107	107	108	12	109	109	109	23
5/15	---	---	---	0	---	---	---	0	107	107	108	24	107	107	108	23	105	105	105	16	106	106	108	23
5/16	---	---	---	0	---	---	---	0	107	108	108	24	107	108	108	23	105	105	106	23	106	106	106	23
5/17	---	---	---	0	---	---	---	0	107	107	108	23	108	108	108	23	106	106	106	23	105	106	107	23
5/18	---	---	---	0	---	---	---	0	107	107	107	24	107	107	107	23	105	105	105	11	106	107	108	21
5/19	119	119	121	24	110	110	111	16	107	108	108	24	107	108	108	23	---	---	---	0	107	107	108	22
5/20	118	119	120	24	110	111	111	24	108	108	109	24	108	108	109	23	106	106	106	13	108	108	109	23
5/21	118	119	120	24	108	110	111	24	108	109	109	24	108	109	110	23	106	106	106	7	108	108	109	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>				
	<u>24 h</u>		<u>12 h</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
5/8	---	---	---	0	110	110	110	23	120	120	122	23	---	---	---	0	---	---	---	0	---	---	---	0
5/9	---	---	---	0	110	111	111	23	121	122	122	23	---	---	---	0	---	---	---	0	---	---	---	0
5/10	---	---	---	0	108	109	111	22	123	123	124	22	---	---	---	0	---	---	---	0	---	---	---	0
5/11	---	---	---	0	111	111	111	22	122	123	124	22	---	---	---	0	---	---	---	0	---	---	---	0
5/12	114	114	115	7	112	113	113	23	120	122	124	23	---	---	---	0	---	---	---	0	---	---	---	0
5/13	112	113	114	22	112	113	114	22	117	117	117	22	---	---	---	0	---	---	---	0	---	---	---	0
5/14	111	112	113	23	110	110	111	23	116	116	117	23	---	---	---	0	---	---	---	0	---	---	---	0
5/15	109	110	112	23	109	110	111	22	115	115	115	22	---	---	---	0	---	---	---	0	---	---	---	0
5/16	109	109	110	23	109	109	110	23	115	116	116	23	---	---	---	0	---	---	---	0	---	---	---	0
5/17	109	110	110	23	108	108	109	23	115	116	116	23	---	---	---	0	---	---	---	0	---	---	---	0
5/18	109	109	109	21	108	109	111	21	116	117	118	21	---	---	---	0	---	---	---	0	---	---	---	0
5/19	110	110	115	22	109	109	110	22	118	119	120	22	---	---	---	0	---	---	---	0	---	---	---	0
5/20	111	111	112	23	110	110	110	23	118	119	119	23	---	---	---	0	---	---	---	0	---	---	---	0
5/21	110	111	111	21	109	110	110	21	118	118	119	21	---	---	---	0	---	---	---	0	---	---	---	0

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

Date	<u>Dwnstr P Rapids</u>			<u>Dworshak</u>				<u>Clearwater</u>				<u>Snake-Lewiston</u>				<u>Lower Granite</u>				<u>Tlwr L. Granite</u>				
	<u>24 h</u>		<u>12 h</u>	<u>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
5/8	---	---	---	0	112	112	113	12	103	104	105	24	103	104	104	24	104	105	105	24	112	113	113	24
5/9	---	---	---	0	111	111	112	24	103	103	103	24	102	102	102	24	104	104	104	24	112	112	113	24
5/10	---	---	---	0	108	108	109	24	103	104	105	24	103	104	105	24	103	104	104	24	112	113	113	24
5/11	---	---	---	0	108	110	118	24	103	104	105	24	103	104	105	24	104	105	106	24	111	112	112	24
5/12	---	---	---	0	108	110	111	24	103	103	104	24	103	104	105	24	106	107	108	24	112	112	112	24
5/13	---	---	---	0	109	109	110	24	102	102	102	24	101	101	102	24	105	105	106	24	113	113	113	24
5/14	---	---	---	0	107	108	108	24	101	102	102	24	101	101	102	24	104	104	105	24	113	113	113	8
5/15	---	---	---	0	106	107	107	24	102	103	103	24	102	103	104	24	103	103	103	24	113	113	114	13
5/16	---	---	---	0	107	108	109	24	102	103	104	24	102	104	105	24	104	105	106	24	112	113	113	22
5/17	---	---	---	0	107	107	107	24	101	101	102	24	101	101	102	24	105	105	106	24	112	113	113	24
5/18	---	---	---	0	106	107	108	24	102	103	104	24	102	104	105	24	105	105	106	24	114	115	116	24
5/19	---	---	---	0	106	106	111	11	102	103	104	24	103	104	105	24	107	107	108	24	113	113	114	24
5/20	---	---	---	0	---	---	---	0	102	102	103	24	102	104	105	24	108	108	108	24	113	114	115	24
5/21	---	---	---	0	102	102	103	13	100	101	101	24	108	110	111	24	106	106	107	24	113	113	113	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 High²

Total Dissolved Gas Saturation Data at Snake Sites

Date	<u>Little Goose</u>			<u>Tlwtr L. Goose</u>				<u>Lower Mon.</u>				<u>Tlwtr L. Mon</u>				<u>Ice Harbor</u>			<u>Tlwtr Ice Harbor</u>					
	<u>24 h</u>	<u>12 h</u>	<u>#</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
5/8	110	110	110	24	115	119	119	24	118	118	119	9	120	120	122	9	114	114	115	24	118	119	120	24
5/9	108	108	108	24	115	117	119	20	---	---	---	0	---	---	---	0	112	112	113	24	119	119	119	24
5/10	109	110	110	24	116	120	122	24	---	---	---	0	---	---	---	0	114	115	116	24	118	119	119	24
5/11	110	111	111	24	123	127	133	20	115	117	118	24	119	121	123	24	114	115	115	24	117	119	120	24
5/12	110	110	111	24	114	118	119	24	120	122	124	24	120	121	123	24	114	115	116	18	117	118	120	18
5/13	110	111	122	24	116	119	120	24	116	120	122	24	120	121	121	24	115	115	115	23	118	119	120	23
5/14	106	107	108	24	113	118	118	24	112	115	117	22	117	119	120	22	114	116	132	24	118	119	120	24
5/15	104	105	105	24	115	118	118	24	110	113	118	23	118	120	121	24	109	109	110	24	118	120	120	24
5/16	107	107	108	24	114	118	119	24	112	114	116	24	117	118	118	24	111	112	113	24	119	120	121	24
5/17	107	108	109	24	118	123	127	24	111	114	116	24	116	118	118	24	110	111	111	24	118	120	121	24
5/18	105	105	106	24	115	119	120	24	112	113	114	24	118	118	119	24	109	109	109	21	118	119	121	21
5/19	108	109	111	24	115	120	120	24	113	115	116	24	118	119	120	24	113	115	117	24	119	120	121	24
5/20	112	113	113	24	117	120	121	24	114	117	120	24	120	121	122	24	114	115	115	24	119	120	121	24
5/21	109	110	110	24	115	120	121	24	115	117	118	24	119	119	120	24	114	115	115	24	118	120	120	24

Total Dissolved Gas Saturation Data at Lower Columbia Sites

Date	<u>McNary-Oregon</u>			<u>McNary-Wash.</u>				<u>Tlwtr McNary</u>				<u>John Day</u>				<u>Tlwtr John Day</u>				<u>The Dalles</u>				
	<u>24 h</u>	<u>12 h</u>	<u>#</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
5/8	114	114	115	11	114	114	115	11	122	122	123	11	109	109	110	23	121	121	122	24	110	111	112	23
5/9	112	113	114	24	112	112	113	24	124	125	125	24	109	109	109	23	121	122	122	24	110	111	112	23
5/10	113	114	115	24	113	114	115	24	122	123	123	24	109	110	110	23	121	122	122	24	111	111	112	23
5/11	114	114	115	23	114	114	115	23	120	121	121	23	109	109	110	23	120	121	122	24	110	111	112	23
5/12	114	115	118	21	114	115	116	21	121	121	122	21	112	113	114	23	121	122	122	24	112	113	114	23
5/13	114	114	114	24	114	114	115	24	122	122	123	24	112	112	113	23	121	121	122	24	111	112	112	23
5/14	110	111	112	24	110	111	112	24	121	122	123	24	108	109	109	23	121	122	123	24	110	111	112	23
5/15	108	109	109	24	108	109	109	24	121	122	123	24	107	107	108	23	121	122	123	24	111	112	113	23
5/16	109	109	110	24	110	110	110	24	120	121	121	24	107	107	108	23	120	122	122	24	111	112	113	23
5/17	110	110	110	24	109	110	110	24	119	121	121	24	107	107	107	23	118	122	125	24	109	110	111	23
5/18	109	109	110	24	108	109	109	24	119	120	120	24	107	108	109	23	122	123	124	24	110	112	114	23
5/19	109	109	110	24	110	112	113	24	121	121	121	24	109	109	110	23	120	121	123	24	111	112	113	23
5/20	111	111	112	24	112	113	113	24	121	121	121	24	109	109	109	23	119	120	121	24	111	113	114	23
5/21	112	112	113	24	112	113	113	24	121	121	121	24	110	111	111	23	120	121	122	24	111	112	113	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>	<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
5/8	117	118	119	24	111	112	113	23	118	118	119	23	117	118	119	23	115	116	116	23	108	109	109	23
5/9	115	117	119	24	112	113	113	23	118	119	120	23	117	118	119	23	115	116	116	24	109	109	110	24
5/10	118	119	119	24	111	112	113	23	118	119	120	23	117	118	119	23	116	117	118	24	109	109	110	24
5/11	116	117	119	24	113	114	115	23	117	118	118	23	117	117	117	23	116	116	117	24	110	111	111	24
5/12	118	120	121	23	113	114	115	23	117	118	119	23	117	118	118	23	115	116	116	24	111	111	112	24
5/13	116	118	121	24	112	112	113	23	116	117	119	23	116	116	117	23	114	114	115	24	108	109	110	24
5/14	117	119	120	24	111	111	112	23	117	118	119	23	116	117	118	23	113	115	116	24	109	109	110	24
5/15	116	117	119	24	114	116	117	23	119	120	121	23	118	119	121	23	115	116	117	24	108	108	109	24
5/16	118	119	120	24	115	116	117	23	118	120	122	23	118	120	121	23	118	119	120	24	109	109	110	24
5/17	115	116	119	24	112	112	113	23	116	118	120	23	116	118	119	23	114	115	116	24	109	109	110	24
5/18	117	119	120	24	112	112	113	23	117	118	120	23	117	119	120	23	116	118	120	24	110	111	111	24
5/19	117	118	120	24	116	118	118	23	119	120	121	23	118	119	122	23	117	118	118	24	110	111	111	24
5/20	117	120	120	23	115	117	118	23	119	120	123	23	119	121	123	23	118	119	121	24	111	111	111	24
5/21	116	117	119	24	114	114	114	23	119	120	121	23	118	119	120	23	116	117	118	24	110	110	111	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

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)
05/08/98	---	0	8	87	33,354	38,586	29,754	852	43,283	51,090	7,618
05/09/98	---	---	---	---	51,033	55,448	35,580	549	32,437	21,888	11,350
05/10/98	---	---	---	---	56,917	40,108	26,181	250	40,183	33,493	10,261
05/11/98	---	0	2	7	24,101	39,932	18,801	425	40,434	26,138	5,717
05/12/98	---	5	16	40	19,213	21,282	11,565	643	64,241	23,411	4,248
05/13/98	---	4	3	38	21,693	22,713	18,550	879	28,259	29,434	5,656
05/14/98	---	0	1	22	23,080	21,142	15,933	850	40,966	35,976	14,647
05/15/98	---	1	---	9	19,231	26,095	10,740	684	41,842	39,559	5,572
05/16/98	---	---	---	---	7,331	20,603	5,660	807	49,243	30,774	8,138
05/17/98	---	---	---	---	4,310	17,138	13,367	486	41,113	27,272	12,168
05/18/98	1	1	0	0	5,862	11,177	9,292	367	33,470	40,720	4,792
05/19/98	1	0	0	6	3,264	6,961	5,366	518	48,032	36,742	3,697
05/20/98	1	2	3	2	1,996	7,199	3,565	861	30,198	27,634	4,909
05/21/98	---	0	0	0	2,433	6,493	2,442	976	27,066	32,529	4,395
Total:	3	13	33	211	273,818	334,877	206,796	9,147	560,767	456,660	103,168
# Days:	3	10	9	10	14	14	14	14	14	14	14
Average:	1	1	4	21	19,558	23,920	14,771	653	40,055	32,619	7,369

Date	Wild Yearling Chinook						
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
05/08/98	---	0	9	20	7,380	11,682	1,174
05/09/98	---	---	---	---	10,968	12,693	6,060
05/10/98	---	---	---	---	10,890	8,757	4,494
05/11/98	---	2	3	5	5,729	8,861	2,397
05/12/98	---	6	21	21	5,138	5,460	3,223
05/13/98	---	18	11	20	4,930	6,512	3,054
05/14/98	---	20	8	10	4,347	5,621	2,819
05/15/98	---	13	---	11	3,239	4,809	1,069
05/16/98	---	---	---	---	2,640	5,326	515
05/17/98	---	---	---	---	4,506	4,812	2,723
05/18/98	2	18	7	3	3,126	3,518	1,604
05/19/98	2	19	17	5	1,094	1,583	767
05/20/98	3	6	8	10	1,198	1,704	816
05/21/98	---	1	12	1	411	1,383	594
Total:	7	103	96	106	65,596	82,721	31,309
# Days:	3	10	9	10	14	14	14
Average:	2	10	11	11	4,685	5,909	2,236

Date	Wild Subyearling Chinook		
	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
05/08/98	598	0	0
05/09/98	203	0	0
05/10/98	205	0	0
05/11/98	0	0	0
05/12/98	0	0	0
05/13/98	0	0	0
05/14/98	0	0	0
05/15/98	0	0	0
05/16/98	0	0	0
05/17/98	0	0	0
05/18/98	0	0	0
05/19/98	0	0	0
05/20/98	599	0	0
05/21/98	0	0	0
Total:	1,605	0	0
# Days:	14	14	14
Average:	115	0	0

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)
05/08/98	---	0	0	0	0	0	0	16	1,805	164	2,017
05/09/98	---	---	---	---	0	0	0	5	1,205	464	4,478
05/10/98	---	---	---	---	0	0	0	5	4,060	0	1,637
05/11/98	---	0	0	0	0	0	0	6	1,797	0	939
05/12/98	---	0	0	0	0	0	0	3	1,588	133	886
05/13/98	---	0	0	0	0	0	0	2	912	239	769
05/14/98	---	0	0	0	0	0	0	4	1,638	47	2,448
05/15/98	---	0	---	0	0	0	0	5	1,829	0	8,510
05/16/98	---	---	---	---	0	0	0	2	1,838	0	75,366
05/17/98	---	---	---	---	0	0	0	0	3,512	0	42,527
05/18/98	0	0	0	0	0	0	0	0	2,039	0	25,128
05/19/98	0	0	0	0	0	0	0	2	4,965	0	10,393
05/20/98	0	0	0	0	0	0	0	2	4,193	274	6,466
05/21/98	---	0	0	0	0	0	0	0	4,825	221	6,788
Total:	0	0	0	0	0	0	0	52	36,206	1,542	188,352
# Days:	3	10	9	10	14	14	14	14	14	14	14
Average:	0	0	0	0	0	0	0	4	2,586	110	13,454

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)
05/08/98	---	0	0	13	6,383	200	192	164	10,684	16,428	12,458
05/09/98	---	---	---	---	9,331	201	391	117	7,548	11,207	14,232
05/10/98	---	---	---	---	5,959	1,244	1,563	49	7,202	16,632	13,446
05/11/98	---	0	0	4	6,519	1,226	1,100	111	5,070	13,893	8,983
05/12/98	---	0	0	2	5,907	1,418	569	132	5,506	15,548	5,556
05/13/98	---	0	0	10	12,424	585	758	130	2,222	13,370	8,193
05/14/98	---	0	0	9	14,900	1,554	858	136	3,049	16,528	12,582
05/15/98	---	0	---	6	20,243	2,727	519	174	3,138	19,206	11,295
05/16/98	---	---	---	---	11,596	4,240	900	187	3,732	15,543	11,746
05/17/98	---	---	---	---	5,681	3,837	1,609	181	2,972	16,391	17,434
05/18/98	0	0	0	1	6,253	4,107	2,179	162	4,208	13,936	10,251
05/19/98	0	0	0	7	4,006	948	2,491	238	13,293	22,645	6,039
05/20/98	0	0	0	3	3,193	2,419	1,384	358	10,775	13,600	10,058
05/21/98	---	0	0	0	2,820	1,748	1,056	394	6,219	27,567	14,794
Total:	0	0	0	55	115,215	26,454	15,569	2,533	85,618	232,494	157,067
# Days:	3	10	9	10	14	14	14	14	14	14	14
Average:	0	0	0	6	8,230	1,890	1,112	181	6,116	16,607	11,219

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)
05/08/98	---	25	233	142	250,734	142,005	86,940	691	18,527	26,284	5,825
05/09/98	---	---	---	---	207,396	106,702	74,484	701	16,476	27,716	7,670
05/10/98	---	---	---	---	116,093	92,380	65,647	504	14,848	35,088	6,281
05/11/98	---	65	35	98	133,936	70,461	55,835	574	19,088	34,144	7,105
05/12/98	---	146	206	237	142,841	75,477	34,317	708	22,519	25,889	7,288
05/13/98	---	155	135	282	80,658	41,715	49,763	892	6,775	23,455	10,251
05/14/98	---	161	151	389	141,074	44,514	30,151	591	16,667	32,020	12,284
05/15/98	---	136	---	211	99,190	36,996	29,713	526	17,655	24,562	13,842
05/16/98	---	---	---	---	59,871	37,273	25,083	676	14,898	18,962	6,775
05/17/98	---	---	---	---	101,873	27,641	40,224	377	8,809	18,440	11,569
05/18/98	16	207	25	36	124,663	23,935	29,255	275	11,477	16,114	6,584
05/19/98	29	200	24	28	106,352	19,705	21,369	331	13,966	17,982	4,190
05/20/98	35	531	42	43	45,306	16,374	16,028	331	6,577	20,400	7,264
05/21/98	---	332	27	120	37,977	7,186	9,043	237	5,393	17,863	8,442
Total:	80	1,958	878	1,586	1,647,964	742,364	567,852	7,414	193,675	338,919	115,370
# Days:	3	10	9	10	14	14	14	14	14	14	14
Average:	27	196	98	159	117,712	53,026	40,561	530	13,834	24,209	8,241

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)
05/08/98	---	34	91	28	25,931	11,621	6,743	256	3,156	32,527	3,182
05/09/98	---	---	---	---	20,529	7,842	9,970	242	2,750	23,527	3,724
05/10/98	---	---	---	---	17,671	8,701	8,792	91	2,025	17,999	4,821
05/11/98	---	29	21	20	19,162	10,621	8,247	122	2,991	21,428	3,430
05/12/98	---	75	55	39	15,212	4,956	3,982	158	3,755	12,867	4,208
05/13/98	---	84	29	35	10,058	3,509	7,341	203	2,171	6,840	6,113
05/14/98	---	93	26	27	16,678	5,404	6,006	77	2,377	10,501	3,023
05/15/98	---	78	---	24	11,336	5,940	6,239	117	2,324	8,646	2,111
05/16/98	---	---	---	---	8,638	5,285	3,602	133	2,680	6,528	2,606
05/17/98	---	---	---	---	9,600	3,435	3,713	88	1,772	4,872	2,553
05/18/98	0	211	7	4	12,115	2,728	4,554	52	3,059	5,662	3,167
05/19/98	0	200	1	5	7,639	3,645	3,258	98	3,759	7,770	2,218
05/20/98	3	100	13	11	4,391	1,587	2,090	116	1,409	5,385	3,752
05/21/98	---	81	15	12	3,847	1,325	2,706	103	1,024	8,932	3,699
Total:	3	985	258	205	182,807	76,599	77,243	1,856	35,252	173,484	48,607
# Days:	3	10	9	10	14	14	14	14	14	14	14
Average:	1	99	29	21	13,058	5,471	5,517	133	2,518	12,392	3,472

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)
05/08/98	---	0	0	119	2,194	0	0	43	4,088	2,628	448
05/09/98	---	---	---	---	7,302	1,004	0	31	2,973	927	532
05/10/98	---	---	---	---	1,644	414	0	14	2,777	1,139	265
05/11/98	---	0	0	123	4,741	817	0	21	1,528	0	490
05/12/98	---	0	0	269	6,695	707	190	34	2,439	1,751	624
05/13/98	---	0	0	211	5,916	584	632	60	1,338	1,586	1,310
05/14/98	---	0	0	184	6,077	1,653	490	14	2,030	1,318	979
05/15/98	---	0	---	88	7,490	1,460	779	16	893	612	326
05/16/98	---	---	---	---	1,999	1,243	643	28	606	0	441
05/17/98	---	---	---	---	1,763	3,021	1,361	15	1,081	455	80
05/18/98	1	0	0	34	2,149	949	1,868	13	1,147	653	375
05/19/98	5	0	0	47	0	629	575	17	1,208	555	41
05/20/98	2	0	0	51	798	556	889	13	399	548	319
05/21/98	---	0	0	52	604	218	528	27	560	221	174
Total:	8	0	0	1,178	49,372	13,255	7,955	346	23,067	12,393	6,404
# Days:	3	10	9	10	14	14	14	14	14	14	14
Average:	3	0	0	118	3,527	947	568	25	1,648	885	457

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)
05/08/98	---	0	0	0	0	0	0	366	89,200	32,855	2,106
05/09/98	---	---	---	---	0	0	0	281	34,726	33,265	5,143
05/10/98	---	---	---	---	0	0	0	153	40,764	42,834	5,750
05/11/98	---	0	0	3	198	0	0	360	25,616	25,667	8,616
05/12/98	---	0	0	8	0	0	0	624	41,027	13,218	6,704
05/13/98	---	0	0	2	0	0	0	732	98,367	24,603	6,238
05/14/98	---	0	0	1	392	0	0	389	24,237	26,793	11,752
05/15/98	---	0	---	0	607	0	0	489	29,834	23,338	5,572
05/16/98	---	---	---	---	0	0	0	549	28,991	24,946	5,693
05/17/98	---	---	---	---	0	0	124	260	21,077	17,210	5,426
05/18/98	0	0	0	1	0	105	187	191	19,782	16,332	2,917
05/19/98	0	0	0	1	0	0	0	221	36,167	15,984	5,258
05/20/98	0	0	0	1	0	70	0	114	28,350	16,338	4,031
05/21/98	---	0	0	1	0	0	198	91	17,375	17,312	2,611
Total:	0	0	0	18	1,197	175	509	4,820	535,513	330,695	77,817
# Days:	3	10	9	10	14	14	14	14	14	14	14
Average:	0	0	0	2	86	13	36	344	38,251	23,621	5,558

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 May 21, 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	35,209	679	107,648	844	68,520	2,528												
TDA	23,210	353	62,283	252	40,690	1,562												
JDA	20,094	251	51,124	186	30,550	1,223												
MCN	16,583	193	43,649	140	28,626	1,186												
IHR	10,206	73	27,203	30	13,703	404												
LMN	8,088	45	20,452	97	12,326	403												
LGS	7,635	33	15,936	48	na	na												
LWG	7,009	29	11,936	3	9,028	240												
PRD	3,151	11	2,958	1	8,313	73												
RIS	1,684	14	1,491	10	5,629	39												
RRH	290	7	226	0	1,091	6												
WEL	**	**	65	17	521	9												

	Coho						Sockeye			Steelhead		
	1998		1997		10-Yr Avg.		1998	1997	10-Yr Avg.	1998	1997	10-Yr Avg.
	Adult	Jack	Adult	Jack	Adult	Jack						
BON	0	0	0	0	0	0	3	1	2,145	4,461	4,710	
TDA	0	0	0	0	0	0	2	1	870	907	1,981	
JDA	0	0	0	0	0	0	8	1	6,653	2,779	2,951	
MCN	0	0	0	0	0	0	0	1	1,522	1,520	2,820	
IHR	0	0	0	0	0	0	0	0	1,802	1,378	3,095	
LMN	0	0	0	0	0	0	0	0	1,374	1,188	2,765	
LGS	0	0	0	0	na	na	0	na	2,016	1,378	na	
LWG	0	0	0	0	0	0	1	0	4,152	3,619	5,925	
PRD	0	1	0	0	0	0	0	3	12	11	62	
RIS	0	0	0	0	0	0	1	3	27	38	126	
RRH	0	0	0	0	1	0	0	0	82	55	72	
WEL	0	0	0	0	0	0	0	0	2	38	26	

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 May 20.

1998 totals at LGS are based on video counts accumulated through May 19.

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 05/08/98 to 05/21/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	253,816	1,200	1,373,850	86,550	38,100	1,753,516
Bypassed	7,498	0	11,956	0	0	19,454
Trucked	0	0	0	0	0	0
Barged	243,888	1,198	1,330,581	84,440	37,635	1,697,742
Total Transported	243,888	1,198	1,330,581	84,440	37,635	1,697,742
LITTLE GOOSE DAM						
Collected	306,350	0	597,759	19,196	9,839	933,144
Bypassed	0	0	0	0	0	0
Trucked	0	0	0	0	0	0
Barged	295,362	0	589,631	17,917	9,667	912,577
Total Transported	295,362	0	589,631	17,917	9,667	912,577
LOWER MONUMENTAL DAM						
Collected	187,124	0	506,975	12,250	6,675	713,024
Bypassed	611	0	608	0	0	1,219
Trucked	0	0	0	0	0	0
Barged	183,863	0	494,039	11,450	9,275	698,627
Total Transported	183,863	0	494,039	11,450	9,275	698,627
MCNARY DAM						
Collected	298,613	19,221	121,558	45,131	295,168	779,691
Bypassed	297,771	19,115	121,452	45,096	294,097	777,531
Trucked	0	0	0	0	0	0
Barged	0	0	0	0	0	0
Total Transported	0	0	0	0	0	0
PROJECT TOTALS						
Collected	1,045,903	20,421	2,600,142	163,127	349,782	4,179,375
Bypassed	305,880	19,115	134,016	45,096	294,097	798,204
Trucked	0	0	0	0	0	0
Barged	723,113	1,198	2,414,251	113,807	56,577	3,308,946
Total Transported	723,113	1,198	2,414,251	113,807	56,577	3,308,946

Transportation Summary Report

Cumulative Transportation Summary through 05/21/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	1,466,749	2,460	4,557,783	107,714	41,410	6,176,116
Bypassed	101,431	33	119,883	1,425	0	222,772
Trucked	24,303	46	33,352	93	10	57,804
Barged	1,280,994	2,288	4,325,813	103,454	40,935	5,753,484
Total Transported	1,305,297	2,334	4,359,165	103,547	40,945	5,811,288
LITTLE GOOSE DAM						
Collected	845,708	0	1,234,066	20,786	9,853	2,110,413
Bypassed	0	0	0	0	0	0
Trucked	568	0	1,097	5	0	1,670
Barged	829,169	0	1,224,521	19,499	9,681	2,082,870
Total Transported	829,737	0	1,225,618	19,504	9,681	2,084,540
LOWER MONUMENTAL DAM						
Collected	464,889	22	788,701	13,017	6,760	1,273,389
Bypassed	3,395	10	1,928	11	0	5,344
Trucked	797	0	780	0	0	1,577
Barged	457,415	12	773,568	12,206	9,360	1,252,561
Total Transported	458,212	12	774,348	12,206	9,360	1,254,138
MCNARY DAM						
Collected	913,784	27,201	279,169	84,360	443,372	1,747,886
Bypassed	912,063	27,052	278,980	84,294	441,567	1,743,956
Trucked	0	0	0	0	0	0
Barged	0	0	0	0	0	0
Total Transported	0	0	0	0	0	0
PROJECT TOTALS						
Collected	3,691,130	29,683	6,859,719	225,877	501,395	11,307,804
Bypassed	1,016,889	27,095	400,791	85,730	441,567	1,972,072
Trucked	25,668	46	35,229	98	10	61,051
Barged	2,567,578	2,300	6,323,902	135,159	59,976	9,088,915
Total Transported	2,593,246	2,346	6,359,131	135,257	59,986	9,149,966