



Fish Passage Center

Weekly Report #00 - 8

April 28, 2000

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SUMMARY OF EVENTS:

Water Supply: Precipitation over the period of April 1-26 at Columbia above Coulee was 115% of normal, for the Snake River above Ice Harbor was 90% of normal and for the Columbia above The Dalles was 92% of normal. The new May-Early Runoff Volume Forecast has been issued. The highest increase is forecasted at Brownlee from 70% in the April Midmonth to 75% in the May Early for April-July and at Weiser from 66% in April Midmonth to 75% in the May Early forecast. At the same time runoff volume forecasts in the May Early for Libby and Hungry Horse decreased 2% compared with the April Midmonth forecasts for the same period. The forecast is presented in the following table:

Site	May-Early Runoff Volume Forecast		April Midmonth Runoff Volume Forecast		April Final Runoff Volume Forecast	
	Runoff Volume [KAF]	% of avg	Runoff Volume	% of avg	Runoff Volume [KAF]	% of avg
Mica (April-Sept.)	13.1	103	13.1	103	13.1	103
Hungry Horse (April-Sept.)	2.13	98	2.18	100	2.09	96
Libby (April-Sept.)	7.41	109	7.55	111	7.29	108
Grand Coulee (Jan.-July)	66.6	105	67.0	106	65.8	104
The Dalles (Jan.-July)	105.0	99	105	99	105	99
Brownlee (April-July)	4.32	75	4.03	70	3.93	68
Dworshak (April-July)	2.62	97	2.61	97	2.67	99
Lower Granite (Jan.-July)	26.9	90	26.3	88	26.7	90
Heise NR-ID (April-July)	2.94	85	2.91	84	2.94	85
Weiser-ID (April-July)	3.94	75	3.63	66	3.62	66

Reservoir Operations: Reservoirs continue to be operated for flood control through the end of April. A summary of actual elevations on April 27, required flood control elevations at the end of April is shown in the following Table:

Reservoir	Required End of April Flood Control Elevation in [ft]	Actual Elevation as of April 27, 2000 in [ft]
Libby	2343.01	2352.05
Hungry Horse	3503.2	3507.03
Grand Coulee	1239.6	1244.5
Brownlee	2056.2	2057.88*
Dworshak	1510.4	1529.11

* elevation as of April 26

Libby reservoir continued to refill in order to meet the 95 BiOp measures and the sturgeon BiOp measures, which includes refill to full pool elevation by June 30 and sturgeon flow releases. The reservoir is at minimum outflow of 4 kcfs.

Hungry Horse was operated toward the end of April flood control elevation. Currently, inflows are decreasing from 14.37 kcfs on April 22 to 8.01 kcfs on April 27. The project was operated at full power house capacity in the range of 8.0 kcfs-8.3 kcfs during the previous week.

Grand Coulee continued to be drafted to the end of April flood control elevation, but will end at approximately 1244 ft. Inflows fluctuated from 140.8 kcfs on April 27 to 166.8 kcfs on April 24. Outflows were also fluctuating in the range of 162.5 kcfs on April 26 to 202.3 kcfs on April 24.

Brownlee continued with flood control operations. Current inflows were in the range of 28.33 kcfs on April 26 to 32.4 kcfs on April 23. Current outflows at Hells Canyon Dam were in the range of 32.4 kcfs to 32.02 kcfs for the period of April 21-27, resulting in spill at all projects at Hells Canyon complex due to flood control.

Dworshak continued with flood control operations, although the reservoir was in refill through the April 25 due to increased inflows and limited hydraulic capacity. Inflows decreased from 21.7 kcfs on April 21 to 14.7 kcfs on April

26. Outflow was 15.4 kcfs for the period of April 21-27, which is the maximum allowed outflow in compliance with Idaho State Total Dissolved Gas standards.

Upper Snake reservoirs: As of April 26, the Upper Snake system is at 89% of capacity, and irrigation season has been initiated. American Falls is full and Palisades and Jackson Lake are at 79% and 82% of capacity. Flow below American Falls is 10.1 kcfs, and at Milner, which is the lowest point in the Upper Snake system, is 3.5 kcfs.

Boise and Payette River Basins: As of April 26, the Boise River system is at 84% of capacity. The major reservoirs: Arrowrock is at 95% of full, Anderson Ranch is at 75% of full and Lucky Peak is at 88% of full.

As of April 26, the Payette River system is at 79% of capacity. The major reservoir, Cascade is at 78% of full capacity.

Streamflow: *Lower Granite:* Fishery agencies requested flows of 100 kcfs through the end of April and first week of May for yearling chinook passing this project. From the official beginning of the migration season flows fluctuated from 78.5 kcfs on April 10 to 115.4 kcfs on April 23. For the periods of April 10-13, April 17-18 and April 26-27, the flows were below the flow target of 100 kcfs. Limitation of outflows at Dworshak, because the State of Idaho has not issued a dissolved gas waiver is currently the main obstacle to maintaining the minimum desired flow of 100 kcfs at Lower Granite to facilitate spring migrants.

Priest Rapids: The BiOp required flow target is 135 kcfs, beginning on April 10. Flow of 134.4 kcfs was near the required flow target on April 16. For the period of April 10-26 flows were fluctuating in the range of 134.4 kcfs to 232.9 kcfs on April 22. The major decreases from 232.9 kcfs to 206.8 kcfs were on April 22-23 and from 239.9 kcfs to 196.8 kcfs on April 26-27.

McNary: The requested minimum spring target flow according to the 1995 BiOp is 260 kcfs, beginning on April 20. Flows were in the range of 291.9 kcfs on April 21 to 359.3 kcfs on April 23.

Spill: Increased outflow from Dworshak Dam resulted in approximately 4.7 Kcfs spill over the past week as the project continued drafting towards its end of April flood control elevation. Spill for fish passage continues at the Lower Snake projects as described by the NMFS and Action Agencies' Spill Plan. A System Operational Request was submitted to immediately initiate 24-hour spill at Little Goose Dam. The goal of the SOR is to improve migration conditions for in-river smolts and to achieve a more equitable distribution of fish for the spread-the-risk policy. Thus far the request has not been implemented.

Spill for fish passage continues at the lower Columbia River projects. The NMFS and Action Agencies' Spill Plan modifies spill at the lower Columbia Projects. The Dalles spill is reduced from 64% to 40% for 24 hours each day. Night-time spill as described in the 1998 Supplemental Biological Opinion will continue at John Day and Bonneville dams, but daytime spill will be studied at John Day and Bonneville dams. At John Day Dam daytime spill will vary between 0 and 30% in three-day blocks. At Bonneville Dam daytime spill will vary between the old 75 Kcfs spill level and the gas cap spill (120-150 Kcfs). Days of gas cap spill at Bonneville Dam will correspond to days of zero daytime spill at John Day Dam.

The FERC spill program continues at the Mid Columbia projects.

Total dissolved gas levels are limited to the 110% saturation level below Dworshak Dam since the State of Idaho has not provided a waiver for TDGS. Levels of total dissolved gas were near the allowable TDGS levels at some locations measured, but exceeded the waiver limits at others during periods of higher flows this past week. Monitoring for signs of gas bubble trauma (GBT) on fish collected through the Smolt Monitoring Program was conducted this past week. No fish were detected with signs of GBT in their fins at the sites in the Federal hydrosystem, however, some signs were detected in fish at Rock Island Dam.

Smolt Monitoring Program. Snake River basin: Lower Granite Dam passage indices of steelhead rose sharply from April 21 to 23 and remained around 200,000 fish over the next three days before dropping back to 78,000 fish on April 27. Also, yearling chinook passage indices fluctuated between 53,000 and 142,000 this week. Mid-Columbia River: Daily yearling chinook passage indices at Rock Island Dam started the week above 200 fish and ended the week below 100 fish. Sockeye passage indices rose to over 100 fish on April 25 and 26. Lower Columbia River: Yearling chinook, steelhead, and sockeye passage indices were higher this week at McNary Dam. Subyearling chinook dominated the collections at Bonneville Dam beginning April 21 following the Spring Creek Hatchery release.

Adult Fish Passage. Passage of adult spring chinook at Bonneville Dam through the week (4/21-4/27) ranged between 3,400 and 7,600. The cumulative count through April 27 was 109,950 approximately 7.6 times and 3.1 times greater than the respective 1999 count and 10-year average. The adult counts at other lower Columbia River projects were: The Dalles 55,297; John Day 26,061 [3 day counts missing]; and McNary 15,418. About 50% of the fish counted at Bonneville have moved upstream past The Dalles Dam and when compared to the 1999 and 10-year average, this conversion rate would appear to indicate that passage is on-track for upstream river systems. Through April 27, about 1,032 adult spring chinook have been counted at 3-Mile Dam located on the Umatilla River. Adult chinook at Ice Harbor Dam totaled 8,045 through April 27 and that was 3.3 times the 10-year average, and similar to the Bonneville Dam ratio of year 2000 and 10-year average counts. The count at Priest Rapids Dam was 1,351 with counts starting to increase at Rock Island and Rocky Reach dams as well through the week.

Numbers of jack chinook remain way above normal with Bonneville Dam reporting 4,463 far greater than the 1999 and 10-year average through April 27. About 45% of the Bonneville count of jack chinook have been counted at The Dalles Dam to date.

Steelhead counts at Bonneville Dam ranged between 20 and 50 for the week with the cumulative count through April 27 of 1,855. Wild steelhead totaled 748 for the season.

At Lower Granite Dam, the passage of adult steelhead is nearing completion for the spring migration season with 2,316 through April 27. To date, the 2000 count of steelhead remains well below the 1999 and 10-year average.

Hatchery Releases: Approximately 27 million fish were released from Basin hatcheries during the past two weeks with about 3 million projected for the upcoming two weeks.

Snake River – The release of yearling spring, summer and fall chinook has been completed in the Snake River basin. Juvenile steelhead from Snake River basin hatcheries are being released into all the major river basins with fish being trucked from some hatcheries, released directly or volitionally from hatcheries or acclimation ponds at other sites. Large numbers of steelhead will be released until mid-May. Subyearling fall chinook will be released into the Snake and Clearwater Rivers in June time frame. Final plants of coho salmon will be completed in early May.

Mid-Columbia – (above McNary Dam) Yakama Tribal Supplementation Facilities at Clark Flat and Easton continued volitional release of yearling chinook in the upper Yakama River basin. Yearling spring chinook releases were completed during the past two weeks in the Wenatchee and Methow rivers. Juvenile steelhead releases continued in the Wenatchee, Methow, and Okanogan rivers during the week and some releases will continue into May from Mid-Columbia hatcheries. Yearling summer chinook releases were mostly completed during the week. Subyearling summer and fall chinook will be released from late May to late June. A small group of subyearling fall chinook was released into the Yakama River two weeks ago. Coho salmon will be planted into the Yakama, Wenatchee, and Methow rivers during May.

Lower Columbia - (from above Bonneville Dam to below McNary Dam). Yearling spring chinook releases were completed or nearly so in the Reach with the Wind, Umatilla, Little White Salmon, Hood,

and Deschutes rivers. Coho releases are complete in this Reach with exception of the volitional release from Klickitat Hatchery. Most of the juvenile steelhead have been or are presently being released in this Reach with the Hood, Umatilla, Klickitat and Deschutes rivers receiving most of the plants to date.

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
04/14/00	112.8	0.0	121.1	0.0	131.1	9.4	141.1	5.7	149.4	0.0	154.9	10.0	160.5	3.0
04/15/00	102.3	0.0	99.1	0.0	104.5	7.8	109.8	0.0	116.8	0.0	127.2	0.0	135.2	0.0
04/16/00	123.1	0.0	119.5	5.1	125.4	8.0	126.6	0.0	130.0	0.0	126.8	0.6	134.4	0.3
04/17/00	151.0	0.0	159.0	4.0	159.1	14.1	160.2	6.8	163.1	0.0	163.6	17.7	163.4	4.2
04/18/00	159.8	0.0	158.2	3.5	162.7	26.4	168.0	32.9	171.1	0.2	180.1	54.3	181.6	27.8
04/19/00	170.4	0.0	170.5	5.0	186.1	38.5	186.7	35.4	188.5	3.1	207.4	87.0	201.3	56.3
04/20/00	160.8	0.0	163.7	7.1	168.7	23.3	173.8	31.0	176.1	0.0	180.4	48.7	182.4	24.6
04/21/00	186.2	1.3	180.4	9.3	178.5	22.3	184.4	36.6	188.6	13.5	197.4	63.0	186.6	29.5
04/22/00	181.8	2.3	194.8	19.7	207.1	38.8	213.5	88.8	220.6	32.3	240.6	111.4	232.9	83.8
04/23/00	183.8	0.0	178.6	19.8	182.9	14.6	186.5	66.2	195.9	30.8	218.1	95.3	206.8	68.4
04/24/00	202.3	0.0	200.1	19.8	213.0	41.4	207.4	58.9	208.9	30.9	200.4	85.3	201.8	124.2
04/25/00	183.1	0.0	193.0	5.5	209.3	71.3	210.9	73.7	219.3	33.0	244.9	116.9	239.9	147.3
04/26/00	162.5	0.0	164.7	0.0	171.9	16.5	179.5	37.9	184.0	30.6	193.4	75.8	196.8	120.0
04/27/00	186.6	0.0	183.9	8.6	187.8	23.0	187.5	37.6	188.8	30.9	199.5	88.4	196.4	118.0

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

Date	Dworshak		Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/14/00	16.0	5.2	34.0	30.6	105.7	25.0	101.0	16.1	104.9	38.1	107.6	66.2
04/15/00	16.0	5.2	34.5	30.6	108.8	29.5	103.8	14.7	106.7	39.4	113.3	69.1
04/16/00	15.9	5.1	33.8	30.4	104.4	25.0	102.7	28.6	108.6	38.5	113.0	69.7
04/17/00	15.8	5.0	33.6	30.4	96.1	23.7	91.3	21.3	95.4	37.6	99.7	65.6
04/18/00	15.8	5.0	31.8	32.5	98.1	23.7	96.1	19.3	101.1	31.9	104.6	67.3
04/19/00	15.6	4.8	32.0	32.5	101.2	23.6	97.5	20.4	100.9	29.1	104.0	67.8
04/20/00	15.4	4.6	31.3	32.1	105.2	25.7	100.9	23.4	105.5	29.6	110.5	75.0
04/21/00	15.4	4.7	30.8	32.3	104.4	25.9	101.7	29.4	106.6	32.3	114.2	75.4
04/22/00	15.4	4.7	30.2	32.3	111.2	27.3	106.6	56.3	111.9	44.3	113.1	97.5
04/23/00	15.4	4.7	32.4	32.2	115.4	49.7	107.9	58.6	112.4	42.4	117.2	103.0
04/24/00	15.4	4.7	30.7	32.4	109.3	30.7	106.5	19.0	112.4	31.2	117.5	68.1
04/25/00	15.4	4.7	28.4	32.3	102.5	24.2	100.1	22.4	104.9	30.8	106.4	68.1
04/26/00	15.4	4.7	26.4	32.3	98.2	24.2	91.9	19.5	92.6	31.1	97.9	65.6
04/27/00	15.4	4.7	25.9	32.4	90.4	22.2	89.5	18.9	92.6	28.3	94.7	61.3

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		
04/14/00	259.2	97.0	293.3	0.0	293.2	29.2	315.0	73.1	97.2	135.5
04/15/00	280.2	114.0	295.8	4.0	288.9	23.0	313.2	69.3	96.1	138.6
04/16/00	213.1	111.4	231.6	78.4	233.7	64.2	262.0	64.0	86.6	102.2
04/17/00	260.2	118.4	255.8	62.4	249.3	64.4	265.0	55.8	82.6	117.4
04/18/00	287.2	132.2	298.1	73.5	297.1	142.0	298.5	77.7	78.3	133.3
04/19/00	288.3	119.3	311.4	72.0	315.4	149.1	326.5	109.7	82.0	125.5
04/20/00	319.9	150.3	330.6	100.0	329.0	173.0	330.5	106.7	90.9	122.6
04/21/00	291.9	128.3	295.6	103.5	289.8	158.4	324.9	99.2	94.1	121.2
04/22/00	334.4	188.4	343.8	138.0	336.0	204.2	323.7	142.0	88.0	83.3
04/23/00	359.3	190.3	379.7	127.2	375.1	208.3	387.1	143.8	96.4	136.5
04/24/00	327.0	164.6	352.4	89.5	347.4	151.8	365.1	130.1	90.7	133.9
04/25/00	323.4	150.8	318.4	76.1	314.9	125.6	334.8	124.1	86.3	113.9
04/26/00	325.6	154.1	341.3	108.5	329.9	130.5	328.7	100.9	90.2	127.2
04/27/00	282.2	112.0	290.4	105.9	300.1	120.1	325.7	91.8	84.1	139.3

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													
	04/24/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/24/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Little Goose Dam													
	04/19/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/19/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/26/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/26/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Lower Monumental Dam													
	04/24/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/24/00	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
Ice Harbor Dam													
	04/18/00	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	04/18/00	Steelhead	43	3	0	0.00%	0.00%	0	0	0	0	3	1
	04/25/00	Yearling Chinook	100	3	0	0.00%	0.00%	0	0	0	0	3	1
	04/25/00	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
McNary Dam													
	04/20/00	Yearling Chinook	77	2	0	0.00%	0.00%	0	0	0	0	2	1
	04/20/00	Steelhead	68	2	0	0.00%	0.00%	0	0	0	0	2	1
	04/24/00	Yearling Chinook	84	3	0	0.00%	0.00%	0	0	0	0	3	1
	04/24/00	Steelhead	91	9	0	0.00%	0.00%	0	0	0	0	9	1
Bonneville Dam													
	04/20/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/20/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/24/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/24/00	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	04/27/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/27/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Rock Island Dam													
	04/20/00	Yearling Chinook	99	4	1	1.01%	0.00%	1	0	0	0	3	1
	04/20/00	Steelhead	17	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/24/00	Yearling Chinook	51	2	2	3.92%	0.00%	1	1	0	0	0	0
	04/24/00	Steelhead	34	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/27/00	Yearling Chinook	51	8	7	13.72%	0.00%	6	1	0	0	1	1
	04/27/00	Steelhead	35	2	1	2.85%	0.00%	1	0	0	0	1	1

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>			#				
	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High					
	Avg	Avg		hr	Avg		Avg	hr		Avg	Avg		hr	Avg			Avg	hr	Avg	Avg	hr
4/14	99	99	100	8	112	113	115	24	109	109	109	24	105	106	106	24	105	106	106	23
4/15	97	97	98	4	110	113	114	24	107	108	108	24	104	105	105	24	105	105	105	23
4/16	98	99	99	17	111	113	114	24	107	107	107	24	104	105	107	24	104	105	105	23
4/17	98	98	99	24	114	114	116	24	107	108	108	24	105	105	106	24	105	105	105	23
4/18	99	99	105	24	113	114	115	24	108	108	108	24	105	105	106	24	105	106	106	23
4/19	98	98	98	24	118	120	120	24	107	108	109	24	104	105	105	24	105	105	105	24
4/20	97	97	98	10	119	119	120	24	108	108	109	24	104	105	105	24	104	104	105	23
4/21	99	99	99	16	120	120	122	20	109	110	110	24	106	108	111	24	105	106	106	23
4/22	99	99	99	24	118	121	122	24	109	110	110	24	107	108	111	24	106	106	106	23
4/23	98	98	99	24	118	120	121	24	108	108	109	24	105	105	106	24	106	107	108	23
4/24	97	97	98	24	119	119	120	24	107	107	108	24	105	105	106	24	106	106	107	23
4/25	97	97	98	24	119	119	120	24	108	109	109	24	105	106	106	24	105	106	106	23
4/26	97	97	97	24	119	120	121	24	108	108	109	24	105	106	106	24	105	105	105	23
4/27	98	99	99	24	118	121	123	24	110	111	111	24	108	108	108	24	106	107	107	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>			#				
	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High					
	Avg	Avg		hr	Avg		Avg	hr		Avg	Avg		hr	Avg			Avg	hr	Avg	Avg	hr
4/14	106	106	107	23	105	105	106	24	107	108	109	24	108	108	108	22	107	107	107	8
4/15	106	106	107	23	105	105	105	23	107	107	107	23	107	107	107	23	107	107	107	21
4/16	108	110	112	23	104	104	105	13	106	106	107	13	107	107	107	22	106	106	107	20
4/17	107	108	112	23	105	106	106	23	108	109	116	23	107	107	107	22	107	107	114	21
4/18	108	110	116	23	106	106	107	21	111	113	116	21	107	108	108	24	110	111	113	22
4/19	107	110	116	24	105	106	107	23	111	113	116	23	109	110	110	21	112	113	115	19
4/20	107	109	111	23	105	105	106	24	109	111	115	24	110	111	112	23	112	113	117	22
4/21	107	109	109	23	106	106	107	24	111	113	116	24	111	111	112	24	113	114	118	24
4/22	113	117	125	23	106	107	107	24	112	116	122	24	110	111	112	24	116	118	122	24
4/23	114	117	119	23	106	106	107	24	108	109	113	24	111	112	114	23	115	117	118	23
4/24	110	114	128	23	106	107	107	24	112	115	131	24	107	108	109	24	111	114	123	21
4/25	107	110	127	23	106	107	109	24	119	124	131	24	111	112	118	22	117	119	125	22
4/26	105	105	106	23	104	105	105	22	107	108	112	22	117	119	121	22	119	122	123	20
4/27	109	112	120	23	106	107	107	24	109	111	117	24	111	113	114	24	113	114	117	22

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>			#				
	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High	<u>24 h</u>	<u>12 h</u>	High					
	Avg	Avg		hr	Avg		Avg	hr		Avg	Avg		hr	Avg			Avg	hr	Avg	Avg	hr
4/14	106	107	107	23	108	108	108	23	---	---	---	0	---	---	---	0	---	---	---	0
4/15	106	106	106	23	108	108	108	22	107	107	108	24	---	---	---	0	0	107	108	24
4/16	105	105	106	24	107	107	108	24	107	107	109	24	---	---	---	0	0	107	108	24
4/17	106	106	106	21	108	108	108	21	107	107	109	24	109	109	113	5	109	107	109	24
4/18	108	108	108	24	108	108	108	22	108	108	112	24	112	112	120	19	112	112	123	24
4/19	110	111	111	24	107	107	107	24	---	---	---	0	---	---	---	0	---	---	---	0
4/20	111	111	112	21	107	107	107	21	109	109	111	24	110	110	112	24	110	115	121	24
4/21	112	112	113	22	---	---	---	0	114	114	116	24	115	115	121	24	115	115	121	24
4/22	114	115	116	23	---	---	---	0	113	113	114	24	121	121	127	24	121	118	126	24
4/23	113	114	115	24	---	---	---	0	113	113	117	24	119	119	121	24	119	119	121	24
4/24	113	113	114	24	115	115	116	9	115	115	117	19	119	119	121	23	119	116	118	9
4/25	114	116	116	23	120	122	123	22	116	116	117	24	122	122	126	24	122	118	118	6
4/26	111	114	116	24	121	123	123	22	116	116	119	24	120	120	127	24	120	122	126	24
4/27	113	114	115	24	118	119	120	22	---	---	---	0	---	---	---	0	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia and Snake River Sites

Date	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clwrtr-Peck</u>			<u>Anatone</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/14	---	---	---	0	104	104	105	24	110	110	110	24	105	105	106	24	102	102	103	24
4/15	107	107	108	24	104	104	105	24	110	110	110	24	105	105	106	24	102	102	103	24
4/16	106	106	107	24	105	106	106	24	109	110	110	24	105	105	105	24	102	102	103	24
4/17	107	107	108	24	105	105	106	24	110	110	110	24	106	107	107	24	103	103	104	24
4/18	---	---	---	0	106	106	107	24	110	110	110	24	106	106	107	24	103	103	104	24
4/19	---	---	---	0	107	108	109	24	105	106	106	24	---	---	---	0	102	103	104	24
4/20	113	113	119	24	109	111	112	24	108	109	109	24	105	106	106	24	103	103	104	24
4/21	113	113	118	24	112	112	112	24	109	109	110	24	106	107	107	24	104	105	106	24
4/22	120	120	125	24	109	110	111	24	109	109	109	24	105	105	106	24	103	103	103	24
4/23	120	120	122	24	111	113	113	24	109	109	109	24	105	105	106	24	103	103	104	24
4/24	121	121	122	23	111	112	114	24	109	109	109	24	105	106	106	24	103	104	105	24
4/25	123	123	124	24	114	114	114	24	109	109	109	24	104	105	106	24	103	103	104	24
4/26	123	123	125	24	115	116	117	24	109	109	109	24	104	105	105	24	103	105	105	24
4/27	---	---	---	0	117	118	119	23	110	110	110	23	105	106	107	24	104	105	106	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clwrtr-Lewiston</u>			<u>Lower Granite</u>			<u>L. Granite Tlwr</u>			<u>Little Goose</u>			<u>L. Goose Tlwr</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/14	103	103	104	24	104	105	105	24	111	111	112	24	108	109	109	24	112	115	117	24
4/15	103	103	104	24	103	103	104	24	112	114	119	24	107	107	108	24	110	113	114	24
4/16	103	103	104	23	103	103	104	24	111	111	111	24	107	108	108	24	114	114	116	24
4/17	104	105	106	23	104	104	106	24	110	111	111	24	109	110	111	24	113	117	117	24
4/18	104	105	106	24	104	105	105	24	110	111	111	24	109	110	111	24	113	117	118	24
4/19	103	104	105	24	104	105	106	24	110	111	112	24	107	107	108	24	112	116	117	24
4/20	103	104	105	24	104	104	105	24	111	112	112	24	107	108	110	24	113	117	117	24
4/21	104	105	106	24	106	107	108	24	111	112	112	24	110	111	115	23	114	118	125	24
4/22	103	103	104	24	105	105	105	24	111	112	117	24	109	109	111	24	120	124	128	24
4/23	103	104	104	24	104	104	104	24	117	120	122	24	107	107	108	24	120	125	125	24
4/24	103	104	105	24	102	103	103	24	112	114	119	24	107	108	111	24	110	113	116	21
4/25	103	103	104	24	104	104	105	24	110	110	111	24	112	113	113	24	115	116	117	17
4/26	104	105	106	24	105	106	107	24	110	110	111	24	111	111	112	21	114	114	117	10
4/27	105	106	108	24	105	106	108	24	110	110	111	24	108	109	109	24	112	115	116	24

Total Dissolved Gas Saturation Data at Snake and Lower Columbia River Sites

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/14	114	116	117	24	120	121	121	24	114	114	115	24	117	119	121	24	109	110	110	24
4/15	111	112	113	24	120	120	121	24	114	115	116	24	117	119	120	24	108	109	109	24
4/16	110	111	113	24	120	120	121	24	116	117	118	24	117	119	121	24	108	108	109	24
4/17	111	112	114	24	119	120	121	24	118	119	119	24	116	118	120	24	108	108	109	9
4/18	113	113	115	9	119	119	120	24	118	118	119	24	117	118	120	24	---	---	---	0
4/19	112	113	115	24	118	118	119	23	116	116	117	24	116	118	120	23	109	109	111	22
4/20	111	113	114	24	118	119	119	24	115	115	116	24	118	120	121	23	109	111	112	24
4/21	114	115	118	24	119	120	124	24	116	117	118	24	118	121	124	24	112	114	117	24
4/22	114	116	118	24	121	124	126	24	115	116	117	24	120	120	122	24	113	113	114	24
4/23	117	119	120	24	122	124	125	24	114	115	115	24	121	123	124	24	109	109	111	24
4/24	118	120	121	24	119	120	120	24	114	114	116	14	117	118	119	24	110	112	114	24
4/25	118	119	120	14	118	119	119	22	116	116	116	19	116	118	118	22	113	113	113	24
4/26	112	115	116	24	116	117	118	24	116	117	118	24	115	116	118	24	114	115	116	24
4/27	115	117	119	24	116	117	118	24	116	117	118	24	114	116	118	24	115	117	118	24

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>				<u>McNary Tlwr</u>				<u>John Day</u>				<u>John Day Tlwr</u>				<u>The Dalles</u>			
	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24h Avg	12h Avg	High	# hr	24h Avg	12h Avg	High	# hr	24h Avg	12h Avg	High	# hr
4/14	109	109	109	20	118	119	121	20	109	109	110	23	108	109	109	23	107	107	107	23
4/15	108	108	109	24	119	120	120	24	109	109	110	23	110	110	121	24	---	---	---	0
4/16	109	110	110	24	118	119	120	24	109	109	110	23	117	120	121	24	---	---	---	0
4/17	110	111	112	24	120	120	120	24	109	109	110	23	115	120	121	24	---	---	---	0
4/18	111	111	112	24	121	122	123	24	110	110	110	23	118	121	121	24	109	110	111	15
4/19	109	109	110	24	120	120	121	24	109	109	110	24	118	121	122	24	108	109	111	24
4/20	110	111	112	24	121	122	123	24	110	111	112	23	121	122	122	24	110	112	113	23
4/21	113	116	117	24	121	121	122	21	112	112	113	23	121	121	122	24	113	113	114	23
4/22	113	115	116	24	123	124	127	24	111	111	112	23	122	122	123	24	112	113	115	23
4/23	109	109	109	24	123	124	124	24	111	111	112	23	122	123	123	24	111	112	113	23
4/24	111	113	114	24	122	123	123	24	110	111	111	23	120	121	122	23	111	111	112	23
4/25	113	113	114	24	122	123	124	24	110	111	111	23	118	120	121	24	110	111	112	23
4/26	114	114	115	21	122	124	125	24	111	111	112	23	120	121	122	24	111	112	113	23
4/27	115	117	117	24	119	120	120	21	114	115	116	24	119	120	121	24	113	113	114	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>				<u>Bonneville</u>				<u>Warrendale</u>				<u>Skamania</u>				<u>Camas/Washugal</u>			
	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24h Avg	12h Avg	High	# hr	24h Avg	12h Avg	High	# hr	24h Avg	12h Avg	High	# hr
4/14	110	110	111	24	105	106	107	23	109	110	111	23	109	109	110	23	109	110	110	24
4/15	110	111	111	24	108	108	108	23	111	112	112	23	110	111	111	23	111	112	112	24
4/16	113	116	117	24	109	109	109	23	112	112	113	23	111	112	113	23	111	112	112	24
4/17	115	117	118	23	109	110	113	23	113	113	115	23	111	112	114	23	112	113	114	24
4/18	116	118	119	24	112	112	113	23	115	115	116	23	113	114	114	23	113	114	115	23
4/19	115	116	117	24	110	111	111	23	116	116	117	24	114	115	117	24	115	116	118	24
4/20	117	118	119	24	113	113	114	23	116	117	119	23	116	117	119	23	116	118	120	24
4/21	118	119	119	24	116	117	117	23	119	119	121	23	118	118	119	23	118	119	121	24
4/22	118	119	119	24	114	116	117	23	120	121	123	23	119	121	123	23	119	120	122	24
4/23	117	118	118	24	114	114	115	22	119	120	120	23	118	118	119	23	118	119	119	24
4/24	117	118	118	24	115	116	117	23	120	120	120	23	118	119	119	23	120	120	121	23
4/25	116	117	118	24	116	117	118	23	120	120	121	23	119	120	120	23	118	119	120	24
4/26	116	118	119	24	114	115	116	23	118	119	120	23	117	118	119	23	116	117	118	24
4/27	118	119	119	24	115	116	116	24	118	119	120	24	117	117	119	24	116	117	118	24

Hatchery Release Summary

From 4/14/00 to 4/27/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
IDFG							
Clearwater							
	SP Chinook	2000	159,051	04/10/00	04/14/00	Red River Acclim Pd	S Fk Clearwater River
	SU Steelhead	2000	183,857	04/19/00	04/20/00	Clear Cr	Clearwater Rvr M F
	SU Steelhead	2000	311,416	04/19/00	04/21/00	Redhouse (SFk	Clearwater Rvr M F
Magic Valley							
	SU Steelhead	2000	52,000	04/03/00	05/12/00	Squaw Cr Acclim Pd	Salmon River
	SU Steelhead	2000	190,000	04/12/00	04/17/00	Lemhi R	Salmon River
	SU Steelhead	2000	126,040	04/14/00	04/18/00	Shoup Br (Salmon R)	Salmon River
	SU Steelhead	2000	41,091	04/17/00	04/17/00	Salmon R	Salmon River
	SU Steelhead	2000	315,000	04/18/00	04/21/00	McNabb/Salmon R	Salmon River
	SU Steelhead	2000	60,000	04/20/00	04/20/00	N Fk Salmon R	Salmon River
	SU Steelhead	2000	250,000	04/24/00	05/09/00	Squaw Cr Acclim Pd	Salmon River
	SU Steelhead	2000	300,000	04/24/00	04/27/00	Little Salmon R	Salmon River
	SU Steelhead	2000	270,000	04/27/00	05/02/00	E Fk Salmon R	Salmon River
Pahsimeroi							
	SU Chinook	2000	53,903	04/12/00	04/25/00	Pahsimeroi H	Pahsimeroi River
Rapid River							
	SP Chinook	2000	2,462,354	03/16/00	04/25/00	Rapid River H	Little Salmon River
Sawtooth							
	SP Chinook	2000	123,425	04/04/00	04/19/00	Sawtooth H	Salmon River
	SU Steelhead	2000	606,925	04/10/00	04/26/00	Sawtooth H	Salmon River
	Agency Totals:		5,505,062	.....		
Nez Perce Tribe							
Clearwater							
	SU Steelhead	2000	100,000	04/27/00	05/04/00	Crooked R Acclim Pd	S Fk Clearwater River
	SU Steelhead	2000	140,000	04/27/00	05/04/00	Red R	S Fk Clearwater River
Kooskia							
	Coho	2000	270,000	04/17/00	05/10/00	Kooskia H	Clearwater Rvr M F
Lookingglass							
	SP Chinook	2000	35,000	04/01/00	04/18/00	Lostine Accim Pd	Wallowa River
	Agency Totals:		545,000	.....		
ODFW							
Big Canyon							
	SU Steelhead	2000	174,000	04/12/00	04/14/00	Big Canyon H	Grande Ronde River
Imnaha							
	SP Chinook	2000	180,000	03/22/00	04/18/00	Imnaha Acclim Pd	Imnaha River
Irrigon							
	SU Steelhead	2000	100,000	04/19/00	04/21/00	Big Sheep Cr	Imnaha River
Lookingglass							
	SP Chinook	2000	38,000	04/01/00	04/18/00	Catherine Cr	Grande Ronde River
Round Butte							
	SU Steelhead	2000	161,000	04/04/00	04/14/00	Bel. Pelton Dam	Deschutes River
	SP Chinook	2000	300,000	04/12/00	04/20/00	Bel. Pelton Dam	Deschutes River

Hatchery Release Summary

From 4/14/00 to 4/27/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin... ..End	Release Site	River Name
Agency Totals:			953,000	.....	
Umatilla Tribe						
Cascade	Coho	2000	750,000	04/10/00 04/20/00	Umatilla R	Umatilla River
Imeques	SP Chinook	2000	275,000	04/10/00 04/20/00	Imeques Acclim Pd	Umatilla River
Minthorn	SU Steelhead	2000	50,000	04/20/00 04/30/00	Minthorn Acclim Pd	Umatilla River
Thornhollow	FA Chinook	2000	240,000	04/10/00 04/20/00	Thornhollow Acclim Pd	Umatilla River
Agency Totals:			1,315,000	.....	
USFWS						
Carson	SP Chinook	2000	1,420,000	04/20/00 04/20/00	Carson H	Wind River
Dworshak	SU Steelhead	2000	200,000	04/17/00 04/21/00	Clear Cr	Clearwater Rvr M F
	SU Steelhead	2000	600,000	04/17/00 04/21/00	Redhouse (SFk)	Clearwater Rvr M F
Eagle Creek	Coho	2000	500,000	04/19/00 04/25/00	Little Salmon R	Little Salmon River
Hagerman	SU Steelhead	2000	120,143	04/22/00 04/25/00	Sawtooth H	Salmon River
	SU Steelhead	2000	310,000	04/26/00 05/08/00	Little Salmon R	Salmon River
Leavenworth	SP Chinook	2000	1,695,000	04/18/00 04/18/00	Leavenworth H	Wenatchee River
L White Salmon	SP Chinook	2000	1,100,000	04/17/00 04/20/00	Little White Salmon H	Little White Salmon River
	Coho	2000	550,000	04/20/00 04/20/00	Little White Salmon H	Little White Salmon River
Spring Creek	FA Chinook	2000	4,309,676	04/20/00 04/20/00	Spring Creek H	Columbia River
Willard	Coho	2000	980,000	04/17/00 04/20/00	Willard H	Little White Salmon River
Winthrop	SU Steelhead	2000	105,000	04/12/00 05/31/00	Winthrop H	Methow River
Warm Springs	SP Chinook	2000	679,982	03/22/00 04/19/00	Warm Springs H	Deschutes River
Agency Totals:			12,569,80	.....	
WDFW						
Chewuch	SP Chinook	2000	218,000	04/19/00 04/19/00	Chewuch R	Methow River
Chiwawa	SU Steelhead	2000	30,600	04/17/00 04/24/00	Chiwawa H	Wenatchee River
	SU Steelhead	2000	43,400	04/26/00 05/15/00	Chiwawa H	Wenatchee River
	SU Steelhead	2000	25,600	04/26/00 05/15/00	Chiwawa H	Wenatchee River
East Bank						

Hatchery Release Summary

From 4/14/00 to 4/27/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin... ..End	Release Site	River Name
	SU Steelhead	2000	30,000	04/17/00 04/20/00	Wenatchee R	Wenatchee River
	SU Steelhead	2000	45,000	04/17/00 04/20/00	Wenatchee R	Wenatchee River
Klickitat						
	Coho	2000	1,400,000	04/15/00 06/05/00	Klickitat H	Klickitat River
Lyons Ferry						
	FA Chinook	2000	458,000	03/22/00 04/14/00	Lyons Ferry H	Snake River
	SU Steelhead	2000	250,000	03/25/00 04/30/00	Cottonwood Acclim Pd	Grande Ronde River
	SU Steelhead	2000	125,000	03/25/00 04/30/00	Dayton Acclim Pd	Touchet River
	SU Steelhead	2000	80,000	04/15/00 04/15/00	Lyons Ferry H	Snake River
	SU Steelhead	2000	160,000	04/17/00 04/30/00	Tucannon R	Tucannon River
	SU Steelhead	2000	175,000	04/17/00 04/30/00	Walla Walla R	Walla Walla River
Methow						
	SP Chinook	2000	218,500	04/18/00 04/21/00	Methow H	Methow River
	SP Chinook	2000	15,400	04/19/00 04/25/00	Twisp R	Methow River
Skamania						
	WI Steelhead	2000	20,000	04/27/00 05/01/00	White Salmon R	White Salmon River
	SU Steelhead	2000	20,000	04/27/00 05/01/00	Little White Salmon R	Little White Salmon R
	SU Steelhead	2000	100,000	04/27/00 05/01/00	Klickitat R	Klickitat River
Tucannon						
	SP Chinook	2000	128,000	03/10/00 04/20/00	Curl Lake	Tucannon River
Turtle Rock						
	SU Chinook	2000	218,000	04/19/00 04/19/00	Turtle Rock H	Mid-Columbia River
Wells						
	SU Chinook	2000	293,000	04/13/00 04/26/00	Similkameen Acclim Pd	Okanogan River
	SU Steelhead	2000	140,000	04/17/00 04/30/00	Chewuch R	Methow River
	SU Steelhead	2000	140,000	04/17/00 04/30/00	Twisp R	Methow River
	SU Steelhead	2000	140,000	04/17/00 04/30/00	Methow R	Methow River
	SU Chinook	2000	466,000	04/17/00 04/25/00	Wells H	Mid-Columbia River
	SU Steelhead	2000	67,000	04/22/00 05/22/00	Bel. Wells Dam	Mid-Columbia River
	SU Steelhead	2000	68,000	04/25/00 04/25/00	Similkameen Acclim Pd	Okanogan River
	SU Steelhead	2000	88,000	04/26/00 05/10/00	Okanogan R	Okanogan River
	Agency Totals:		5,162,500	.....	
				Warm Spgs Tribe		
Oak Springs						
	SU Steelhead	2000	34,000	04/13/00 04/27/00	Blackberry Acclim Pd	Hood River
	WI Steelhead	2000	31,000	04/17/00 05/01/00	E Fk Irrig Dist Sand Trap	Hood River
	WI Steelhead	2000	32,000	04/17/00 05/01/00	Parkdale Acclim Pd	Hood River
Round Butte						
	SP Chinook	2000	56,000	04/10/00 04/24/00	Blackberry Acclim Pd	Hood River
	SP Chinook	2000	30,500	04/10/00 04/25/00	Parkdale Acclim Pd	Hood River
	SP Chinook	2000	40,000	04/10/00 04/24/00	Jones Creek Acclim Pd	Hood River
	Agency Totals:		223,500	.....	
				Yakima Tribe		
Clark Flat						
	SP Chinook	2000	229,000	03/15/00 06/01/00	Clark Flat Acclim Pd	Yakama River

Hatchery Release Summary

From 4/14/00 to 4/27/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
Easton Pond							
	SP Chinook	2000	236,800	03/15/00	06/01/00	Easton Pd	Yakama River
Jack Creek Pond							
	SP Chinook	2000	137,500	03/31/00	06/01/00	Jack Creek Acclim Pd	Yakama River
Prosser							
	FA Chinook	2000	160,000	04/20/00	04/20/00	Prosser Acclim Pd	Yakama River
Winthrop							
	Coho	2000	200,000	04/26/00	05/15/00	Winthrop H	Methow River
Agency Totals:			963,300	.....		
Total Release..			27,237,163				

Hatchery Release Summary

From 4/28/00 to 5/11/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin... ..End	Release Site	River Name
IDFG						
Niagara Springs						
	SU Steelhead	2000	180,000	05/02/00 05/05/00	Hammer Cr	Salmon River
	Agency Totals:		180,000	.....	
Nez Perce Tribe						
Magic Valley						
	SU Steelhead	2000	100,000	05/03/00 05/03/00	Newsome Cr	S Fk Clearwater River
	SU Steelhead	2000	100,000	05/05/00 05/05/00	American R	S Fk Clearwater River
	SU Steelhead	2000	25,000	05/08/00 05/08/00	Mill Cr	S Fk Clearwater River
	SU Steelhead	2000	25,000	05/08/00 05/08/00	Meadow Cr	S Fk Clearwater River
	SU Steelhead	2000	10,000	05/08/00 05/08/00	Red R	S Fk Clearwater River
	Agency Totals:		260,000	.....	
ODFW						
Big Canyon						
	SU Steelhead	2000	65,250	05/10/00 05/20/00	Big Canyon H	Grande Ronde River
	SU Steelhead	2000	65,250	05/11/00 05/25/00	Big Canyon H	Grande Ronde River
Irrigon						
	SU Steelhead	2000	3,000	05/03/00 05/07/00	Deer Cr	Grande Ronde River
Li Sheep						
	SU Steelhead	2000	75,000	05/11/00 05/22/00	L Sheep Acclim Pd	Imnaha River
Round Butte						
	SP Chinook	2000	30,000	05/10/00 05/10/00	Bel. Pelton Dam	Deschutes River
Wallowa						
	SU Steelhead	2000	108,750	05/03/00 05/03/00	Wallowa Acclim Pd	Wallowa River
	SU Steelhead	2000	108,750	05/04/00 05/18/00	Wallowa Acclim Pd	Wallowa River
	Agency Totals:		456,000	.....	
USFWS						
Dworshak						
	SU Steelhead	2000	1,300,000	05/01/00 05/04/00	Dworshak H	Clearwater Rvr M F
	Agency Totals:		1,300,000	.....	
WDFW						
Dryden Pond						
	SU Chinook	2000	651,000	05/01/00 05/01/00	Dryden Acclim Pd	Wenatchee River
Klickitat						
	SP Chinook	2000	150,000	05/01/00 05/05/00	Upper Klickitat R	Klickitat River
Wells						
	SU Chinook	2000	205,000	05/02/00 05/02/00	Carlton Acclim Pd	Methow River
	Agency Totals:		1,006,000	.....	
Yakima Tribe						
Cle Elum Slough						
	Coho	2000	125,000	05/01/00 05/05/00	Cle Elum R	Yakama River
Easton Pond						
	Coho	2000	125,000	05/01/00 05/05/00	Easton Pd	Yakama River
Lost Creek						
	Coho	2000	125,000	05/01/00 05/05/00	Lost Creek Acclim Pd	Yakama River
Stiles Pond						
	Coho	2000	125,000	05/01/00 05/05/00	Naches R	Yakama River
	Agency Totals:		500,000	.....	
	Total Release..		3,702,000			

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK

	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/14/00	1,085	90	104	689	30,546	2,173	5,279	15	5,501	6,060	5,209
04/15/00	---	82	---	---	46,948	8,411	14,475	10	5,641	8,970	6,208
04/16/00	---	138	---	---	46,886	18,315	18,570	24	4,829	8,091	7,634
04/17/00	181	313	19	737	60,683	23,366	16,550	17	7,156	7,967	12,059
04/18/00	320	164	41	185	25,168	26,993	12,392	20	4,961	6,611	11,768
04/19/00	814	93	56	97	26,152	24,086	8,911	31	7,366	5,722	13,847
04/20/00	517	111	138	229	24,496	22,387	13,415	319	7,608	13,084	16,484
04/21/00	421	254	186	258	53,228	27,443	13,290	214	10,985	11,584	20,186
04/22/00	---	151	---	---	125,476	36,817	17,078	121	13,565	8,135	91,137
04/23/00	---	---	---	---	93,455	38,874	17,912	212	13,543	12,096	68,262
04/24/00	213	204	131	589	80,939	74,969	33,283	84	15,743	11,036	74,418
04/25/00	260	136	172	369	59,642	70,087	39,862	83	14,291	14,727	36,045
04/26/00	247	107	108	358	141,908	123,058	25,958	80	16,107	14,295	38,299
04/27/00	216	92	78	258	59,231	47,059	18,922	99	19,037	13,682	52,328
Total:	4,274	1,935	1,033	3,769	874,758	544,038	255,897	1,329	146,333	142,060	453,884
# Days:	10	13	10	10	14	14	14	14	14	14	14
Average:	427	149	103	377	62,483	38,860	18,278	95	10,452	10,147	32,420

COMBINED SUBYEARLING CHINOOK

	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/14/00	0	0	0	4	0	0	0	30	269	20	909
04/15/00	---	4	---	---	65	0	0	22	162	0	1,129
04/16/00	---	0	---	---	138	0	0	20	87	0	1,022
04/17/00	0	0	0	4	793	0	0	46	461	142	295
04/18/00	0	0	0	1	0	0	0	20	1,010	0	457
04/19/00	0	0	0	3	0	0	0	96	609	67	486
04/20/00	0	1	0	1	131	0	0	55	361	15	596
04/21/00	0	0	0	2	929	0	0	23	630	20	113,815
04/22/00	---	2	---	---	0	0	0	24	842	177	339,636
04/23/00	---	---	---	---	0	0	0	15	1,541	0	57,117
04/24/00	0	0	0	9	0	0	0	61	438	123	31,076
04/25/00	0	0	0	7	0	0	0	39	1,638	434	14,580
04/26/00	0	0	0	2	197	0	0	52	1,773	773	4,681
04/27/00	0	1	0	0	0	0	0	17	2,565	444	4,746
Total:	0	8	0	33	2,253	0	0	520	12,386	2,215	570,545
# Days:	10	13	10	10	14	14	14	14	14	14	14
Average:	0	1	0	3	161	0	0	37	885	158	40,753

* See sampling comments <http://www.fpc.org/2000Daily/smpcomments.htm>

These data are preliminary and have been derived from various sources. For verification and/or origin of these data, contact the operators of the Fish Passage Data System at (503) 230-4099.

Two-Week Summary of Passage Indices

COMBINED COHO

	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/14/00	0	0	0	0	0	0	0	1	24	20	1,618
04/15/00	---	0	---	---	0	0	0	0	49	61	1,783
04/16/00	---	0	---	---	138	0	0	4	35	0	2,871
04/17/00	0	0	0	2	0	0	0	3	132	0	2,310
04/18/00	0	0	0	0	0	131	0	0	55	295	2,245
04/19/00	0	0	0	2	0	129	0	0	111	200	3,207
04/20/00	0	0	0	3	0	0	0	2	155	579	5,610
04/21/00	0	0	0	1	0	130	0	0	57	247	4,768
04/22/00	---	0	---	---	0	0	0	0	133	531	12,366
04/23/00	---	---	---	---	0	0	0	7	62	989	12,073
04/24/00	0	0	0	9	249	0	0	0	88	1,017	17,173
04/25/00	0	0	0	3	196	294	0	0	76	1,223	6,885
04/26/00	0	0	0	7	786	629	0	2	116	1,499	4,255
04/27/00	0	0	0	4	400	0	142	0	114	1,328	8,519
Total:	0	0	0	31	1,769	1,313	142	19	1,207	7,989	85,683
# Days:	10	13	10	10	14	14	14	14	14	14	14
Average:	0	0	0	3	126	94	10	1	86	571	6,120

COMBINED STEELHEAD

	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/14/00	10	27	607	81	26,793	7,305	3,261	5	2,820	13,470	1,020
04/15/00	---	87	---	---	39,167	9,471	3,762	3	1,991	17,423	1,106
04/16/00	---	96	---	---	39,301	10,365	3,882	15	2,466	12,552	3,850
04/17/00	22	307	246	241	44,157	14,336	3,357	27	2,568	12,662	4,136
04/18/00	41	83	142	72	44,857	24,752	3,044	23	3,059	8,051	4,636
04/19/00	159	107	177	47	56,133	30,234	4,730	24	3,231	8,317	9,669
04/20/00	121	313	193	145	41,263	42,726	9,874	28	3,777	7,545	7,894
04/21/00	85	1,013	168	279	40,220	21,955	10,021	24	8,259	8,189	4,463
04/22/00	---	759	---	---	149,103	20,450	21,816	27	12,632	9,019	6,871
04/23/00	---	---	---	---	288,135	22,147	16,899	62	10,094	10,803	3,251
04/24/00	45	586	386	668	219,408	55,505	20,668	56	10,830	16,780	6,951
04/25/00	105	259	182	275	219,516	92,060	41,718	44	10,457	15,467	1,215
04/26/00	73	199	174	560	194,779	181,057	39,958	71	7,822	15,530	5,106
04/27/00	250	128	236	613	77,841	58,043	61,889	104	16,016	12,998	11,074
Total:	911	3,964	2,511	2,981	1,480,673	590,406	244,879	513	96,022	168,806	71,242
# Days:	10	13	10	10	14	14	14	14	14	14	14
Average:	91	305	251	298	105,762	42,172	17,491	37	6,859	12,058	5,089

Smolt indices, clipped & unclipped 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 sampled powerhouse. 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-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Two-Week Summary of Passage Indices

COMBINED SOCKEYE

	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/14/00	0	0	0	0	132	279	0	0	0	0	22
04/15/00	---	0	---	---	131	24	30	17	49	30	0
04/16/00	---	0	---	---	0	60	32	74	17	0	0
04/17/00	0	0	0	0	0	0	96	30	132	0	27
04/18/00	0	0	0	0	0	0	0	21	147	0	0
04/19/00	0	0	0	0	0	0	0	24	277	0	49
04/20/00	0	0	0	0	0	0	125	22	292	6	0
04/21/00	0	0	0	0	0	268	0	45	572	61	0
04/22/00	---	0	---	---	0	0	0	58	665	88	0
04/23/00	---	---	---	---	0	0	46	84	985	152	464
04/24/00	0	0	0	1	0	177	107	44	1,842	213	0
04/25/00	0	0	0	0	0	0	109	104	2,019	732	0
04/26/00	0	0	0	0	0	0	146	135	1,965	1,087	0
04/27/00	0	0	0	0	0	157	0	24	3,078	1,143	608
Total:	0	0	0	1	263	965	691	682	12,040	3,512	1,148
# Days:	10	13	10	10	14	14	14	14	14	14	13
Average:	0	0	0	0	19	69	49	49	860	251	88

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)}

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 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)}

BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

LEW and WTB data collected for the FPC by Idaho Dept. of Fish and Game.

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.

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 04/27

DAM	Spring Chinook						Summer Chinook						Fall Chinook					
	2000		1999		10-Yr Avg.		2000		1999		10-Yr Avg.		2000		1999		10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	109,950	4,463	14,542	346	35,669	343	0	0	0	0	0	0	0	0	0	0	0	0
TDA	55,297	1,981	3,799	93	16,249	115	0	0	0	0	0	0	0	0	0	0	0	0
JDA	26,051	659	2,037	23	9,497	86	0	0	0	0	0	0	0	0	0	0	0	0
MCN	15,418	554	594	56	6,434	64	0	0	0	0	0	0	0	0	0	0	0	0
IHR	8,045	323	122	0	2,487	10	0	0	0	0	0	0	0	0	0	0	0	0
LMN	4,437	203	45	3	1,516	10	0	0	0	0	0	0	0	0	0	0	0	0
LGS	3,094	132	25	0	**	**	0	0	0	0	**	**	0	0	0	0	**	**
LWG	2,547	124	18	1	742	3	0	0	0	0	0	0	0	0	0	0	0	0
PRD	1351*	0	39	0	598	1	0	0	0	0	0	0	0	0	0	0	0	0
RIS	54	1	3	0	61	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH	5	0	1	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL	0	0					0	0					0	0				

DAM	Coho						Sockeye			Steelhead			
	2000		1999		10-Yr Avg.		10-Yr			10-Yr			Wild
	Adult	Jack	Adult	Jack	Adult	Jack	2000	1999	Avg.	2000	1999	Avg.	2000
BON	0	0	0	0	0	0	0	0	0	1,855	1,109	2,168	748
TDA	0	0	0	0	0	0	0	0	0	395	265	1,149	207
JDA	0	0	0	0	0	0	0	0	0	2,290	2,570	2,428	910
MCN	0	0	0	0	0	0	0	0	0	571	225	1,780	205
IHR	0	0	0	0	0	0	0	0	0	702	681	2,147	339
LMN	0	0	0	0	0	0	0	0	0	806	531	2,118	442
LGS	0	0	0	0	**	**	0	0	**	787	796	**	401
LWG	0	0	0	0	0	0	0	0	0	2,316	2,919	4,978	763
PRD	0	0	0	0	0	0	0	3	0	1*	3	13	***
RIS	0	0	0	0	0	0	0	0	0	10	10	20	5
RRH	0	0	0	0	0	0	0	0	0	40	24	21	12
WEL	0	0	0	0	0	0	0	0	0	0			0

* PRD data was obtained from Grant Co. PUD's website and has not yet been added to our database.

LGS, LMN and PRD are through 04/26, RIS and RRH are through 04/23.

Note: LMN is missing 4/8, JDA has a partial count on 4/16 and is missing 4/22 and 4/25.

These numbers were collected from the COE's Running Sums text files.

Wild steelhead numbers are included in the total.

**Adult count records at Little Goose Dam have been maintained since 1991, visual counts were not conducted at Little Goose Dam between 1982 and 1990.

***PRD is not reporting Wild Steelhead numbers.

Historic counts (pre-1996) were obtained from CRITFC and compiled by the FPC.

Historic counts 1997 to present were obtained from the Corps of Engineers.

TRANSPORTATION SUMMARY FOR THE PAST TWO WEEKS

Two-week Transportation Summary

April 14 through April 27, 2000

Site	Data	Chinook		Sockeye	Steelhead	Coho	Grand Total
		Subyearling	Yearling				
LGR	Number By Passed	0	26609	0	43694	0	70303
	Number Trucked	0	0	0	0	0	0
	Number Barged	0	633976	160	1052189	1300	1687625
	Sum of Total Transported	0	633976	160	1052189	1300	1687625
LGS	Number By Passed	0	0	0	0	0	0
	Number Trucked	0	0	0	0	0	0
	Number Barged	0	390214	715	442861	920	834710
	Sum of Total Transported	0	390214	715	442861	920	834710
LMN	Number By Passed	0	200	0	177	0	377
	Number Trucked	0	0	0	0	0	0
	Number Barged	0	172351	409	166647	100	339507
	Sum of Total Transported	6396	172351	409	166647	100	345903
MCN	Number By Passed	0	75499	6116	49022	625	131262
	Number Trucked	6396	0	0	0	0	6396
	Number Barged	0	0	0	0	0	0
	Sum of Total Transported	0	0	0	0	0	0
Total Number By Passed		6396	102308	6116	92893	625	208338
Total Number Trucked		0	0	0	0	0	0
Total Number Barged		0	1196541	1284	1661697	2320	2861842
Total Sum of Total Transported		0	1196541	1284	1661697	2320	2861842

Cumulative Transportation Data through April 27, 2000

		Species --					
		Chinook		Coho	Sockeye	Steelhead	Total
Site	Data	Subyearling	Yearling				
LGR	Collected	76	714558	1394	410	1188756	1905194
	Bypassed	0	27751	0	2	51494	79247
	Barged	0	658571	1410	468	1099018	1759467
	Trucked	76	6084	16	160	11238	17574
LGS	Collected		351505	920	739	405552	758716
	Bypassed		0	0	0	0	0
	Barged		391160	920	715	447159	839954
	Trucked		4308	0	60	6791	11159
LMN	Collected		174318	110	400	161217	336045
	Bypassed		362	0	0	200	562
	Barged		180726	100	409	167310	348545
	Trucked		25741	10	10	810	26571
MCN	Collected	8467	106690	828	6172	97652	219809
	Bypassed	8454	106565	828	6168	97622	219637
	Barged	0	0	0	0	0	0
	Trucked	0	0	0	0	0	0
Total Collected		8543	1347071	3252	7721	1853177	3219764
Total Bypassed		8454	134678	828	6170	149316	299446
Total Barged		0	1230457	2430	1592	1713487	2947966
Total Trucked		76	36133	26	230	18839	55304

