



Fish Passage Center

Weekly Report #00 - 7

April 21, 2000

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SUMMARY OF EVENTS:

Water Supply: Precipitation over the past week significantly increased compared to the previous week, resulting in increased inflows in the system. The highest precipitation for the April 1-18 period was recorded at Kootenai, with 147% of normal and Flathead, with 170% of normal. The lowest precipitation was recorded for Hood River and the Lower Deschutes, with 56% of normal, Umatilla/Lower John Day with 59% of normal and Clearwater with 60% of normal. The precipitation at Columbia above Coulee for the same period was 141% of normal, for the Snake River above Ice Harbor was 71% of normal and for the Columbia above The Dalles was 98% of normal for the period of April 1-18. The new April mid-month Runoff Volume Forecast has been issued. The forecast is presented in the following table.

Site	April 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.)	2.19	100	2.18	100	2.09	96
Libby (April-Sept.)	7.01	104	7.55	111	7.29	108
Grand Coulee (Jan.-July)	65.5	104	67.0	106	65.8	104
The Dalles (Jan.-July)	105.0	99	105	99	105	99
Brownlee (April-July)	3.9	67	4.03	70	3.93	68
Dworshak (April-July)	2.69	100	2.61	97	2.67	99
Lower Granite (Jan.-July)	26.7	90	26.3	88	26.7	90
Heise NR-ID (April-July)	2.9	84	2.91	84	2.94	85
Weiser -ID (April-July)	3.6	66	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 20, and 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 20, 2000 in [ft]
Libby	2345.07	2343.1
Hungry Horse	3504.75	3503.2
Grand Coulee	1251.7	1239.6
Brownlee	2058.09*	2056.2
Dworshak	1525.73	1510.4

* elevation as of April 19

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

Hungry Horse was operated toward the end of April flood control elevation. Currently, inflows are increasing from 5 kcfs on April 17 to 10.9 kcfs on April 20, due to snowmelt and increased precipitation in the basin. The actual outflows also increased from 4.6 kcfs on April 15 to 6.16 kcfs on April 20.

Grand Coulee continued to be drafted to an end of April flood control elevation. Inflows increased from 119.3 kcfs on April 14 to 149.7 kcfs on April 20. Outflows are also increased from 102.3 kcfs on April 15 to 170.4 kcfs on April 19.

Brownlee continued with flood control operations. Current inflows were in the range of 31.8 kcfs on April 18 to 34.01 kcfs on April 14. Current outflows at Hells Canyon Dam were in the range of 30.25 kcfs to 32.44 kcfs for the

period of April 14-20, resulting in spill at all projects at Hells Canyon complex due to flood control.

Dworshak continued to be operated for flood control operations through the end of April. Due to initiation of the snowmelt and high precipitation in the basin, the inflows increased to range of 19 kcfs-24.5 kcfs in period of April 14-20. Outflows were increased to maximum allowed outflow in compliance with Idaho State Total Dissolved Gas standards. Outflows were in the range of 15.4 kcfs -16 kcfs for the period of April 14-20.

Spill: Increased outflow from Dworshak Dam resulted in approximately 5 Kcfs spill over the past week as the project continued drafting towards its end of April flood control elevation. Spill for fish passage continue at the Lower Snake projects.

Spill for fish passage at the Lower Columbia River projects began this past week, based on fish movement through the hydrosystem. Some of the spill at the Lower Columbia projects provided this past week was excess generation spill. The Spill Plan Agreement modifies spill at the lower Columbia Projects. The Dalles spill will be reduced from 64% to 40% for 24 hours each day. Nighttime 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 was initiated this past week 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 at, or near, the allowable TDGS levels at all locations measured. Monitoring for signs of gas bubble trauma (GBT) on fish collected through the Smolt Monitoring Program was conducted this past week. One yearling chinook each at Lower Monumental and Rock Island dams was detected with gas bubbles in their fins.

Smolt Monitoring Program. *Snake River basin:* Smolt numbers collected this week fluctuated greatly at all four traps. Yearling chinook dominated the collections at the Salmon R. trap (WTB) and Snake R. trap (LEW); yearling chinook and steelhead were fairly equally represented at the Imnaha R. trap (IMN); and steelhead dominated the collections at the Grande Ronde R. trap (GRN). Passage indices at Lower Granite Dam (LGR) rose rapidly from April 10 to over 60,000 yearling chinook on April 17 before dropping back to around 25,000 fish the past three days. During this same time, the rise in steelhead passage indices at Lower Granite Dam has been more gradual, remaining between 39,000 and 45,000 fish during five of the past six days.

Mid-Columbia River: Smolt passage indices at Rock Island Dam (RIS) this week were split among yearling and subyearling chinook, steelhead, and sockeye in relatively low numbers (daily levels mostly = 30 fish per group).

Lower Columbia River: Yearling chinook passage indices rose to 7,300 fish last week at McNary Dam (MCN), fluctuated greatly during this week, and ended the week only slightly higher at 7,600 fish. With the Ringold Hatchery steelhead release past McNary Dam, this week saw steelhead passage indices dropped back to levels between 2,000 and 3,800 fish. The Ringold Hatchery steelhead are now contributing to the increasing steelhead passage indices at John Day (JDA) and Bonneville (BO2) dams this week. Yearling chinook passage indices increased from last week's levels at both John Day and Bonneville dams as increasing numbers of chinook from the Umatilla River basin are passing these sites (based on PIT tag detections).

Adult Fish Passage. Passage of adult spring chinook at Bonneville Dam through the week (4/14-4/20) ranged between 2,000 and 8,600. The cumulative count through April 20 was 70,307 approximately 10.2 times and 3 times greater than the respective 1999 count and 10-year average. The adult counts at other lower Columbia River projects were: The Dalles 28,898; John Day 14,089; and McNary 5,569. Mid-Columbia projects

began counting on April 15 except for Wells Dam where counting will begin on May 1. Fish counts at Priest Rapids Dam showed spring chinook arriving on the 15th with 152 chinook counted through April 19. Adult chinook recorded at Prosser Dam (Yakama River) totaled 89 through April 18. Through April 20, about 560 adult spring chinook have been counted at 3-Mile Dam located on the Umatilla River. Adult chinook at Ice Harbor Dam total 1,916 through April 20 and that was twice the 10-year average. Overall, counts of adult chinook appear to be holding up fairly well at Bonneville Dam with most of the fish passing the project classified as Age-4 or 2-ocean fish. Next week we should have some further information on lengths and Age categories from the sampling at the Bonneville adult lab.

Numbers of jack chinook are continuing to remain way above normal with Bonneville Dam reporting 1,416, about 11.8 times greater than the 10-year average. Jack salmon returns are generally used to estimate numbers of adult fish that will be returning the following 2 years. At present, survival of the 1999 migration from the upriver spring chinook stocks appears to be excellent.

Steelhead counts at Bonneville Dam ranged between 20 and 40 for the week with the cumulative count through April 20 of 1,515, below the 10-year average of 1,826. Wild steelhead totaled 660 for the season.

At Lower Granite Dam, the steelhead count totaled 2,108 through April 20 with about 31.7% of the steelhead reported as "wild". To date, the 2000 count of steelhead remains well below the 1999 and 10-year average.

Hatchery Releases. Approximately 29 million fish were released from Basin hatcheries during the past two weeks with about 6 million projected for the upcoming two weeks.

Snake River – The release of yearling spring and summer chinook was basically completed during the past week at State, Tribal and Federal hatcheries 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.

Yearling fall chinook releases are completed for the year with only subyearling fall chinook remaining to be released into the Snake River; normally late May or June time frame.

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 almost completed during the week with the large release from Leavenworth NFH. Only a small number of the Methow releases remain to be planted.

Juvenile steelhead releases were made in the Wenatchee, Entiat, Methow, and Okanogan rivers during the week and some releases will continue into May from Mid-Columbia hatcheries. Yearling summer chinook releases were initiated this week and will continue during the upcoming 2 weeks. 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 this week.

Lower Columbia - (from above Bonneville Dam to below McNary Dam). Yearling spring chinook releases were completed in the Reach with the Wind, Umatilla, Little White Salmon, Hood, and Deschutes rivers receiving plants from Federal, State and Tribal hatcheries.

Coho releases should be completed in this Reach with exception of the volitional release from Klickitat Hatchery remaining. Several million hatchery coho were released during the past week. The second large release of subyearling Tule fall chinook from Spring Creek NFH was completed as scheduled on April 20. 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
04/07/00	115.0	0.0	122.5	0.0	122.8	1.6	129.4	0.0	126.2	0.0	110.3	0.0	111.7	0.0
04/08/00	120.6	0.0	114.9	0.0	115.8	1.7	119.3	0.0	123.6	0.0	121.9	0.0	124.4	0.0
04/09/00	128.6	0.0	124.4	0.0	124.4	2.9	124.0	1.5	125.5	0.0	119.7	1.7	124.0	0.0
04/10/00	121.0	0.0	129.3	3.2	133.6	1.7	141.4	4.6	146.8	0.0	149.3	13.5	150.5	0.0
04/11/00	131.9	0.0	134.7	0.0	137.2	1.7	138.5	2.1	139.7	0.0	142.3	2.9	144.6	0.0
04/12/00	126.7	0.0	128.5	0.0	135.0	8.6	139.6	3.3	145.5	0.0	147.5	4.9	153.5	0.7
04/13/00	135.8	0.0	137.5	0.0	137.1	9.4	140.7	2.4	143.8	0.0	146.0	4.2	152.4	0.0
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

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

Date	Dworshak		Brownlee		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/07/00	15.4	4.6	29.1	28.3	83.3	15.1	85.3	0.0	90.6	24.3	91.0	59.8		
04/08/00	16.0	5.3	29.2	28.5	78.3	29.0	81.5	0.0	85.1	26.3	91.4	64.6		
04/09/00	15.9	5.1	28.3	25.6	74.4	27.7	77.0	0.0	82.0	28.3	84.2	64.3		
04/10/00	15.9	5.1	28.5	30.4	78.5	28.7	74.3	10.2	76.9	26.7	82.2	60.6		
04/11/00	15.9	5.1	28.5	28.9	81.8	20.1	82.7	20.1	83.2	29.0	85.4	59.2		
04/12/00	16.1	5.2	29.0	30.7	81.3	20.2	80.5	20.1	85.4	24.4	89.2	62.9		
04/13/00	16.2	5.3	30.2	30.6	95.7	23.1	92.9	21.4	98.6	21.1	102.4	66.9		
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	---	---	105.2	25.7	100.9	23.4	105.5	29.6	110.5	75.0		

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		
04/07/00	224.4	56.8	254.6	4.2	245.1	7.3	280.2	52.3	95.7	123.0
04/08/00	213.9	47.5	245.9	0.0	253.8	6.3	268.7	46.3	100.1	113.0
04/09/00	173.9	20.8	185.5	0.0	186.7	0.0	197.1	0.0	94.6	93.3
04/10/00	230.1	67.1	221.1	3.0	223.0	0.0	217.7	22.3	89.3	96.9
04/11/00	244.0	75.8	261.9	0.0	253.7	9.7	263.5	56.9	93.8	103.5
04/12/00	241.5	76.2	242.7	0.0	247.5	3.3	254.5	24.6	98.0	122.7
04/13/00	258.6	90.6	268.1	0.0	262.4	7.5	275.3	45.5	95.5	125.1
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

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		<u>24 h</u>	<u>12 h</u>	High
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg	
4/7	100	100	100	23	104	105	105	24	104	104	104	24	102	102	103	24	103	103	103	23			
4/8	100	100	100	24	106	109	112	24	105	106	107	24	103	103	104	24	104	105	105	23			
4/9	100	100	100	24	107	110	113	24	106	106	108	24	104	104	104	24	105	105	105	23			
4/10	100	100	100	24	108	111	112	24	106	106	107	24	103	104	104	24	104	104	105	23			
4/11	99	100	100	23	108	111	113	24	107	107	109	24	104	104	105	24	104	105	105	23			
4/12	98	99	99	24	107	110	114	24	107	107	107	24	104	105	105	24	105	105	105	23			
4/13	98	98	99	20	111	116	120	24	108	109	110	24	105	106	106	24	106	106	106	23			
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			

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		<u>24 h</u>	<u>12 h</u>	High
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg	
4/7	102	103	104	23	102	102	102	21	102	102	103	21	102	103	104	24	---	---	---	0			
4/8	104	105	105	23	103	104	104	15	104	104	104	15	105	105	106	24	---	---	---	0			
4/9	104	104	105	23	104	104	105	19	104	104	105	17	106	106	106	24	---	---	---	0			
4/10	106	109	132	23	104	104	104	17	104	105	109	17	106	106	106	21	---	---	---	0			
4/11	104	105	106	23	105	105	105	20	105	105	105	19	106	107	107	23	---	---	---	0			
4/12	104	105	105	23	104	104	105	18	106	107	109	19	106	107	107	22	---	---	---	0			
4/13	105	105	106	23	105	106	106	21	107	108	110	21	107	107	108	23	---	---	---	0			
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			

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		<u>24 h</u>	<u>12 h</u>	High
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg	
4/7	102	102	103	24	103	104	104	23	105	105	107	24	103	103	104	24	103	104	106	24			
4/8	103	103	104	24	104	105	105	24	106	106	107	24	104	104	104	24	104	105	106	24			
4/9	104	104	105	23	105	105	106	22	106	106	108	24	104	104	105	24	104	105	107	24			
4/10	105	105	105	24	106	106	109	22	105	105	107	24	106	106	110	24	106	105	107	24			
4/11	104	105	105	24	106	106	107	23	105	105	107	24	104	104	108	24	104	106	110	24			
4/12	105	106	106	23	106	107	108	23	107	107	109	24	106	106	108	24	106	107	110	24			
4/13	106	106	107	23	108	108	108	21	107	107	108	24	107	107	107	24	107	107	108	24			
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	---	---	---	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>Clrwtr-Peck</u>				<u>Anatone</u>			
	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
4/7	105	105	106	24	102	102	104	17	108	108	108	24	104	105	106	24	102	103	103	24
4/8	105	105	105	24	104	105	106	16	110	110	111	24	106	107	108	24	102	103	104	24
4/9	106	106	106	24	105	105	105	5	110	110	110	24	106	107	107	24	102	103	104	24
4/10	106	106	109	24	105	105	105	15	109	109	110	24	106	106	107	24	102	103	104	24
4/11	105	105	107	24	105	105	106	24	109	109	109	23	106	106	107	24	102	103	104	24
4/12	107	107	109	24	106	107	107	24	109	110	110	24	106	106	107	24	102	103	104	24
4/13	108	108	108	24	106	107	107	24	110	110	110	24	105	105	106	24	102	102	103	24
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	---	---	---	0	109	111	112	24	108	109	109	24	105	106	106	24	103	103	104	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwtr-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>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
4/7	103	105	106	24	101	102	103	24	106	111	121	24	103	104	108	24	102	103	103	24
4/8	104	106	108	24	103	104	106	24	112	121	122	24	104	104	106	24	103	104	104	24
4/9	104	106	107	24	104	104	105	24	112	119	120	24	103	103	104	24	103	103	104	24
4/10	104	105	107	23	105	105	106	24	112	115	119	24	108	112	114	24	108	113	117	24
4/11	104	105	106	24	105	105	106	24	110	110	110	24	112	114	115	24	114	117	119	24
4/12	104	105	106	24	105	105	106	24	110	110	111	24	114	115	116	24	116	119	119	24
4/13	103	104	104	24	105	105	106	24	110	110	111	24	111	112	113	24	114	117	119	24
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

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>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
4/7	101	102	103	24	109	113	118	24	107	109	112	24	115	116	120	24	105	106	107	22
4/8	102	103	104	24	114	117	119	24	109	112	114	24	116	117	120	24	107	108	109	24
4/9	104	104	104	24	116	118	119	24	111	113	114	24	115	116	117	24	110	111	113	24
4/10	104	104	105	23	116	120	123	23	111	113	114	24	115	116	117	24	111	113	115	24
4/11	104	104	105	24	114	122	123	24	113	115	119	24	115	115	116	24	110	111	113	24
4/12	110	114	116	24	115	121	123	24	113	115	116	24	115	116	117	24	110	111	112	24
4/13	115	116	117	24	118	121	121	24	113	115	116	24	116	119	121	24	111	111	112	21
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

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>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
4/7	104	105	107	22	114	115	117	22	102	103	104	23	104	107	111	24	102	103	103	23
4/8	106	108	109	24	114	115	116	24	103	104	104	23	103	103	104	24	103	103	103	23
4/9	107	108	108	24	111	113	114	24	103	103	103	23	103	103	103	24	103	103	103	23
4/10	110	112	115	24	115	117	117	24	103	104	105	23	104	105	111	24	102	103	104	23
4/11	109	110	111	24	116	117	117	24	105	106	108	23	105	105	106	23	103	104	104	23
4/12	110	110	110	24	116	117	120	24	107	108	115	23	107	108	108	22	105	105	106	23
4/13	110	111	111	24	118	119	121	24	109	109	109	23	108	108	109	24	107	107	107	23
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

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>CamasWashugal</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
4/7	103	104	106	24	101	101	102	22	107	107	107	23	105	106	107	23	105	106	107	23
4/8	104	105	106	24	102	103	103	23	107	108	108	23	106	107	108	23	106	107	107	24
4/9	103	103	103	24	104	105	105	23	105	105	106	23	105	105	106	23	106	106	107	24
4/10	102	103	104	24	102	102	103	23	103	104	109	23	104	105	110	23	105	106	107	24
4/11	104	105	108	24	103	103	103	23	108	110	112	23	109	112	115	23	109	113	117	24
4/12	105	106	109	24	103	104	104	23	106	108	109	23	106	107	107	23	108	109	110	24
4/13	108	109	109	24	105	105	106	23	108	109	110	23	108	109	109	23	107	108	110	24
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

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													
	04/17/00	Yearling Chinook	83	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/17/00	Steelhead	84	1	0	0.00%	0.00%	0	0	0	0	1	1
Little Goose Dam													
	04/12/00	Steelhead	4	0	0	0.00%	0.00%	0	0	0	0	0	0
	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
Lower Monumental Dam													
	04/17/00	Yearling Chinook	100	2	1	1.00%	0.00%	1	0	0	0	1	1
	04/17/00	Steelhead	76	2	0	0.00%	0.00%	0	0	0	0	2	1
Ice Harbor Dam													
	04/11/00	Steelhead	3	0	0	0.00%	0.00%	0	0	0	0	0	0
	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
McNary Dam													
	04/13/00	Yearling Chinook	76	1	0	0.00%	0.00%	0	0	0	0	1	1
	04/13/00	Steelhead	51	2	0	0.00%	0.00%	0	0	0	0	2	1
	04/17/00	Yearling Chinook	82	1	0	0.00%	0.00%	0	0	0	0	1	1
	04/17/00	Steelhead	46	3	0	0.00%	0.00%	0	0	0	0	3	1.3
	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
Bonneville Dam													
	04/13/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/13/00	Steelhead	34	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/17/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/17/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	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
Rock Island Dam													
	04/11/00	Yearling Chinook	8	1	0	0.00%	0.00%	0	0	0	0	1	1
	04/11/00	Steelhead	1	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/13/00	Yearling Chinook	18	6	0	0.00%	0.00%	0	0	0	0	6	1
	04/13/00	Steelhead	10	1	0	0.00%	0.00%	0	0	0	0	1	1
	04/17/00	Yearling Chinook	10	0	0	0.00%	0.00%	0	0	0	0	0	0
	04/17/00	Steelhead	14	1	1	7.14%	0.00%	0	1	0	0	0	0
	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

Hatchery Release Summary

From 4/7/00 to 4/20/00

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
	SP Chinook	2000	396,060	04/10/00	04/13/00	Crooked R Acclim Pd	S Fk Clearwater River
Magic Valley							
	SU Steelhead	2000	52,000	04/03/00	05/12/00	Squaw Cr Acclim Pd	Salmon River
	SU Steelhead	2000	100,000	04/10/00	04/11/00	Squaw Cr Acclim Pd	Salmon River
	SU Steelhead	2000	115,423	04/11/00	04/12/00	Little Salmon R	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	60,000	04/15/00	04/25/00	N Fk 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
Niagara Springs							
	SU Steelhead	2000	601,907	03/27/00	04/08/00	Hells Canyon Dam	Snake River
	SU Steelhead	2000	830,000	03/27/00	04/09/00	Pahsimeroi H	Pahsimeroi River
	SU Steelhead	2000	190,995	04/10/00	04/13/00	Little Salmon R	Salmon River
Pahsimeroi							
	SU Chinook	2000	53,900	04/12/00	04/25/00	Pahsimeroi H	Pahsimeroi River
Powell							
	SP Chinook	2000	293,522	04/10/00	04/13/00	Powell Acclim Pd	Lochsa River
Rapid River							
	SP Chinook	2000	2,463,000	03/16/00	04/19/00	Rapid River H	Little Salmon River
Sawtooth							
	SP Chinook	2000	124,500	04/04/00	04/21/00	Sawtooth H	Salmon River
Agency Totals:			6,112,489	.....		
Nez Perce Tribe							
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
Lyons Ferry							
	FA Chinook	2000	131,324	04/11/00	04/13/00	Cpt John Acclim Pd	Snake River
	FA Chinook	2000	131,306	04/11/00	04/13/00	Big Canyon (Clearwater	Clearwater Rvr M F
	FA Chinook	2000	134,709	04/11/00	04/13/00	Pittsburg Landing	Snake River
Agency Totals:			702,339	.....		
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
Li Sheep							

Hatchery Release Summary

From 4/7/00 to 4/20/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
Lookingglass	SU Steelhead	2000	155,000	04/13/00	04/13/00	L Sheep Acclim Pd	Imnaha River
	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
Wallowa	SU Steelhead	2000	348,000	04/05/00	04/07/00	Wallowa Acclim Pd	Wallowa River
	Agency Totals:			1,456,000	.....	
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
	SU Steelhead	2000	50,000	04/03/00	04/10/00	Bonifer Acclim Pd	Umatilla River
Minthorn	SU Steelhead	2000	50,000	04/03/00	04/10/00	Minthorn Acclim Pd	Umatilla River
	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:			1,415,000	.....	
USFWS							
Carson	SP Chinook	2000	1,420,000	04/20/00	04/20/00	Carson H	Wind River
	SU Steelhead	2000	200,000	04/17/00	04/21/00	Clear Cr	Clearwater Rvr M F
Dworshak	SU Steelhead	2000	600,000	04/17/00	04/21/00	Redhouse (SFk)	Clearwater Rvr M F
	Coho	2000	500,000	04/19/00	04/25/00	Little Salmon R	Little Salmon River
Eagle Creek	SU Steelhead	2000	50,000	04/03/00	04/07/00	Hazard Cr	Little Salmon River
	SU Steelhead	2000	150,000	04/03/00	04/07/00	Little Salmon R	Salmon River
Hagerman	SP Chinook	2000	50,000	04/06/00	04/07/00	Clear Cr	Clearwater Rvr M F
	SP Chinook	2000	379,000	04/06/00	04/07/00	Kooskia H	Clearwater Rvr M F
Kooskia	SP Chinook	2000	1,695,000	04/18/00	04/18/00	Leavenworth H	Wenatchee River
	SU Steelhead	2000	1,100,000	04/17/00	04/20/00	Little White Salmon H	Little White Salmon River
Leavenworth	Coho	2000	550,000	04/20/00	04/20/00	Little White Salmon H	Little White Salmon River
	FA Chinook	2000	4,309,676	04/20/00	04/20/00	Spring Creek H	Columbia River
L White Salmon	Coho	2000	980,000	04/17/00	04/20/00	Willard H	Little White Salmon River
Spring Creek							
Willard							

Hatchery Release Summary

From 4/7/00 to 4/20/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin... ..End	Release Site	River Name
Winthrop						
	SU Steelhead	2000	105,000	04/12/00 05/31/00	Winthrop H	Methow River
	SP Chinook	2000	376,500	04/12/00 04/12/00	Winthrop H	Methow River
Warm Springs						
	SP Chinook	2000	679,982	03/22/00 04/19/00	Warm Springs H	Deschutes River
Agency Totals:			13,145,15	.....	
WDFW						
Chewuch						
	SP Chinook	2000	218,000	04/19/00 04/19/00	Chewuch R	Methow River
Chiwawa						
	SP Chinook	2000	76,000	04/10/00 04/10/00	Chiwawa H	Wenatchee River
	SU Steelhead	2000	25,600	04/17/00 04/24/00	Chiwawa H	Wenatchee River
	SU Steelhead	2000	43,400	04/17/00 04/24/00	Chiwawa H	Wenatchee River
	SU Steelhead	2000	30,600	04/17/00 04/24/00	Chiwawa H	Wenatchee River
East Bank						
	SU Steelhead	2000	45,000	04/18/00 04/20/00	Wenatchee R	Wenatchee River
	SU Steelhead	2000	30,000	04/18/00 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	125,000	03/25/00 04/30/00	Dayton Acclim Pd	Touchet River
	SU Steelhead	2000	250,000	03/25/00 04/30/00	Cottonwood Acclim Pd	Grande Ronde 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
Ringold Springs						
	SU Steelhead	2000	180,000	04/03/00 04/12/00	Ringold Springs H	Mid-Columbia River
Tucannon						
	SP Chinook	2000	128,000	03/10/00 04/20/00	Curl Lake	Tucannon River
Turtle Rock						
	SU Chinook	2000	218,000	04/20/00 04/20/00	Turtle Rock H	Mid-Columbia River
Wells						
	SU Chinook	2000	293,000	04/13/00 04/21/00	Similkameen Acclim Pd	Okanogan River
	SU Chinook	2000	466,000	04/17/00 04/25/00	Wells H	Mid-Columbia 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	Chewuch R	Methow River
	SU Steelhead	2000	140,000	04/17/00 04/30/00	Methow R	Methow River
	SU Chinook	2000	205,000	04/19/00 04/30/00	Carlton Acclim Pd	Methow River
Agency Totals:			5,260,500	.....	

Warm Spgs Tribe

Oak Springs

Hatchery Release Summary

From 4/7/00 to 4/20/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates...		Release Site	River Name
				Begin...	...End		
	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	40,000	04/10/00	04/24/00	Jones Creek Acclim Pd	Hood River
	SP Chinook	2000	30,500	04/10/00	04/25/00	Parkdale 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
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
	Agency Totals:		763,300	.....		
	Total Release..		29,078,286				

Hatchery Release Summary

From 4/21/00 to 5/4/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
IDFG							
Clearwater							
	SU Steelhead	2000	180,000	04/21/00	04/25/00	Clear Cr	Clearwater Rvr M F
	SU Steelhead	2000	300,000	04/24/00	04/28/00	Redhouse (SFk)	Clearwater Rvr M F
Magic Valley							
	SU Steelhead	2000	300,000	04/24/00	04/27/00	Little Salmon R	Salmon River
	SU Steelhead	2000	250,000	04/24/00	05/09/00	Squaw Cr Acclim Pd	Salmon River
	SU Steelhead	2000	270,000	04/27/00	05/02/00	E Fk Salmon R	Salmon River
Niagara Springs							
	SU Steelhead	2000	180,000	05/02/00	05/05/00	Hammer Cr	Salmon River
Sawtooth							
	SU Steelhead	2000	550,000	04/26/00	04/26/00	Sawtooth H	Salmon River
	Agency Totals:		2,030,000	.....		
Nez Perce Tribe							
Clearwater							
	SU Steelhead	2000	140,000	05/04/00	05/04/00	Red R	S Fk Clearwater River
Magic Valley							
	SU Steelhead	2000	100,000	05/03/00	05/03/00	Newsome Cr	S Fk Clearwater River
	Agency Totals:		240,000	.....		
ODFW							
Irrigon							
	SU Steelhead	2000	3,000	05/03/00	05/07/00	Deer Cr	Grande Ronde 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:		220,500	.....		
USFWS							
Dworshak							
	SU Steelhead	2000	1,300,000	05/01/00	05/04/00	Dworshak H	Clearwater Rvr M F
Hagerman							
	SU Steelhead	2000	150,000	04/26/00	05/08/00	Little Salmon R	Salmon River
	SU Steelhead	2000	200,000	04/26/00	04/26/00	Sawtooth H	Salmon River
	Agency Totals:		1,650,000	.....		
WDFW							
Dryden Pond							
	SU Chinook	2000	651,000	04/27/00	04/30/00	Dryden Acclim Pd	Wenatchee River
Klickitat							
	SP Chinook	2000	150,000	05/01/00	05/05/00	Upper Klickitat R	Klickitat River
Skamania							
	SU Steelhead	2000	100,000	04/27/00	05/01/00	Klickitat R	Klickitat River
	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 River
Wells							
	SU Steelhead	2000	67,000	04/22/00	05/22/00	Bel. Wells Dam	Mid-Columbia River

Hatchery Release Summary

From 4/21/00 to 5/4/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates...		Release Site	River Name
				Begin...	...End		
	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:			1,164,000	.....		
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
Winthrop							
	Coho	2000	200,000	04/26/00	05/15/00	Winthrop H	Methow River
Agency Totals:			700,000	.....		
Total Release..			6,004,500				

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)
04/08/00	---	176	---	---	3,139	733	3,324	50	3,084	3,430	2,373
04/09/00	---	149	---	---	1,285	616	1,459	22	4,024	3,132	1,944
04/10/00	655	171	71	229	1,041	1,102	530	12	2,595	1,638	1,693
04/11/00	814	158	92	112	4,119	546	1,012	12	5,353	5,054	2,628
04/12/00	676	140	101	90	8,322	738	614	41	5,490	4,312	3,260
04/13/00	741	221	117	127	13,912	773	2,066	25	7,340	4,980	4,142
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	---	24,496	22,387	13,415	319	7,608	13,084	16,484
04/21/00	---	---	---	---	---	---	---	---	10,985	---	---
Total:	5,803	2,006	739	2,266	292,697	130,239	98,597	598	81,933	79,051	89,249
# Days:	9	13	9	8	13	13	13	13	14	13	13
Average:	645	154	82	283	22,515	10,018	7,584	46	5,852	6,081	6,865

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)
04/08/00	---	0	---	---	198	0	0	84	445	44	1,009
04/09/00	---	0	---	---	248	0	0	128	269	12	927
04/10/00	0	0	0	13	0	0	0	116	280	8	661
04/11/00	0	0	0	2	0	0	0	98	338	0	657
04/12/00	0	0	0	0	0	0	0	48	128	0	914
04/13/00	0	2	0	2	0	0	0	15	450	15	232
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	0	0	---	131	0	0	55	361	15	596
04/21/00	---	---	---	---	---	---	---	---	630	---	---
Total:	0	6	0	29	1,573	0	0	778	5,499	323	9,294
# Days:	9	13	9	8	13	13	13	13	14	13	13
Average:	0	0	0	4	121	0	0	60	393	25	715

* 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.

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 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 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 COHO

	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/08/00	---	0	---	---	30	0	0	4	17	10	2,085
04/09/00	---	0	---	---	0	0	0	0	69	34	1,198
04/10/00	0	0	0	3	16	0	0	0	20	16	950
04/11/00	0	0	0	0	0	0	0	0	23	0	1,162
04/12/00	0	0	0	1	53	0	0	1	0	0	2,159
04/13/00	0	0	0	0	27	0	0	0	45	30	1,297
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	---	0	0	0	2	155	579	5,610
04/21/00	---	---	---	---	---	---	---	---	57	---	---
Total:	0	0	0	8	264	260	0	15	792	1,245	28,495
# Days:	9	13	9	8	13	13	13	13	14	13	13
Average:	0	0	0	1	20	20	0	1	57	96	2,192

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)
04/08/00	---	16	---	---	9,722	1,068	229	4	941	1,726	211
04/09/00	---	7	---	---	6,285	1,188	208	1	1,765	2,326	271
04/10/00	12	8	84	57	8,361	3,655	107	7	6,235	867	351
04/11/00	15	17	120	44	14,473	2,658	184	1	38,094	1,654	1,061
04/12/00	13	15	116	64	10,083	3,129	159	10	13,875	1,356	997
04/13/00	32	143	172	54	14,549	4,341	831	13	5,448	2,805	793
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	---	41,263	42,726	9874	22	292	7,545	7,894
04/21/00	---	---	---	---	---	---	---	---	8,259	---	---
Total:	425	1,226	1,857	660	355,144	155,228	33,628	155	91,044	90,754	35,995
# Days:	9	13	9	8	13	13	13	13	14	13	13
Average:	47	94	206	83	27,319	11,941	2,587	12	6,503	6,981	2,769

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

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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)
04/08/00	---	0	---	---	76	18	0	3	25	0	22
04/09/00	---	0	---	---	77	24	30	5	0	12	0
04/10/00	0	0	0	0	49	0	0	13	7	8	0
04/11/00	0	0	0	0	67	0	0	0	0	0	0
04/12/00	0	0	0	0	53	0	0	14	0	0	0
04/13/00	0	0	0	0	80	15	0	8	0	15	39
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	24	277	0	49
04/20/00	0	0	0	---	0	0	125	22	292	6	0
04/21/00	---	---	---	---	---	---	---	---	572	---	---
Total:	0	0	0	0	665	420	313	231	1,518	71	159
# Days:	9	12	9	8	13	13	13	13	14	13	13
Average:	0	0	0	0	51	32	24	18	108	5	12

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.

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	70,307	1,416	6,904	56	23,129	120	0	0	0	0	0	0	0	0	0	0	0	0
TDA	28,898	540	1,324	8	8,887	39	0	0	0	0	0	0	0	0	0	0	0	0
JDA	14,089	175	528	4	4,344	34	0	0	0	0	0	0	0	0	0	0	0	0
MCN	5,569	92	94	18	2,269	27	0	0	0	0	0	0	0	0	0	0	0	0
IHR	1,916	49	19	0	812	3	0	0	0	0	0	0	0	0	0	0	0	0
LMN	945	33	6	0	159	2	0	0	0	0	0	0	0	0	0	0	0	0
LGS	546	22	4	0	**	**	0	0	0	0	**	**	0	0	0	0	**	**
LWG	370	20	0	0	154	0	0	0	0	0	0	0	0	0	0	0	0	0
PRD	152	0	3	0	125	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	9	1	3	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH	0	0	0	2	0	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	1,515	938	1,826	660
TDA	0	0	0	0	0	0	0	0	0	291	194	1,004	175
JDA	0	0	0	0	0	0	0	0	0	2,025	1,987	2,080	771
MCN	0	0	0	0	0	0	0	0	0	498	151	1,578	170
IHR	0	0	0	0	0	0	0	0	0	633	527	1,923	310
LMN	0	0	0	0	0	0	0	0	0	732	481	1,876	403
LGS	0	0	0	0	**	**	0	0	**	689	702	**	329
LWG	0	0	0	0	0	0	0	0	0	2,108	2,832	4,742	669
PRD	0	0	0	0	0	0	0	2	0	0	1	4	***
RIS	0	0	0	0	0	0	0	0	0	7	6	11	4
RRH	0	0	0	0	0	0	0	0	0	25	13	12	10
WEL	0	0	0	0	0	0	0	0	0	0			0

LMN, PRD, RIS, RRH and LGS are through 04/19.

Note: LMN is missing 04/08, JDA is only a partial count on 4/16.

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

April 7 through April 20, 2000

		Species Age		Sockeye	Steelhead	Coho	Grand Total
		Chinook					
Site	Data	age 0	age 1				
LGR	Collected	210	28,830	244	44,532	90	73,906
	Number By Passed	527	2,439	0	5,963	0	8,929
	Number Trucked	3,963	4,531	80	6,170	0	14,744
	Number Barged	2,268	20,221	308	46,829	110	69,736
	Sum of Total Transported	6,231	24,752	388	52,999	110	84,480
LGS	Collected		3,139	8	5,385		8,532
	Number By Passed		0	0	0		0
	Number Trucked		6,944	8	4,212		11,164
	Number Barged		847	0	4,397		5,244
	Sum of Total Transported	0	7,791	8	8,609	0	16,408
LMN	Collected		15,650	10	845	10	16,515
	Number By Passed		13	0	159	0	172
	Number Trucked		18,969	10	12,815	10	31,804
	Number Barged		1,632	0	1,005	0	2,637
	Sum of Total Transported	0	20,601	10	13,820	10	34,441
MCN	Collected	1,995	31,117	52	48,472	191	81,827
	Number By Passed	2,258	30,218	90	48,318	191	81,075
	Number Trucked	0	0	0	0	0	0
	Number Barged	0	0	0	0	0	0
	Sum of Total Transported	0	0	0	0	0	0
Total Collected		2,205	78,736	314	99,234	291	180,780
Total Number By Passed		2,785	32,670	90	54,440	191	90,176
Total Number Trucked		3,963	30,444	98	23,197	10	57,712
Total Number Barged		2,268	22,700	308	52,231	110	77,617
Total Sum of Total Transported		6,231	53,144	406	75,428	120	135,329

Fish Passage Center

04/21/00

Numbers reported are preliminary. Call FPC Data Center Staff at (503)230-4099 for more information

