



Fish Passage Center

Weekly Report #00 - 10

May 12, 2000

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SUMMARY OF EVENTS:

Water Supply: Precipitation over the period of May 1-9 for the Columbia above Grand Coulee was 113% of normal, for the Snake River above Ice Harbor was 121% of normal and for the Columbia above The Dalles was 121% of normal. The highest precipitation in the region for the same period was in the Upper Snake with 164% of normal and Snake River Plain with 176% of normal. The lowest precipitation recorded was Clark Fork with 64% of normal and Flathead with 59% of normal. Unseasonably cool weather during the first week of May resulted in decreased inflows.

The new May-Final Runoff Volume Forecast has been issued. Projected runoff volumes deteriorated for the most of the subbasins compared to May Early and April Final Runoff Volume Forecasts. The May Final forecast is presented in the following table:

Site	May-Early Runoff Volume Forecast		May-Final Runoff Volume Forecast		April Final Runoff Volume Forecast	
	Runoff Volume [KAF]	% of avg	Runoff Volume [KAF]	% of avg	Runoff Volume [KAF]	% of avg
Mica (April-Sept.)	13.1	103	13.2	104	13.1	103
Hungry Horse (April-Sept.)	2.13	98	2.08	95	2.09	96
Libby (April-Sept.)	7.41	109	7.08	105	7.29	108
Grand Coulee (Jan.-July)	66.6	105	65.8	104	65.8	104
The Dalles (Jan.-July)	105.0	99	105.0	99	105	99
Brownlee (April-July)	4.32	75	4.08	70	3.93	68
Dworshak (April-July)	2.62	97	2.56	95	2.67	99
Lower Granite (Jan.-July)	26.9	90	26.4	89	26.7	90
Heise NR-ID (April-July)	2.94	85	2.83	82	2.94	85
Weiser-ID (April-July)	3.94	75	3.69	68	3.62	66

Reservoir Operations: Reservoirs were operated for flood control, spring flow augmentation and refill during past week of May 4-11. A summary of actual elevations on May 11, full pool elevations and required flood control elevations at the end of April is shown in the following Table:

Project	Actual May 11 Elevation [ft]	Required End of April Flood Control Elevation [ft]	Full Pool Elevation [ft]
Libby	2368.32	2343.1	2459.0
Hungry Horse	3516.53	3503.2	3560.0
Grand Coulee	1240.2	1239.6	1290.0
Brownlee	2060.66*	2056.2	2077.0
Dworshak	1537.96	1510.4	1600.0

* elevation as of May 9

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 flow releases. The reservoir is at minimum outflows of 4 kcfs. Inflows to the project decreased from 24.5 kcfs on May 5 to 15.3 kcfs on May 11.

Hungry Horse was operated for refill during May 5-11. Currently, inflows are decreasing from 12.27 kcfs on May 5 to 8.91 kcfs on May 7 and 9.31 kcfs on May 11. The project was operated with outflows of 0.55 kcfs to 2.65 kcfs during May 4-11.

Grand Coulee was operated for flood control through the first week of May and then continued drafting. The reservoir was at elevation 1241.9 ft on May 7, which was 2.3 ft above the required flood control elevation. Inflows fluctuated

from 146.5 kcfs on May 8 to 165.6 kcfs on May 5. Brownlee continued with refill operations through May 10. The reservoir increased outflow to 22 kcfs on May 10 in agreement with Salmon Managers for flow augmentation at Lower Granite during May 10-15 period. Current inflows were in the range of 18.13 kcfs on May 8 to 21.35 kcfs on May 4. Current outflows at Hells Canyon Dam were in the range of 11.86 kcfs to 21.96 kcfs for the period of May 4-10.

Dworshak continued with refill operations at a slower rate due to requested outflows for spring flow augmentation at Lower Granite. The outflow was further decreased to 3.7 kcfs and 3.5 kcfs on May 9-10, to meet June 30 refill targets. Inflows decreased from 20.6 kcfs on May 4 to 14.1 kcfs on May 8.

Upper Snake reservoirs: As of May 11, the Upper Snake system is at 93% of capacity. The system continued to refill, as the precipitation and cold weather in the region during last week decreased irrigation demands. American Falls is full and Palisades and Jackson Lake are at 84% and 91% of capacity. Flow below American Falls is 7.9 kcfs, and at Milner, which is the lowest point in the Upper Snake system, is 2.7 kcfs.

Boise and Payette River Basins: Both systems continue with intensive refill operations. As of May 11, the Boise River system is at 90% of capacity. The major reservoirs: Arrowrock is at 96% of full, Anderson Ranch is at 86% of full and Lucky Peak is at 90% of full. As of May 11, the Payette River system is at 89% of capacity. The major reservoir, Cascade is at 88% of full capacity.

Streamflow: 1995 Biological Opinion spring flow targets based on May Final Runoff Volume forecast are: at Lower Granite 100 kcfs and at McNary 260 kcfs. The 1998 Biological Opinion flow target at Priest Rapids is 135 kcfs beginning on April 10. The average discharges for the major run-of river projects for April 28-May 11 period are given in the following table:

Project	Average discharge [kcfs]	
	April 28-May 4	May 5-11
Priest Rapids	190.2	180.5
McNary	288.3	274.6
Lower Granite	94.7	86.3
Bonneville	295.9	289.3

Lower Granite: Fishery agencies requested flows of 100 kcfs through the first week of May for yearling chinook passing this project. Early drafting of Dworshak reservoir by the COE and continuation of the refill operations at Brownlee resulted in failure of Action Agencies to meet required flows which fluctuated from 76.1 kcfs on May 9 to 99.3 kcfs on May 5.

Priest Rapids: Fishery Agencies requested minimum flows of 170 kcfs to avoid stranding fish during the peak emergence period of May 6-14. Daily average flows were fluctuating between 164.1 kcfs on May 6 to 188.7 kcfs on May 10, being higher than 170 kcfs, beginning with May 7. However, drop in the daily flows was recorded for the period of May 5-7, from 189 kcfs to 164.1 kcfs.

McNary: Flows were in the range of 257.2 kcfs on May 7 to 297 kcfs on May 5.

Spill: Decreased outflow from Dworshak Dam eliminated spill at this project for the past week. Spill for fish passage continues at the Lower Snake projects as described by the NMFS and Action Agencies' Spill Plan.

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.

Spill volumes were decreased at some projects because of total dissolved gas levels

produced. The COE has reduced spill volumes at Ice Harbor, The Dalles and Bonneville dams based on downstream forebay readings.

The FERC spill program continues at the Mid Columbia projects.

With the exception of the forebay monitors at Ice Harbor and Bonneville dams, levels of total dissolved gas were significantly below the allowable TDGS levels at all locations measured. At Ice Harbor and Bonneville forebay monitors the excursions from the 115% TDGS waiver limit were on the order of 1-2%, which is within the precision range for the monitoring instruments used. Monitoring for signs of gas bubble trauma (GBT) on fish collected through the Smolt Monitoring Program was conducted this past week. One yearling chinook was detected with signs of GBT in its fins at Little Goose Dam, but no signs were detected at the other sites in the Federal hydrosystem. Two yearling chinook with fin signs were detected at Rock Island Dam.

Smolt Monitoring Program. *Snake River basin:* Lower Granite Dam passage indices of yearling chinook remained above 100,000 fish per day for all but the last day of this weekly reporting period, and steelhead rose to levels around 500,000 fish on May 5 and 6 before dropping back to below 200,000 by week's end. Collections at the four traps are lower this week except for steelhead at the Imnaha River trap which remain comparable to last week. *Mid-Columbia River:* Yearling chinook and steelhead passage indices at Rock Island Dam rose rapidly this week to over 1,000 fish by the latter half of this week. *Lower Columbia River:* Yearling chinook passage indices at McNary Dam doubled during the span of this week from around 30,000 to over 70,000 fish, while steelhead passage indices stayed around 10,000 fish for most of this week. At Bonneville Dam, smolt passage indices of coho and steelhead were over double last week's level, while yearling chinook and sock-eye passage indices showed smaller increases during this two-week period.

Adult Fish Passage. Passage of adult spring chinook at Bonneville Dam through the week (5/5-5/11) ranged between 992 and 4,368. The cumulative count through May 11 was 160,452, approximately 5 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 85,848; John Day 66,363 [1 day count missing 5/9]; and McNary 45,662. About 53.5% of the adult chinook and 58.3% of the jack chinook counted at Bonneville have moved upstream past The Dalles Dam. Through May 7 about 2,124 adult spring chinook have been counted at 3-Mile Dam located on the Umatilla River and 3,035 counted at Prosser Dam on the Yakama River through May 2. The turnoff of adult chinook salmon into the Snake River totaled 24,934 at Ice Harbor Dam through May 11 and that was 19.7 times greater than the 1999 total and 3.1 times greater than the 10-year average. Adult salmon counted at Priest Rapids Dam was 12,735 through May 10. The count of adult chinook past Rock Island Dam was 5,666 through May 9; and of this total, 1,232 have passed Rocky Reach Dam. The year-2000 adult chinook counts at Bonneville, Ice Harbor and Priest Rapids were all nearly 3 times greater than the 10-year average.

Numbers of jack chinook also began reducing through the week at Bonneville from near 1,000 per day to 500 by the week's end. The total jack chinook count at Bonneville Dam remains well above normal with 15,132 through May 11. The jack count was approximately 10 times greater than the 10-year average.

Steelhead counts at Bonneville Dam ranged between 21 and 55 for the week with the cumulative count through May 11 of 2,320. Wild steelhead totaled 797 for the season.

As a matter of interest, the 4-yr old (2-ocean age) chinook returning to the river are on average several centimeters smaller in length than in previous years at Bonneville and Lower Granite dams as reported by the sampling personnel from CRITFC and NMFS. Sampled fish appear in good condition with few lesions or abrasions on the head area at either site. Marks from marine mammal attacks were mainly scratches rather than flesh

wounds; however, 13.7% (average to date) of the sampled fish at Bonneville Dam had marine mammal marks.

The average travel time for 69 PIT tagged adult and jack chinook that were recorded passing through the adult sampling facility at Bonneville Dam and were subsequently recorded at the Lower Granite adult sampling facility was 16.6 days. The range of travel time was from 11 days to 24 days. Fish recorded at Bonneville prior to April 20 took 18.1 days (N=44) while the fish passing Bonneville after April 20 (N=25) arrived at Lower Granite Dam on average of 14.1 days.

Hatchery Releases. Approximately 9 million fish were released from Basin hatcheries during the past two weeks and about 8.1 million projected for the upcoming two weeks. The projected releases will mainly include the final subyearling fall chinook from Spring Creek NFH as well as fish planted in the Yakama and Umatilla River basins. In general, all yearling chinook have been released (1 volitional release remaining), all sockeye released, all coho except for volitional releases from a couple of locations (Klickitat, Yakama, and Methow River basins) and most of the steelhead with exception of acclimation facilities that have volitional releases such as Wallowa, Little Sheep, Big Canyon, and a few sites in the Methow and Wenatchee rivers.

Snake River – Yearling chinook and sockeye juvenile salmon are completed for the year 2000 migration. Juvenile steelhead are nearing completion for the year with the acclimation facilities at Grande Ronde sites releasing fish. Final plants of coho salmon were completed during the week from the Nez Perce tribal release sites. Subyearling fall chinook will be released into the Snake and Clearwater Rivers in June and July.

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. Juvenile steelhead releases continued in the Wenatchee, Methow, and Okanogan rivers during the week and will continue until completed this month. Summer chinook releases (yearling fish) are now completed for the year. Subyearling

summer and fall chinook are scheduled for release from late May to late June. Coho salmon were planted into the Yakama, Wenatchee, and Methow rivers during May.

Lower Columbia - (from above Bonneville Dam to below McNary Dam). Yearling spring chinook releases are finished for the year. 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. Subyearling fall chinook will be released during the next two weeks into the main Columbia River and Umatilla River.

A Hatchery Zone Report is listed with the preliminary totals of fish to be released in spring and summer 2000 for the year 2000 migration. These hatchery release totals also include the chinook and sockeye released in 1999 that should migrate in year 2000.

Hatchery Zone Release Report – Year 2000.

	Snake River	mid-Columbia River	Lower Columbia River	
	# Release	# Release	# Release	Total Release
Spring Chinook	5,882,740	3,957,516	5,271,326	15,111,582
Summer Chinook	1,147,487	2,211,000		3,358,487
Fall Chinook	3,155,339	13,274,000	25,344,647	41,773,986
Sockeye	148	142,901		143,049
Steelhead	9,693,513	1,402,600	557,878	11,653,991
Coho	1,297,474	1,075,000	6,930,000	9,302,474
Total	21,176,701	22,063,017	38,103,851	81,343,569

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
04/28/00	160.1	0.0	168.1	0.0	175.1	12.0	188.5	32.6	193.5	31.5	213.9	84.7	207.5	123.5
04/29/00	151.6	0.0	155.7	0.0	163.3	10.0	167.5	29.0	168.9	30.7	165.9	63.8	173.4	97.8
04/30/00	153.5	0.0	159.1	0.0	165.7	10.0	174.5	29.3	177.6	30.9	195.3	74.1	189.1	105.4
05/01/00	176.3	0.0	174.3	8.7	173.9	16.8	175.6	24.1	180.1	30.8	190.6	75.2	189.4	106.4
05/02/00	166.6	0.0	169.3	0.0	172.6	10.8	190.7	30.4	193.7	30.9	202.8	75.3	196.9	111.2
05/03/00	165.9	0.0	167.9	0.2	168.7	13.6	172.0	33.0	175.3	30.9	189.0	74.4	188.1	105.1
05/04/00	167.2	0.0	165.1	0.0	173.0	13.6	182.5	32.7	186.0	30.9	188.8	73.4	186.7	104.1
05/05/00	156.6	0.0	156.7	0.0	165.2	10.0	176.8	27.8	180.8	30.9	191.8	72.2	189.0	105.8
05/06/00	131.1	0.0	133.1	0.0	140.9	9.4	150.7	28.9	154.1	31.0	167.9	59.1	170.1	94.8
05/07/00	144.4	0.0	148.0	0.0	154.0	10.0	158.2	27.9	162.5	30.9	172.5	61.2	164.1	92.1
05/08/00	156.0	0.0	164.9	0.0	170.5	10.0	174.5	23.3	174.5	31.0	178.2	64.1	183.4	102.3
05/09/00	174.2	0.0	168.4	6.6	169.3	10.0	173.9	21.7	176.1	31.0	190.5	68.6	188.7	104.3
05/10/00	163.3	0.0	169.5	0.0	176.8	10.0	190.6	29.9	194.4	30.9	191.1	67.7	188.6	106.7
05/11/00	150.8	0.0	156.1	1.0	160.4	10.0	167.7	31.0	169.4	30.9	186.5	65.7	179.8	100.6

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/28/00	15.2	4.5	24.1	30.4	95.9	23.5	89.1	17.1	89.4	27.4	96.4	62.6		
04/29/00	15.0	4.3	25.2	24.5	98.7	24.6	99.4	20.1	103.5	23.1	109.7	69.1		
04/30/00	15.1	4.3	22.5	27.0	88.8	21.6	85.1	14.7	85.5	23.1	91.2	63.5		
05/01/00	15.1	4.3	21.8	23.9	92.4	22.6	90.0	14.2	92.8	23.1	95.4	62.9		
05/02/00	15.1	4.3	21.4	20.3	92.5	22.4	87.7	15.8	89.3	23.0	96.3	63.3		
05/03/00	14.9	4.2	20.2	11.8	97.7	23.4	94.5	18.4	95.2	25.6	100.0	63.5		
05/04/00	12.8	2.2	21.4	15.7	96.8	23.8	92.5	21.6	94.7	29.0	97.6	63.7		
05/05/00	10.6	0.0	18.7	13.2	99.3	24.0	96.1	23.0	97.4	32.2	104.9	64.5		
05/06/00	10.5	0.0	18.8	13.4	96.3	23.1	93.1	23.4	96.8	32.7	100.1	63.5		
05/07/00	10.5	0.0	19.1	11.9	88.5	22.0	85.7	23.5	88.6	32.3	95.2	65.7		
05/08/00	9.7	0.0	18.1	11.9	83.0	21.2	79.8	22.2	81.8	32.5	85.6	62.9		
05/09/00	3.7	0.0	18.2	18.2	76.1	19.0	74.1	22.7	73.8	30.4	77.2	57.1		
05/10/00	3.5	0.0	18.5	22.1	79.7	20.1	76.2	22.3	77.8	25.7	84.5	63.0		
05/11/00	3.4	0.0	---	---	81.9	20.4	78.5	24.3	80.4	23.3	85.6	62.0		

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		
04/28/00	299.3	127.1	297.3	102.2	281.3	110.1	289.3	90.7	84.8	103.4
04/29/00	282.1	110.0	309.3	56.3	302.1	115.0	308.0	119.1	86.4	92.1
04/30/00	268.9	106.8	280.6	57.8	274.5	109.6	280.0	118.5	82.7	68.5
05/01/00	281.2	109.3	285.9	58.1	276.4	101.3	289.1	112.3	79.1	87.3
05/02/00	281.9	111.0	288.7	60.6	290.5	103.3	300.0	103.7	96.4	89.4
05/03/00	285.7	118.5	287.0	64.5	283.6	98.6	300.8	95.3	92.5	102.7
05/04/00	292.2	120.7	299.8	68.0	294.0	104.7	304.4	95.1	96.6	102.4
05/05/00	297.0	125.0	298.6	118.0	301.0	117.2	314.7	82.5	111.2	112.0
05/06/00	282.9	115.8	304.6	116.8	289.7	115.7	305.5	80.5	103.4	112.0
05/07/00	257.2	106.4	267.3	109.3	266.8	109.3	283.4	79.6	97.1	96.3
05/08/00	273.4	113.5	275.2	67.6	267.9	105.0	278.8	88.1	96.5	83.8
05/09/00	277.8	116.9	274.6	69.0	280.7	108.1	301.9	86.1	96.1	109.3
05/10/00	259.1	111.0	260.5	70.6	253.1	99.8	261.4	84.9	90.2	75.9
05/11/00	274.6	114.4	277.6	118.7	261.2	103.8	279.6	79.5	84.2	105.5

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

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank				Fish with L. Line GBT	
								Rank 1	Rank 2	Rank 3	Rank 4	Num Fish	Avg. Rank
Lower Granite Dam													
	05/08/00	Yearling Chinook	101	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/08/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Little Goose Dam													
	05/03/00	Yearling Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	05/03/00	Steelhead	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	05/10/00	Yearling Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	05/10/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Lower Monumental Dam													
	05/08/00	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/08/00	Steelhead	100	4	0	0.00%	0.00%	0	0	0	0	4	1
Ice Harbor Dam													
	05/02/00	Yearling Chinook	46	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/02/00	Steelhead	68	4	0	0.00%	0.00%	0	0	0	0	4	1
	05/09/00	Yearling Chinook	99	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/09/00	Steelhead	87	1	0	0.00%	0.00%	0	0	0	0	0	0
McNary Dam													
	05/04/00	Yearling Chinook	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/04/00	Steelhead	100	3	0	0.00%	0.00%	0	0	0	0	3	1
	05/08/00	Yearling Chinook	100	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/08/00	Steelhead	100	5	0	0.00%	0.00%	0	0	0	0	5	1.2
	05/11/00	Yearling Chinook	100	4	0	0.00%	0.00%	0	0	0	0	4	1
	05/11/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Bonneville Dam													
	05/04/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/04/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/08/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/08/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/11/00	Yearling Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/11/00	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
Rock Island Dam													
	05/04/00	Yearling Chinook	100	10	1	1.00%	0.00%	1	0	0	0	9	1
	05/04/00	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/08/00	Yearling Chinook	100	4	2	2.00%	0.00%	1	1	0	0	2	1
	05/08/00	Steelhead	100	1	0	0.00%	0.00%	0	0	0	0	1	1
	05/11/00	Yearling Chinook	100	5	2	2.00%	0.00%	1	1	0	0	3	1
	05/11/00	Steelhead	100	0	0	0.00%	0.00%	0	0	0	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 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>	#	<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
4/28	98	99	99	24	118	120	121	24	109	109	110	24	106	107	107	24	106	107	107	23
4/29	98	98	98	24	119	120	121	24	108	108	109	24	105	106	106	24	105	105	106	23
4/30	98	98	98	24	119	120	121	24	109	110	110	24	106	107	107	24	106	106	107	23
5/1	98	98	99	24	120	122	124	24	110	110	111	24	107	108	108	24	107	107	107	23
5/2	98	98	99	24	122	124	125	24	111	111	112	24	107	108	109	24	107	107	107	23
5/3	99	99	100	24	121	122	122	24	111	112	112	24	108	108	109	24	107	107	108	11
5/4	99	99	99	24	122	123	124	24	111	111	111	24	108	108	108	24	107	107	107	23
5/5	99	99	100	24	123	123	124	24	111	111	112	24	109	109	110	24	107	107	108	23
5/6	103	104	105	24	123	123	124	24	111	112	112	24	109	109	110	24	107	107	107	23
5/7	103	104	104	24	122	123	124	24	111	112	112	24	109	109	110	24	107	107	108	23
5/8	100	101	104	24	123	123	124	24	113	113	114	24	110	110	110	24	108	108	108	23
5/9	101	102	104	24	123	123	123	17	113	114	114	24	111	111	111	24	109	109	110	23
5/10	100	101	103	24	123	123	124	8	113	113	113	24	111	111	111	24	110	110	110	23
5/11	100	101	103	24	122	123	124	24	112	112	113	24	110	110	111	24	109	109	109	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>	#	<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
4/28	107	107	109	23	106	107	107	24	108	109	115	24	108	109	110	24	110	111	115	24
4/29	105	106	107	23	105	106	106	24	107	107	107	24	108	109	110	24	110	111	113	23
4/30	106	107	109	24	106	106	107	24	107	107	108	24	107	108	108	24	109	109	110	23
5/1	109	112	120	23	107	107	108	24	109	110	115	24	108	108	109	21	109	110	110	21
5/2	107	108	109	23	108	108	108	24	109	110	116	24	109	109	110	23	110	111	113	20
5/3	108	108	110	22	106	107	108	24	109	110	113	24	110	111	112	20	112	112	114	18
5/4	107	107	108	23	106	107	107	24	109	109	113	24	108	108	109	20	110	111	113	19
5/5	108	108	109	23	107	107	107	24	108	108	109	24	108	108	108	22	110	110	111	20
5/6	107	108	109	23	106	107	107	24	108	108	108	24	107	108	108	22	110	110	111	19
5/7	107	108	109	23	107	107	107	23	108	108	108	23	107	108	108	22	109	109	110	21
5/8	108	108	108	23	108	108	108	24	109	109	109	24	108	108	109	22	109	109	110	22
5/9	109	110	110	22	108	109	109	23	109	110	110	23	109	109	109	24	110	110	110	21
5/10	109	109	111	23	108	108	109	24	109	110	110	24	108	109	109	23	110	111	112	19
5/11	108	109	110	23	107	108	108	24	109	109	109	24	107	107	108	23	110	110	111	21

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>	#	<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
4/28	112	113	114	22	115	116	118	20	117	117	118	17	119	119	123	14	118	118	121	17
4/29	110	111	111	23	115	116	117	21	113	114	114	24	116	118	123	24	115	116	120	24
4/30	111	111	112	24	115	116	116	24	115	116	119	24	116	117	117	24	116	118	122	24
5/1	111	112	112	23	115	115	116	21	115	116	116	24	117	118	118	23	116	117	118	23
5/2	112	112	112	21	115	116	117	21	115	115	115	24	117	117	118	24	116	116	117	24
5/3	112	112	112	22	116	117	118	19	114	114	115	24	118	120	122	24	116	116	117	24
5/4	112	112	112	22	116	117	118	22	113	113	114	24	117	118	119	24	116	116	117	24
5/5	112	112	112	22	115	116	116	21	114	114	114	23	117	117	118	23	114	115	115	23
5/6	110	111	111	21	116	116	117	21	113	113	114	24	115	116	118	24	114	115	115	24
5/7	110	110	111	24	115	116	116	21	113	114	116	24	115	116	117	24	114	115	116	24
5/8	110	110	110	24	115	115	116	21	114	115	119	24	116	117	118	23	114	114	115	24
5/9	111	111	111	24	115	116	118	24	113	113	113	24	116	117	117	24	114	115	115	24
5/10	106	109	111	21	116	116	118	17	112	112	112	24	116	117	117	24	113	113	114	24
5/11	107	107	108	23	115	115	116	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	Priest R. Dnst			#	Pasco			#	Dworshak			#	Clrwtr-Peck			#	Anatone			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
4/28	122	122	123	17	112	113	115	24	109	109	110	24	104	104	105	24	103	104	104	24
4/29	120	121	121	24	113	114	115	24	108	108	109	24	104	104	105	24	103	104	105	24
4/30	121	121	122	24	115	116	116	24	104	106	106	24	---	---	---	0	104	105	106	24
5/1	121	122	122	23	115	116	116	24	109	109	110	24	105	105	106	24	104	105	106	24
5/2	122	122	122	24	114	115	116	17	109	110	110	24	104	104	105	24	103	104	105	24
5/3	121	122	122	24	113	114	114	24	109	110	110	24	104	104	104	24	103	103	104	24
5/4	121	121	122	24	111	112	113	21	105	109	109	24	103	103	104	24	103	104	105	24
5/5	121	121	122	23	113	113	114	24	100	101	101	24	101	102	102	24	104	104	105	24
5/6	120	120	121	24	112	113	114	24	100	100	101	24	101	102	103	24	104	105	106	24
5/7	120	120	121	24	113	113	114	23	100	100	101	24	101	102	103	24	104	105	106	24
5/8	120	121	121	24	113	114	114	24	101	101	102	24	101	102	102	24	104	104	105	24
5/9	120	120	121	24	112	113	114	24	102	102	103	24	102	102	103	24	104	104	105	24
5/10	119	120	120	24	109	109	110	24	102	103	103	23	102	102	102	23	103	104	104	24
5/11	---	---	---	0	108	109	109	24	102	103	104	24	101	102	102	24	103	104	105	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwtr-Lewiston			#	Lower Granite			#	L. Granite Tlwr			#	Little Goose			#	L. Goose Tlwr			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
4/28	103	104	105	24	105	105	106	24	110	111	111	24	106	106	107	24	110	113	116	24
4/29	103	105	106	24	104	105	107	24	110	110	111	24	105	105	107	24	109	111	112	24
4/30	104	106	107	23	105	107	108	24	109	110	110	23	108	110	114	24	109	112	113	24
5/1	104	106	107	24	106	107	108	24	110	110	111	24	109	111	114	24	111	113	113	24
5/2	104	104	105	24	107	107	108	24	110	110	110	24	109	109	110	24	111	113	114	24
5/3	103	104	104	24	106	107	107	24	110	110	111	24	109	109	109	24	112	115	116	24
5/4	103	103	104	24	105	105	105	24	110	110	111	24	108	108	109	24	113	117	118	24
5/5	102	102	103	24	104	104	104	24	110	111	112	24	108	108	109	24	113	118	118	24
5/6	102	103	104	24	105	106	107	24	110	110	111	24	107	107	108	24	113	118	118	24
5/7	102	103	104	24	104	105	105	24	109	110	111	24	108	109	111	24	113	118	118	24
5/8	102	103	104	24	105	106	107	24	110	110	110	24	108	108	109	24	113	118	119	24
5/9	102	102	104	24	106	106	107	24	109	109	110	24	108	108	108	24	113	118	119	24
5/10	101	102	103	23	105	105	105	24	109	109	110	24	107	107	107	24	113	118	119	24
5/11	101	102	103	24	103	104	104	24	109	109	109	24	105	106	106	24	112	119	120	24

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

Date	Lower Mon.			#	L. Mon. Tlwr			#	Ice Harbor			#	Ice Harbor Tlwr			#	McNary-Oregon			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
4/28	112	113	114	24	115	117	118	24	113	114	116	24	114	115	116	24	113	114	115	24
4/29	109	110	111	24	115	115	116	24	111	112	113	24	115	117	118	24	112	113	115	24
4/30	111	114	118	24	114	115	116	24	113	114	115	24	114	116	118	24	113	114	116	24
5/1	111	113	114	24	115	116	116	24	114	115	116	24	114	115	118	24	116	118	120	24
5/2	111	112	113	24	115	116	116	24	114	115	115	24	115	116	118	24	116	117	119	17
5/3	111	112	113	24	115	116	117	24	114	114	114	24	115	116	117	24	115	116	116	24
5/4	111	112	114	24	116	117	118	24	112	113	113	24	115	116	117	24	115	115	118	21
5/5	112	114	116	24	117	118	119	24	113	113	114	24	115	116	117	24	113	114	115	24
5/6	113	115	117	24	117	118	119	21	114	115	116	24	114	115	117	24	114	115	117	24
5/7	114	117	120	24	117	118	118	24	116	118	121	24	115	117	117	24	114	115	116	23
5/8	114	116	119	24	117	117	118	24	117	117	118	24	114	115	117	24	114	115	116	24
5/9	113	115	116	24	116	117	118	24	117	117	117	24	113	115	117	24	115	116	118	24
5/10	112	113	114	24	115	116	117	24	115	115	116	24	114	115	116	24	113	114	114	24
5/11	110	111	113	24	114	114	115	24	111	112	113	24	114	114	116	24	108	109	111	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>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>High</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>High</u>	<u>#</u>	<u>24h</u>	<u>AVG</u>	<u>High</u>	<u>hr</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>						
4/28	113	113	114	24	119	119	120	24	113	113	114	23	119	120	120	24	111	111	112	23
4/29	111	112	114	24	118	118	119	24	112	113	116	23	115	118	119	23	111	112	113	23
4/30	113	116	117	24	118	119	119	24	113	113	116	20	115	118	118	24	113	114	115	24
5/1	117	119	120	24	119	119	120	24	111	111	112	23	114	118	119	24	112	113	115	23
5/2	116	116	118	17	118	118	119	17	113	114	115	23	115	118	119	24	111	113	114	23
5/3	115	116	117	24	119	119	120	24	114	115	115	24	117	119	120	24	112	113	114	24
5/4	114	114	115	21	119	119	120	21	113	113	114	23	116	119	119	24	113	114	115	23
5/5	113	113	114	24	119	119	119	23	113	113	113	23	119	119	121	24	112	113	115	23
5/6	113	114	115	24	118	119	119	24	112	112	113	23	118	119	121	24	113	115	116	23
5/7	114	116	116	23	117	118	119	23	113	114	117	23	118	119	119	24	114	115	116	23
5/8	115	116	116	24	118	119	119	24	114	114	115	23	116	118	119	24	114	115	116	23
5/9	115	115	116	24	118	119	119	24	114	114	116	23	116	118	119	24	113	114	115	23
5/10	112	113	113	24	117	118	118	24	114	114	114	23	116	118	120	24	112	114	115	23
5/11	108	108	110	24	117	118	118	24	111	111	113	23	119	119	121	24	111	112	114	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>Camas\Washugal</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>High</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>High</u>	<u>#</u>	<u>24h</u>	<u>Avg</u>	<u>High</u>	<u>hr</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>						
4/28	117	117	118	24	113	114	115	19	116	117	119	23	115	117	118	23	114	115	116	24
4/29	117	118	118	23	113	114	115	23	116	117	117	22	117	118	118	23	115	117	118	23
4/30	118	118	119	24	116	116	116	24	118	119	127	21	119	120	121	20	118	120	121	24
5/1	117	117	118	24	115	115	116	23	118	119	120	23	119	119	120	23	119	119	120	24
5/2	116	117	118	24	115	115	115	22	117	118	118	23	119	119	120	23	118	119	120	24
5/3	117	118	119	24	114	114	115	24	116	117	117	24	117	117	118	24	117	117	118	24
5/4	118	119	119	24	114	114	115	23	116	116	117	23	117	117	118	23	116	117	117	24
5/5	118	119	120	24	114	115	115	23	116	116	117	23	116	117	118	23	116	116	117	24
5/6	119	120	121	24	115	116	116	23	116	117	118	23	117	117	118	23	116	117	118	18
5/7	119	120	120	24	116	117	117	23	117	118	118	23	118	118	118	23	117	118	120	22
5/8	119	119	120	24	116	117	117	23	118	118	119	23	119	119	119	23	117	118	118	24
5/9	118	119	120	24	116	116	116	22	118	118	119	23	117	118	118	23	116	117	117	24
5/10	118	119	119	24	113	114	115	23	115	116	117	23	116	116	117	22	113	114	114	24
5/11	117	118	119	24	111	112	113	23	114	115	116	23	113	114	115	21	112	113	113	24

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						
Eagle	UN Sockeye	2000	148	05/09/00 05/09/00	Redfish Lake Cr	Salmon River
Magic Valley	SU Steelhead	2000	52,000	04/03/00 05/12/00	Squaw Cr Acclim Pd	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
	Agency Totals:		752,148	.....	
Nez Perce Tribe						
Clearwater	SU Steelhead	2000	140,000	04/27/00 05/04/00	Red R	S Fk Clearwater River
	SU Steelhead	2000	100,000	04/27/00 05/04/00	Crooked R Acclim Pd	S Fk Clearwater River
Kooskia	UN Coho	2000	270,000	04/17/00 05/10/00	Kooskia H	Clearwater Rvr M F
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	Meadow Cr	S Fk Clearwater River
	SU Steelhead	2000	25,000	05/08/00 05/08/00	Mill Cr	S Fk Clearwater River
	SU Steelhead	2000	10,000	05/08/00 05/08/00	Red R	S Fk Clearwater River
	Agency Totals:		770,000	.....	
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	.....	
Umatilla Tribe						
Minthorn	SU Steelhead	2000	50,000	04/20/00 04/30/00	Minthorn Acclim Pd	Umatilla River
	Agency Totals:		50,000	.....	
USFWS						
Dworshak	SU Steelhead	2000	1,311,447	05/03/00 05/05/00	Dworshak H	Clearwater Rvr M F

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						
Eagle	UN Sockeye	2000	148	05/09/00 05/09/00	Redfish Lake Cr	Salmon River
Magic Valley	SU Steelhead	2000	52,000	04/03/00 05/12/00	Squaw Cr Acclim Pd	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
	Agency Totals:		752,148	.....	
Nez Perce Tribe						
Clearwater	SU Steelhead	2000	140,000	04/27/00 05/04/00	Red R	S Fk Clearwater River
	SU Steelhead	2000	100,000	04/27/00 05/04/00	Crooked R Acclim Pd	S Fk Clearwater River
Kooskia	UN Coho	2000	270,000	04/17/00 05/10/00	Kooskia H	Clearwater Rvr M F
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	Meadow Cr	S Fk Clearwater River
	SU Steelhead	2000	25,000	05/08/00 05/08/00	Mill Cr	S Fk Clearwater River
	SU Steelhead	2000	10,000	05/08/00 05/08/00	Red R	S Fk Clearwater River
	Agency Totals:		770,000	.....	
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	.....	
Umatilla Tribe						
Minthorn	SU Steelhead	2000	50,000	04/20/00 04/30/00	Minthorn Acclim Pd	Umatilla River
	Agency Totals:		50,000	.....	
USFWS						
Dworshak	SU Steelhead	2000	1,311,447	05/03/00 05/05/00	Dworshak H	Clearwater Rvr M F

Hatchery Release Summary

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

Hatchery	Species...	Migration Year	Number Released	...Release Dates...		Release Site	River Name
				Begin...	...End		
Jack Creek Pond							
	SP Chinook	2000	137,500	03/31/00	06/01/00	Jack Creek Acclim 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							
	UN Coho	2000	200,000	04/26/00	05/15/00	Winthrop H	Methow River
Agency Totals:			1,303,300	.....		
Total Release..			9,020,895				

Hatchery Release Summary

From 5/12/00 to 5/25/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates...		Release Site	River Name
				Begin...	...End		
Umatilla Tribe							
Thornhollow							
	FA Chinook	2000	2,682,000	05/20/00	05/31/00	Thornhollow Acclim Pd	Umatilla River
Agency Totals:			2,682,000	.....		
USFWS							
Spring Creek							
	FA Chinook	2000	3,700,000	05/18/00	05/18/00	Spring Creek H	Columbia River
Agency Totals:			3,700,000	.....		
Yakima Tribe							
Prosser							
	FA Chinook	2000	1,700,000	05/15/00	06/07/00	Prosser Acclim Pd	Yakama River
Agency Totals:			1,700,000	.....		
Total Release..			8,082,000				

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)
04/28/00	84	191	81	146	56,120	32,749	15,946	54	20,089	10,119	37,404
04/29/00	---	169	---	---	117,149	42,933	17,114	53	22,903	9,787	32,768
04/30/00	---	---	---	---	124,397	53,382	20,407	187	26,128	16,431	33,277
05/01/00	172	110	153	133	128,593	41,709	14,547	121	25,977	23,459	35,661
05/02/00	107	106	152	117	177,440	67,123	21,070	360	26,260	34,022	12,250
05/03/00	133	70	249	109	141,058	77,124	20,867	1,140	22,864	24,964	28,111
05/04/00	134	52	302	200	164,757	103,981	26,583	719	31,685	27,598	30,917
05/05/00	114	24	283	384	247,032	53,522	29,583	668	29,238	30,232	34,465
05/06/00	---	---	---	---	155,816	72,001	33,463	571	40,346	28,354	42,125
05/07/00	---	---	---	---	126,608	40,381	26,984	639	39,059	23,993	45,455
05/08/00	18	25	43	84	141,256	33,460	17,469	808	51,636	16,029	56,333
05/09/00	34	25	43	31	119,984	35,635	26,607	1,048	59,833	19,684	38,328
05/10/00	31	23	42	35	126,923	63,684	22,923	807	68,672	29,575	45,043
05/11/00	23	23	82	---	79,458	79,198	44,666	1,440	73,473	20,018	36,505
Total:	850	818	1,430	1,239	1,906,591	796,882	338,229	8,615	538,163	314,265	508,642
# Days:	10	11	10	9	14	14	14	14	14	14	14
Average:	85	74	143	138	136,185	56,920	24,159	615	38,440	22,448	36,332

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)
04/28/00	0	0	0	3	198	154	0	76	454	412	3,479
04/29/00	---	0	---	---	201	0	0	24	681	112	2,194
04/30/00	---	---	---	---	0	0	0	14	252	125	2,230
05/01/00	0	0	0	5	0	0	137	5	695	119	1,754
05/02/00	0	0	0	6	200	0	0	5	149	520	865
05/03/00	0	0	0	16	197	0	0	3	352	391	3,632
05/04/00	0	0	0	8	199	0	17	4	416	351	664
05/05/00	0	1	0	20	0	0	26	4	434	268	426
05/06/00	---	---	---	---	0	0	0	2	350	56	446
05/07/00	---	---	---	---	0	0	0	4	435	326	963
05/08/00	0	0	0	36	401	0	0	6	522	556	1,280
05/09/00	0	0	0	16	0	0	20	1	341	435	429
05/10/00	0	0	0	7	0	0	29	0	826	226	144
05/11/00	0	0	0	---	0	0	25	1	386	49	1,083
Total:	0	1	0	117	1,396	154	254	149	6,293	3,946	19,589
# Days:	10	11	10	9	14	14	14	14	14	14	14
Average:	0	0	0	13	100	11	18	11	450	282	1,399

* 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)
04/28/00	0	0	0	11	0	461	0	6	202	609	9,941
04/29/00	---	0	---	---	201	289	0	11	104	1,470	11,654
04/30/00	---	---	---	---	795	150	133	11	336	1,192	8,233
05/01/00	0	0	0	2	794	0	137	11	497	2,312	7,795
05/02/00	0	0	0	5	200	143	135	33	248	3,004	20,465
05/03/00	0	0	0	3	592	732	0	87	151	1,374	10,265
05/04/00	0	0	0	0	1,791	309	34	48	208	3,003	9,592
05/05/00	0	0	0	8	792	157	132	57	175	7,084	17,268
05/06/00	---	---	---	---	1,384	160	152	42	613	11,609	18,736
05/07/00	---	---	---	---	793	0	0	97	522	12,731	24,718
05/08/00	0	0	0	0	1,605	332	78	91	435	22,595	29,127
05/09/00	0	0	0	3	1,211	666	168	136	594	20,471	38,757
05/10/00	0	0	0	4	1,408	0	116	175	413	12,084	43,604
05/11/00	0	0	0	---	2,202	0	177	205	386	8,189	35,887
Total:	0	0	0	36	13,768	3,399	1,262	1,010	4,884	107,727	286,042
# Days:	10	11	10	9	14	14	14	14	14	14	14
Average:	0	0	0	4	983	243	90	72	349	7,695	20,432

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)
04/28/00	253	358	311	1,496	81,106	43,019	42,819	124	7,924	9,387	9,941
04/29/00	---	468	---	---	156,867	46,900	42,786	124	9,007	13,356	7,952
04/30/00	---	---	---	---	103,134	36,069	38,147	165	11,425	10,034	6,004
05/01/00	257	298	51	809	109,939	42,765	32,663	168	17,233	14,286	6,236
05/02/00	109	548	53	437	173,634	44,703	45,516	279	10,599	20,303	8,791
05/03/00	26	1,141	124	452	255,088	26,956	20,064	419	8,611	13,936	5,054
05/04/00	78	1,262	212	332	184,257	35,875	24,828	360	13,216	14,843	11,290
05/05/00	90	206	404	581	279,323	33,694	27,417	294	12,056	12,386	10,588
05/06/00	---	---	---	---	490,189	34,462	41,828	426	16,108	15,870	16,952
05/07/00	---	---	---	---	518,718	30,970	24,110	450	9,483	13,139	12,263
05/08/00	41	386	89	211	397,283	53,300	15,336	840	10,694	15,545	15,364
05/09/00	69	538	72	187	239,631	29,454	21,865	1,005	11,542	8,871	12,728
05/10/00	50	889	85	193	213,013	22,191	13,610	1,082	13,077	12,073	19,716
05/11/00	65	1,304	203	---	174,127	46,995	14,239	999	11,326	8,287	16,551
Total:	1,038	7,398	1,604	4,698	3,376,309	527,353	405,228	6,735	162,301	182,316	159,430
# Days:	10	11	10	9	14	14	14	14	14	14	14
Average:	104	673	160	522	241,165	37,668	28,945	481	11,593	13,023	11,388

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)
04/28/00	0	0	0	0	0	0	0	23	3,735	413	621
04/29/00	---	0	---	---	201	0	0	53	3,189	1,585	274
04/30/00	---	---	---	---	0	0	0	92	2,772	1,944	686
05/01/00	0	0	0	0	0	0	0	41	2,632	3,006	779
05/02/00	0	0	0	0	0	0	0	21	3,627	2,907	721
05/03/00	0	0	0	0	0	0	0	27	1,762	946	790
05/04/00	0	0	0	0	0	0	17	15	2,705	2,120	664
05/05/00	0	0	0	4	198	0	18	18	1,561	1,543	640
05/06/00	---	---	---	---	198	0	0	11	2,188	1,789	956
05/07/00	---	---	---	---	0	0	0	12	1,740	1,714	2,054
05/08/00	0	0	0	33	0	0	0	13	1,912	1,142	960
05/09/00	1	0	0	12	0	0	0	17	3,055	2,166	715
05/10/00	1	0	0	9	201	0	0	21	1,651	1,529	1,151
05/11/00	0	0	0	---	400	167	8	35	2,316	833	773
Total:	2	0	0	58	1,198	167	43	399	34,845	23,637	11,784
# Days:	10	11	10	9	14	14	14	14	14	14	14
Average:	0	0	0	6	86	12	3	29	2,489	1,688	842

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 05/11

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	160,452	15,132	30,629	3,927	53,786	1,551	0	0	0	0	0	0	0	0	0	0	0	0
TDA	85,848	8,828	11,557	1,781	28,484	735	0	0	0	0	0	0	0	0	0	0	0	0
JDA	66,363	6,371	7,956	919	21,005	505	0	0	0	0	0	0	0	0	0	0	0	0
MCN	45,662	4,653	3,950	405	17,951	417	0	0	0	0	0	0	0	0	0	0	0	0
IHR	24,934	3,370	1,267	188	8,085	126	0	0	0	0	0	0	0	0	0	0	0	0
LMN	21,279	3,060	592	109	6,189	95	0	0	0	0	0	0	0	0	0	0	0	0
LGS	14,938	1,242	162	18	**	**	0	0	0	0	**	**	0	0	0	0	**	**
LWG	18,571	2,447	280	56	4,245	47	0	0	0	0	0	0	0	0	0	0	0	0
PRD	12,735	122	1,212	3	4,454	13	0	0	0	0	0	0	0	0	0	0	0	0
RIS	5,666	68	147	4	1,458	4	0	0	0	0	0	0	0	0	0	0	0	0
RRH	1,232	10	41	9	185	1	0	0	0	0	0	0	0	0	0	0	0	0
WEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DAM	Coho						Sockeye			Steelhead			
	2000		1999		10-Yr Avg.		10-Yr Avg.			10-Yr Avg.			Wild
	Adult	Jack	Adult	Jack	Adult	Jack	2000	1999	Avg.	2000	1999	Avg.	2000
BON	0	0	0	0	0	0	0	0	0	2,320	1,457	3,009	797
TDA	0	0	0	0	0	0	0	0	0	552	342	1,362	219
JDA	0	0	0	0	0	0	0	0	0	2,830	2,955	2,776	1,158
MCN	0	0	0	1	0	0	0	0	0	649	324	1,998	225
IHR	0	0	0	0	0	0	0	0	0	752	776	2,319	365
LMN	0	0	0	0	0	0	0	0	0	871	586	2,298	486
LGS	0	0	0	0	**	**	0	0	**	859	874	**	448
LWG	0	0	0	0	0	0	0	0	0	2,412	3,007	5,168	841
PRD	0	0	0	0	0	0	0	3	0	35	12	30	***
RIS	0	0	0	0	0	0	1	0	0	20	23	53	20
RRH	0	0	0	0	0	0	0	0	0	63	40	47	23
WEL	0	0	0	0	0	0	0	0	0	0	0	0	0

WEL began counts on May 1, but no counts are yet available.

RIS and RRH are through 05/09, LMN and PRD are through 05/10, LGS is through 05/05.

Note: JDA adult chinook counts missing for 05/09, LMN is missing 4/8, JDA has a partial count on 4/16, IHR is missing 05/06.

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.

Two Week Transportation Summary April 25th through May 11th

		0	1				Grand Total
Site	Data	CH	CH	CO	SO	ST	
LGR	Sum of NumberCollected	1050	1435550	10350	900	2543000	3990850
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of NumberBarged	1050	1360689	9952	884	2375576	3748151
	Sum of NumberBypassed	0	73372	398	14	167355	241139
LGS	Sum of NumberCollected	120	612600	2640	120	406893	1022373
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of NumberBarged	119	609478	2640	120	406646	1019003
	Sum of NumberBypassed	0	0	0	0	0	0
LMN	Sum of NumberCollected	178	231378	862	30	282167	514615
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of NumberBarged	175	221631	862	29	281901	504598
	Sum of NumberBypassed	1	9322	0	0	200	9523
MCN	Sum of NumberCollected	3647	311655	2841	20391	94529	433063
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	3644	311548	2841	20387	94494	432914
Total Sum of NumberCollected		4995	2591183	16693	21441	3326589	5960901
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of NumberBarged		1344	2191798	13454	1033	3064123	5271752
Total Sum of NumberBypassed		3645	394242	3239	20401	262049	683576

Year To Date Transportation Summary through May 11th, 2000

		CH 0	CH 1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	3160	2077060	11776	1610	3634484	5728090
	Sum of NumberTrucked	117	6084	16	187	11238	17642
	Sum of NumberBarged	2976	1969411	11362	1392	3408095	5393236
	Sum of NumberBypassed	46	98943	398	16	214885	314288
LGS	Sum of NumberCollected	120	1008910	3667	931	861020	1874648
	Sum of NumberTrucked	0	4308	5	76	6791	11180
	Sum of NumberBarged	119	1000262	3660	835	853800	1858676
	Sum of NumberBypassed	0	0	0	0	0	0
LMN	Sum of NumberCollected	178	438872	972	530	450502	891054
	Sum of NumberTrucked	0	25741	10	10	810	26571
	Sum of NumberBarged	175	402357	962	518	449211	853223
	Sum of NumberBypassed	1	9684	0	0	400	10085
MCN	Sum of NumberCollected	12414	464123	3894	28063	201507	710001
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	12398	463880	3894	28055	201441	709668
Total Sum of NumberCollected		15872	3988965	20309	31134	5147513	9203793
Total Sum of NumberTrucked		117	36133	31	273	18839	55393
Total Sum of NumberBarged		3270	3372030	15984	2745	4711106	8105135
Total Sum of NumberBypassed		12445	572507	4292	28071	416726	1034041