



Fish Passage Center

Weekly Report #00 - 3

March 24, 2000

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PLEASE NOTE:

The Fish Passage Center Weekly Report is available on Friday of each week by 4:00 p.m. on our internet homepage at www.fpc.org. If you can get the information from the website, you will get your information sooner and help us utilize our resources more efficiently by saving postage and paper costs. We can also send the report via email. Reduced use of paper also helps the environment.. Please let us know if you want to be taken off the weekly report mailing list or if you would rather receive the report by email rather than snail mail. You can email us at fpcstaff@fpc.org. Thanks!

SUMMARY OF EVENTS:

Water Supply: The cumulative precipitation for the October-March period for the Columbia above Coulee is 110% of normal, for the Snake River above Ice Harbor is 95% of normal, and for the Columbia at The Dalles with 104% of normal.

The new March Midmonth Runoff Volume Forecast has been issued. Runoff volumes are decreasing for most of the major reservoirs in the basin. The only reservoirs that recorded an increase are Libby, which increased from 105% of normal to 110% of normal and Grand Coulee, which increased from 103% of normal to 104% of normal. The Runoff Volume Forecast for The Dalles remained 99% of normal. The Snake River basin decreased at all major sites in the range of 2%-3%, resulting in a decreased Lower Granite forecast from 93% to 90%.

The Summary of the Runoff Volume Forecasts is given in the following Table:

Site	February Final Runoff Volume Forecast		March Final Runoff Volume Forecast		March MidmonthRunoff Volume Forecast	
	Runoff Volume [KAF]	% of avg.	Runoff Volume [KAF]	% of avg.	Runoff Volume [%]	% of avg.
Mica (April-Sept.)	13.5	106	12.8	101	12.9	101
Hungry Horse (April-Sept.)	2.04	93	2.1	96	2.05	94
Libby (April-Sept.)	7.25	107	7.1	105	7.43	110
Grand Coulee (Jan.-July)	66.1	104	65	103	65.8	104
The Dalles (Jan.-July)	106	100	105	99	105.0	99
Brownlee (April-July)	3.67	63	4.06	70	3.95	68
Dworshak (April-July)	2.8	104	2.8	104	2.72	101
Lower Granite (Jan.-July)	26.9	90	27.6	93	26.8	90
Heise NR-ID (April-July)	2.7	78	2.94	85	2.87	83
Weiser -ID (April-July)	3.4	62	3.77	69	3.66	67

Reservoir Operations: Reservoirs continue to be operated for power generation and flood control during fall and winter. A summary of actual elevations and required flood control elevations at the end of March is shown in the following table:

Reservoir	Actual Elev. as of March 23, 2000 [ft]	Required End of March Flood Control Elevation [ft]	Max. Reservoir Pool [ft]
Libby	2336.65	2331.3	2459.0
Hungry Horse	3504.27	3516.5	3560.0
Grand Coulee	1264.0	1272.0	1290.0
Brownlee	2051.8*	2053.1	2077.0
Dworshak	1516.9	1512.2	1600.0

*as of March 22, 2000

Libby reservoir continues to refill in order to meet the 95 BiOp and the sturgeon BiOp, which includes refill to full pool elevation by June 30 and flow releases for sturgeon spawning. The reservoir is maintaining a minimum outflows of 4 kcfs.

Hungry Horse is drafted below required flood control elevations for power generation purposes. Current outflows are in the range of 4.5 kcfs to 4.69 kcfs for the period of March 17-23.

Grand Coulee is drafted for power generation purposes below flood control elevations. Current outflows are in the range of 55.5 kcfs to 117.2 kcfs for the period of March 17-23.

Brownlee is currently drafted below the required end of March flood control elevation. Current outflows below Hells Canyon Dam are in the range of 16.32 kcfs to 23.65 kcfs for the period of March 17-23.

Dworshak is operated for flood control operations through the end of March. Current outflows have decreased from 10.8 kcfs on March 17 to 4.1 kcfs on March 23. There is currently a request for the Nez Pierce tribe hatchery to maintain 9.5 kcfs below the confluence of Big Canyon Creek at the Clearwater River to facilitate the hatchery water intake.

Flows: Requested flow operations for this period include:

- Maintenance of 105 kcfs minimum instantaneous flow at Priest Rapids Dam, starting from March 22. Flows should not be decreased to avoid stranding of juvenile fall chinook emerging below Priest Rapids at Vernita Bar. Average daily flows on March 23 decreased to 119.8 kcfs from 132.5 kcfs on March 22.
- Flow at Bonneville Dam to protect chum salmon and fall chinook emergence at the Ives/Pierce complex.

Spill: Spill in the past week has only occurred at McNary Dam for a few hours on March 22 and March 23, due to flows in excess of hydraulic capacity. There has been no other spill throughout the Snake and Columbia River systems in the past week. Dissolved gas levels were maintained below the water quality standards at all sites.

Smolt Monitoring Program. This week started with a collection of over 900 yearling chinook salmon at the Salmon River trap (WTB). Hatchery chinook (ad-clipped) accounted for over 97% of the collected chinook this week at the Salmon River trap. No PIT tagged fish from Rapid River Hatchery have been detected at the Salmon River trap yet, but they should begin showing up in next week's collections. Increased numbers of PIT tagged fish were detected leaving Rapid River Hatchery ponds between March 22 and 23 on the new PIT tag detection system being used for monitoring the volitional release there. Wild chinook dominated the trap collections on the Imnaha (100%) and Grande Ronde (94%) rivers this week. No yearling chinook were collected this week at the Snake River trap at Lewiston (LEW), but small number of coho salmon were collected. Hatchery releases of coho began mid-March this year in the Clearwater River drainage. Typically few (a total of 130 fish last year) of these coho are collected in the Snake River trap which is located about 1 km above the confluence of the Clearwater and Snake rivers.

In the lower Columbia River, subyearling chinook salmon still predominated in this week's collections at the new Bonneville Dam second powerhouse sampling facility. Of the small numbers of yearling chinook salmon collected this week, about one-third were ad-clipped (hatchery fish). Unclipped yearling chinook salmon collected at Bonneville Dam are a mixture of hatchery and wild fish.

Adult Fish Passage. During the past week, the adult fish ladder at Lower Granite Dam was shut down for two days, March 22 and 23, to remove debris from a large water pipe that supplies flow to the adult trapping facility. The COE was able to retrieve a large plastic barrel that was lodged in (corkscrewed into) the head end of the 18" pipe. The water supply to the adult trapping facility was operating by afternoon on March 23. At McNary Dam, one of the tilting exit weirs at the WA fish ladder was damaged. It is expected that the project can complete work on the weir, but needs parts and fabrication prior to the installation. The project estimated 8-h outage of the fish ladder to complete the work, tentatively scheduled for early April. At Wanapum Dam, the Right Bank fish ladder has been out of service since February 22 and should be back on line March 24. All other fish ladders should be operating at full criteria levels.

Fish counting will be initiated at most COE projects on April 1 with the Mid-Columbia projects beginning mid-April. Fish counts can be found on the FPC website: www.fpc.org. In our Weekly Report Table, the current (year 2000) count will be listed at each project, the previous year's total (1999), and 10-year average through the same ending date, generally Wednesday or Thursday of the Report week.

The first official count day at Bonneville was March 15 with 83 adult spring chinook counted through March 22; the high daily count was 33 on March 22. So far, these tallies are greater than the 1999 count but slightly below the 10-year average for the same date; however, the few fish returning in March are only a small component of the Run. Water temperatures have been fairly cool between 43 and 44°F and the Spring Run of chinook appears to be slowly coming up river. As a point of interest, there have been 3 jack chinook counted to date. The steelhead count through March 22 was 337 with 171 of the total listed as "wild" steelhead.

At Lower Granite Dam, fish counting began March 1 with 970 adult steelhead counted through March 21. Note that 3/13, and 3/14 counts are currently missing from the total. About 15% of the steelhead past the project were classed as "wild". To date, the 2000 count is less than the 1999 and

10-year average.

Hatchery Releases. Projected numbers of hatchery fish will exceed 80 million anadromous chinook, coho, and sockeye salmon along with steelhead to be released above Bonneville Dam and expected to migrate in year 2000. Columbia Basin hatcheries are nearer production levels this year compared to previous years.

Snake River – A portion of the Year 2000 migration of spring chinook were released from some acclimation ponds and streams in fall 1999. During the past two weeks, yearling spring chinook releases were initiated at Rapid River Hatchery from March 16 through about mid-April, from Imnaha Acclimation Pond starting March 22, with a small release from Dworshak NFH (65k) on March 22. Yearling spring chinook have been volitionally migrating from Curl Lake Acclimation Pond in the Tucannon River. From Rapid River H, approximately 48,000 fish from one pond are PIT tagged and will be exiting through the new PIT tag detection system installed at the exit from one large pond. These fish are part of the larger Comparative Survival Study that is on-going in the Snake River. A direct stream release of 463,000 yearling spring chinook was completed on March 10 into Rapid River from Clearwater H. These fish have been moving past the Salmon and Snake River traps during the past two weeks of sampling. Most yearling releases of spring, summer, and fall chinook will be occurring during the next month.

Most steelhead for the Snake Basin will be released in April and May. About 520,000 yearling coho were released between March 15-17 into Lapwai Cr and Potlatch R. These fish were transported by USFWS from Willard H to selected sites in those streams. These were the initial coho releases in the Snake River basin for the 2000 migration. One additional change from the past week was the initiation of a volitional release of yearling fall chinook (450,000 total) directly from Lyons Ferry H into the Snake River.

Mid-Columbia – (above McNary Dam) Yakama Tribal Supplementation Facilities at Clark Flat and Easton continued volitional release of yearling chinook this week that will end on June 1. Yearling

chinook from the Methow, Entiat, and Wenatchee River basins will mainly occur in mid-April. Yearling spring chinook from Ringold Hatchery were released in January this season. Juvenile steelhead and coho salmon will be released in April and May from Mid-Columbia hatcheries. Sockeye were released into Lake Wenatchee and the Okanogan R this past fall (1999) with no spring releases made into either Basin. Yearling summer chinook releases will occur mainly in April with subyearling summer and fall chinook released from late May to late June.

Lower Columbia - (from above Bonneville Dam to below McNary Dam). The final release of 330,000 yearling spring chinook from Klickitat Hatchery was completed during this week with the total release from the hatchery of 563,000. The Umatilla River has received greater than 500,000 yearling spring chinook during the past two weeks with the remaining chinook scheduled for release in April. In addition, about 240,000 yearling fall chinook were released in the Umatilla River in March. For the month, about 750,000 coho have been planted in the Umatilla River with the remaining expected for April. The next large release of subyearling Tule fall chinook from Spring Creek NFH is scheduled for mid April. Juvenile steelhead, chinook and coho releases will mainly occur in April in this Zone.

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
03/10/00	126.0	0.0	125.9	0.0	126.6	0.0	130.9	0.2	132.2	0.0	131.9	0.0	134.6	0.0
03/11/00	70.0	0.0	83.2	0.0	91.6	0.0	98.1	0.0	99.4	0.0	123.1	0.0	128.5	0.0
03/12/00	89.0	0.0	83.6	0.0	83.0	0.0	80.7	0.0	80.1	0.0	90.1	0.0	94.8	0.0
03/13/00	123.7	0.0	122.3	0.0	121.9	0.0	121.8	0.0	121.8	0.0	112.8	0.0	110.5	0.0
03/14/00	130.1	0.0	136.8	0.0	138.2	0.3	137.9	9.1	135.1	0.0	124.3	4.5	126.7	2.7
03/15/00	132.1	0.0	131.5	0.0	134.8	0.7	143.2	7.5	145.7	0.0	150.7	15.4	151.8	7.0
03/16/00	92.1	0.0	107.1	0.0	114.7	0.0	119.9	0.0	121.9	0.0	143.2	3.4	148.1	0.3
03/17/00	110.9	0.0	104.5	0.0	103.3	0.0	103.2	0.0	102.6	0.0	105.7	0.0	108.4	0.0
03/18/00	62.3	0.0	66.3	0.0	69.0	0.0	74.4	0.0	74.9	0.0	90.1	0.0	97.8	0.0
03/19/00	55.5	0.0	55.8	0.0	54.2	0.0	51.8	0.0	53.3	0.0	59.9	0.0	64.4	0.0
03/20/00	119.9	0.0	119.2	0.0	121.5	0.0	121.2	0.2	118.4	0.0	95.0	0.0	88.9	0.0
03/21/00	117.2	0.0	122.2	0.0	126.0	0.0	132.8	0.0	133.3	0.0	123.6	0.0	126.2	0.0
03/22/00	102.4	0.0	104.3	0.0	105.1	0.0	107.0	0.0	109.7	0.0	125.3	0.0	132.5	0.0
03/23/00	89.6	0.0	94.2	0.0	97.7	0.0	101.8	0.0	102.8	0.0	115.7	0.0	118.7	0.0

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

Date	Dworshak		Hells Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
03/10/00	10.8	0.0	20.6	16.0	52.9	0.0	49.1	0.0	52.0	0.0	50.4	0.0
03/11/00	10.8	0.0	18.7	20.0	52.8	0.0	55.9	0.0	58.4	0.0	58.0	0.0
03/12/00	10.8	0.0	19.6	22.8	51.0	0.0	49.9	0.0	54.9	0.0	56.7	0.0
03/13/00	10.8	0.0	20.6	18.5	51.7	0.0	56.1	0.0	59.8	0.0	61.6	0.0
03/14/00	10.8	0.0	20.5	18.0	51.9	0.0	51.2	0.0	53.1	0.0	50.7	0.0
03/15/00	10.9	0.0	19.8	23.2	49.8	0.0	49.2	0.0	53.9	0.0	55.5	0.0
03/16/00	10.8	0.0	20.9	19.0	53.4	0.0	52.9	0.0	53.1	0.0	53.5	0.0
03/17/00	10.8	0.0	20.7	22.7	55.2	0.0	54.1	0.0	57.9	0.0	56.7	0.0
03/18/00	6.1	0.0	20.1	23.7	48.5	0.0	51.4	0.0	53.9	0.0	53.4	0.0
03/19/00	5.9	0.0	21.8	23.4	45.6	0.0	48.5	0.0	51.8	0.0	51.9	0.0
03/20/00	6.4	0.0	20.8	21.5	53.1	0.0	54.4	0.0	56.5	0.0	56.7	0.0
03/21/00	4.8	0.0	20.1	21.8	46.4	0.0	46.7	0.0	50.3	0.0	50.6	0.0
03/22/00	4.2	0.0	20.1	18.0	44.0	0.0	47.4	0.0	48.5	0.0	47.1	0.0
03/23/00	4.1	0.0	---	---	49.6	0.0	48.9	0.0	52.7	0.0	---	---

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		
03/10/00	175.3	0.0	189.5	0.0	192.0	0.0	211.3	104.0	17.4	80.6
03/11/00	186.1	0.0	207.8	0.0	207.7	0.0	210.0	113.8	16.6	70.4
03/12/00	172.6	0.0	188.5	0.0	188.4	0.0	211.5	119.5	17.1	65.6
03/13/00	170.4	0.0	192.9	0.0	196.6	0.0	210.1	117.2	17.2	66.3
03/14/00	181.4	0.0	191.4	0.0	189.1	0.0	199.8	104.9	17.2	68.4
03/15/00	172.6	0.0	189.3	0.0	189.7	0.0	198.9	106.8	16.6	66.2
03/16/00	208.1	0.0	211.3	0.0	206.8	0.0	205.0	94.4	28.5	72.8
03/17/00	186.6	0.0	197.3	0.0	197.9	0.0	214.2	0.0	83.1	121.8
03/18/00	165.9	0.0	175.5	0.0	179.4	0.0	193.7	0.0	70.8	113.6
03/19/00	143.9	0.0	157.2	0.0	156.0	0.0	173.9	0.0	64.5	100.1
03/20/00	127.2	0.0	157.6	0.0	167.6	0.0	181.4	0.0	73.2	99.0
03/21/00	150.6	0.0	154.0	0.0	158.5	0.0	173.9	0.0	73.0	91.9
03/22/00	157.4	4.9	176.4	0.0	175.7	0.0	182.3	0.0	81.4	91.7
03/23/00	188.9	1.2	179.4	0.0	179.6	0.0	189.4	0.0	77.6	102.5

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	Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
3/9	96	96	97	6	102	102	103	24	103	103	103	24	102	103	105	23	---	---	---	0
3/10	96	96	97	6	103	104	111	24	102	103	103	24	102	102	103	23	---	---	---	0
3/11	96	96	97	7	103	104	109	24	102	102	103	24	102	102	103	23	---	---	---	0
3/12	96	96	97	6	103	105	112	24	102	102	102	24	102	102	103	23	---	---	---	0
3/13	96	96	96	4	103	103	104	24	102	103	104	24	102	102	104	23	---	---	---	0
3/14	96	96	96	5	102	103	103	24	103	103	104	24	102	103	105	23	---	---	---	0
3/15	96	97	99	15	102	102	103	24	103	103	104	24	102	102	103	23	---	---	---	0
3/16	97	97	98	21	102	102	103	24	103	104	104	24	103	103	105	23	---	---	---	0
3/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/18	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/19	97	97	98	24	101	102	102	24	111	113	135	16	104	104	105	23	---	---	---	0
3/20	96	96	97	21	101	101	102	20	100	100	100	4	102	102	104	19	---	---	---	0
3/21	96	96	96	24	102	102	103	24	100	100	100	8	102	102	102	23	---	---	---	0
3/22	97	97	97	24	102	102	103	24	105	105	117	13	103	104	104	23	---	---	---	0

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	Chief J. Dnst				Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
3/9	---	---	---	0	---	---	---	0	---	---	---	0	100	100	101	23	---	---	---	0
3/10	---	---	---	0	---	---	---	0	---	---	---	0	100	100	101	24	---	---	---	0
3/11	---	---	---	0	---	---	---	0	---	---	---	0	99	100	101	24	---	---	---	0
3/12	---	---	---	0	---	---	---	0	---	---	---	0	98	99	100	24	---	---	---	0
3/13	---	---	---	0	---	---	---	0	---	---	---	0	100	101	102	24	---	---	---	0
3/14	---	---	---	0	---	---	---	0	---	---	---	0	100	101	101	24	---	---	---	0
3/15	---	---	---	0	---	---	---	0	---	---	---	0	101	101	102	24	---	---	---	0
3/16	---	---	---	0	---	---	---	0	---	---	---	0	102	102	102	24	---	---	---	0
3/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/18	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/19	---	---	---	0	---	---	---	0	---	---	---	0	100	101	101	24	---	---	---	0
3/20	---	---	---	0	---	---	---	0	---	---	---	0	100	100	101	15	---	---	---	0
3/21	---	---	---	0	---	---	---	0	---	---	---	0	101	101	102	24	---	---	---	0
3/22	---	---	---	0	---	---	---	0	---	---	---	0	102	103	103	24	---	---	---	0

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	Rock Island				Rock I. Tlwr				Wanapum				Wanapum Tlwr				Priest Rapids			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
3/9	102	103	103	24	---	---	---	0	103	103	104	24	103	103	103	24	103	102	103	24
3/10	101	102	102	24	---	---	---	0	102	102	103	24	102	102	103	24	102	102	103	24
3/11	101	101	102	24	---	---	---	0	102	102	103	24	102	102	103	24	102	102	103	24
3/12	101	101	101	24	---	---	---	0	102	102	103	24	102	102	102	24	102	103	104	24
3/13	101	102	102	24	---	---	---	0	103	103	104	24	102	102	103	24	102	103	104	24
3/14	102	102	102	24	---	---	---	0	103	103	104	24	103	103	109	24	103	103	104	24
3/15	103	105	105	24	---	---	---	0	102	102	103	24	104	104	113	24	104	103	107	24
3/16	104	104	105	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/18	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/19	102	102	102	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/20	101	101	101	15	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/21	101	102	102	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/22	102	102	102	24	---	---	---	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 Lower Columbia and Snake River Sites

Date	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clearwater</u>			<u>Anatone</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		#			
	Avg	Avg		hr	Avg	Avg		hr	Avg	Avg		hr	Avg	Avg			hr	Avg	Avg	hr
3/9	103	103	103	24	---	---	---	0	97	98	98	24	---	---	---	0	102	102	102	24
3/10	103	103	104	24	---	---	---	0	97	97	97	24	---	---	---	0	102	103	104	24
3/11	103	103	104	24	---	---	---	0	97	97	97	24	---	---	---	0	102	102	103	14
3/12	103	103	104	24	---	---	---	0	97	97	98	24	---	---	---	0	102	103	103	24
3/13	104	104	105	24	---	---	---	0	97	98	98	24	---	---	---	0	103	103	104	24
3/14	104	104	106	24	---	---	---	0	98	98	98	24	---	---	---	0	102	103	103	24
3/15	106	106	110	24	---	---	---	0	97	97	97	21	---	---	---	0	102	103	104	24
3/16	---	---	---	0	---	---	---	0	98	98	98	24	---	---	---	0	102	102	102	24
3/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/18	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/19	---	---	---	0	---	---	---	0	97	98	98	21	---	---	---	0	102	102	103	21
3/20	---	---	---	0	---	---	---	0	97	98	103	19	---	---	---	0	102	102	103	21
3/21	---	---	---	0	---	---	---	0	96	97	97	24	---	---	---	0	102	103	104	24
3/22	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Snake-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>	High	#	<u>24 h</u>	<u>12 h</u>	High	#	<u>24 h</u>	<u>12 h</u>	High	#	<u>24 h</u>	<u>12 h</u>	High		#			
	Avg	Avg		hr	Avg	Avg		hr	Avg	Avg		hr	Avg	Avg			hr	Avg	Avg	hr
3/9	---	---	---	0	100	100	101	24	100	100	100	24	---	---	---	0	---	---	---	0
3/10	---	---	---	0	100	101	101	24	99	99	100	13	---	---	---	0	---	---	---	0
3/11	---	---	---	0	100	101	101	24	---	---	---	0	---	---	---	0	---	---	---	0
3/12	---	---	---	0	101	101	101	24	---	---	---	0	---	---	---	0	---	---	---	0
3/13	---	---	---	0	102	103	104	24	100	100	101	13	---	---	---	0	---	---	---	0
3/14	---	---	---	0	102	102	103	24	101	102	102	24	---	---	---	0	---	---	---	0
3/15	---	---	---	0	102	103	104	24	101	102	102	24	---	---	---	0	---	---	---	0
3/16	---	---	---	0	102	103	103	24	102	102	103	24	---	---	---	0	---	---	---	0
3/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/18	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/19	---	---	---	0	102	102	102	21	101	101	101	21	---	---	---	0	---	---	---	0
3/20	---	---	---	0	100	101	101	16	100	100	100	16	101	101	103	5	100	100	101	6
3/21	---	---	---	0	101	101	102	24	101	101	102	24	101	102	102	24	101	101	101	24
3/22	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

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>	High	#	<u>24 h</u>	<u>12 h</u>	High	#	<u>24 h</u>	<u>12 h</u>	High	#	<u>24 h</u>	<u>12 h</u>	High		#			
	Avg	Avg		hr	Avg	Avg		hr	Avg	Avg		hr	Avg	Avg			hr	Avg	Avg	hr
3/9	---	---	---	0	---	---	---	0	101	101	101	24	102	102	102	24	102	103	103	24
3/10	---	---	---	0	---	---	---	0	101	101	102	12	101	101	102	12	102	103	104	24
3/11	---	---	---	0	---	---	---	0	101	101	102	24	102	102	102	24	101	102	102	24
3/12	---	---	---	0	---	---	---	0	102	102	103	24	102	102	103	24	102	103	104	23
3/13	---	---	---	0	---	---	---	0	101	101	102	12	102	102	102	12	103	103	104	17
3/14	---	---	---	0	---	---	---	0	101	101	102	24	102	102	102	24	103	103	103	18
3/15	---	---	---	0	---	---	---	0	101	102	102	24	101	102	102	24	104	105	107	20
3/16	---	---	---	0	---	---	---	0	102	103	103	24	102	102	103	24	103	104	104	23
3/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/18	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/19	---	---	---	0	---	---	---	0	101	101	102	6	101	101	102	6	103	103	103	3
3/20	---	---	---	0	---	---	---	0	100	100	100	16	100	100	101	16	101	101	102	8
3/21	101	101	101	12	100	100	100	2	100	101	101	24	100	101	101	24	102	102	102	7
3/22	---	---	---	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 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>24 h</u>	<u>12 h</u>		<u>24h</u>	<u>12h</u>		<u>24h</u>	<u>12h</u>		<u>24h</u>	<u>12h</u>						
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	AVG	High	hr	
3/9	103	103	103	24	103	103	103	24	---	---	---	0	---	---	---	0	---	---	---	0
3/10	103	104	104	24	103	104	104	24	---	---	---	0	---	---	---	0	---	---	---	0
3/11	102	103	104	24	103	103	103	24	---	---	---	0	---	---	---	0	---	---	---	0
3/12	103	104	104	24	103	103	103	24	---	---	---	0	---	---	---	0	---	---	---	0
3/13	104	105	106	21	104	105	105	24	---	---	---	0	---	---	---	0	---	---	---	0
3/14	104	104	105	23	104	104	105	24	---	---	---	0	---	---	---	0	---	---	---	0
3/15	104	104	105	19	103	104	104	22	---	---	---	0	---	---	---	0	---	---	---	0
3/16	105	105	106	16	104	104	104	24	---	---	---	0	---	---	---	0	---	---	---	0
3/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/18	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/19	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/20	102	102	103	8	102	102	102	8	---	---	---	0	---	---	---	0	---	---	---	0
3/21	104	104	105	24	103	104	104	24	---	---	---	0	---	---	---	0	---	---	---	0
3/22	105	105	105	24	105	106	110	24	---	---	---	0	---	---	---	0	---	---	---	0

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>24 h</u>	<u>12 h</u>		<u>24h</u>	<u>12h</u>		<u>24h</u>	<u>12h</u>		<u>24h</u>	<u>12h</u>						
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	AVG	High	hr	
3/9	---	---	---	0	102	102	102	24	103	104	111	24	103	103	108	24	102	103	103	23
3/10	---	---	---	0	102	102	102	24	115	116	117	24	109	110	110	24	105	108	109	23
3/11	---	---	---	0	101	101	102	24	116	116	116	24	110	111	113	24	110	111	111	23
3/12	---	---	---	0	102	102	102	24	116	117	117	24	111	112	112	24	112	112	113	23
3/13	---	---	---	0	102	103	103	24	116	117	117	24	112	112	113	24	111	112	112	23
3/14	---	---	---	0	102	102	102	24	115	116	116	24	109	110	111	24	111	111	112	23
3/15	---	---	---	0	102	102	103	22	116	117	118	22	111	112	112	22	111	111	111	22
3/16	---	---	---	0	102	102	103	24	115	116	117	24	109	111	111	24	110	111	111	23
3/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/18	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/19	---	---	---	0	102	102	102	24	102	102	103	24	102	102	103	24	102	102	102	23
3/20	---	---	---	0	101	101	102	18	102	102	103	18	102	102	104	18	101	102	103	19
3/21	---	---	---	0	102	103	103	24	103	103	104	24	103	104	105	24	103	104	104	23
3/22	---	---	---	0	103	103	103	24	103	103	104	24	103	103	104	24	103	103	103	23

Hatchery Release Summary

From 3/10/00 to 3/23/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates...		Release Site	River Name
				Begin...	...End		
IDFG							
Clearwater	SP Chinook	2000	462,949	03/06/00	03/10/00	Rapid R	Little Salmon River
Rapid River	SP Chinook	2000	2,463,000	03/16/00	04/15/00	Rapid River H	Little Salmon River
	Agency Totals:		2,925,949	.....		
Nez Perce Tribe							
Willard	Coho	2000	265,000	03/15/00	03/15/00	Lapwai Cr	Clearwater Rvr M F
	Coho	2000	265,000	03/17/00	03/17/00	Potlatch R	Clearwater Rvr M F
	Agency Totals:		530,000	.....		
ODFW							
Imnaha	SP Chinook	2000	180,000	03/22/00	04/18/00	Imnaha Acclim Pd	Imnaha River
	Agency Totals:		180,000	.....		
Umatilla Tribe							
Cascade	Coho	2000	250,000	03/15/00	03/15/00	Umatilla R	Umatilla River
Lower Herman C	Coho	2000	500,000	03/15/00	03/15/00	Umatilla R	Umatilla River
	Agency Totals:		750,000	.....		
USFWS							
Dworshak	SP Chinook	2000	1,030,000	03/22/00	04/07/00	Dworshak H	Clearwater Rvr M F
	Agency Totals:		1,030,000	.....		
WDFW							
Klickitat	SP Chinook	2000	563,000	03/01/00	03/24/00	Klickitat H	Klickitat River
Lyons Ferry	FA Chinook	2000	450,000	03/22/00	04/15/00	Lyons Ferry H	Snake River
Tucannon	SP Chinook	2000	128,000	03/10/00	04/20/00	Curl Lake	Tucannon River
	Agency Totals:		1,141,000	.....		
Warm Spgs Tribe							
Round Butte	SP Chinook	2000	4,200	03/20/00	03/20/00	Parkdale Acclim Pd	Hood River
	Agency Totals:		4,200	.....		
Yakama 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
	Agency Totals:		465,800	.....		
	Total Release..						7,026,949

Hatchery Release Summary

From 3/24/00 to 4/6/00

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin... ..End	Release Site	River Name
IDFG						
Magic Valley						
SU	Steelhead	2000	52,000	04/03/00 05/12/00	Squaw Cr Acclim Pd	Salmon River
McCall						
SU	Chinook	2000	195,400	04/03/00 04/07/00	S Fk Salmon R	Salmon River
SU	Chinook	2000	821,000	04/03/00 04/07/00	S Fk Salmon R	Salmon River
Niagara Springs						
SU	Steelhead	2000	600,000	03/27/00 04/08/00	Hells Canyon Dam	Snake River
Sawtooth						
SP	Chinook	2000	124,500	04/04/00 04/21/00	Sawtooth H	Salmon River
Agency Totals:			1,792,900	.....	
Nez Perce Tribe						
Lookingglass						
SP	Chinook	2000	35,000	04/01/00 04/18/00	Lostine Accim Pd	Wallowa River
McCall						
SU	Chinook	2000	79,000	03/27/00 03/29/00	Johnson Cr	South Fork Salmon River
Agency Totals:			114,000	.....	
ODFW						
Lookingglass						
SP	Chinook	2000	38,000	04/01/00 04/18/00	Catherine Cr	Grande Ronde River
Round Butte						
SU	Steelhead	2000	161,000	04/04/00 04/14/00	Bel. Pelton Dam	Deschutes River
Wallowa						
SU	Steelhead	2000	348,000	04/05/00 04/07/00	Wallowa Acclim Pd	Wallowa River
Agency Totals:			547,000	.....	
Umatilla Tribe						
Minthorn						
SU	Steelhead	2000	50,000	04/03/00 04/10/00	Minthorn Acclim Pd	Umatilla River
SU	Steelhead	2000	50,000	04/03/00 04/10/00	Bonifer Acclim Pd	Umatilla River
Agency Totals:			100,000	.....	
USFWS						
Entiat						
SP	Chinook	2000	363,000	04/01/00 04/01/00	Entiat H	Entiat River
Hagerman						
SU	Steelhead	2000	150,000	04/03/00 04/08/00	Little Salmon R	Salmon River
SU	Steelhead	2000	250,000	04/03/00 04/08/00	Little Salmon R	Salmon River
SU	Steelhead	2000	50,000	04/03/00 04/08/00	Hazard Cr	Little Salmon River
Kooskia						
SP	Chinook	2000	50,000	03/30/00 04/07/00	Clear Cr	Clearwater Rvr M F
SP	Chinook	2000	379,000	04/01/00 04/10/00	Kooskia H	Clearwater Rvr M F
Warm Springs						
SP	Chinook	2000	680,000	03/25/00 04/19/00	Warm Springs R	Deschutes River
Agency Totals:			1,922,000	.....	
WDFW						
Lyons Ferry						
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
Washougal						
	Coho	2000	2,500,000	03/27/00 04/04/00	Klickitat R	Klickitat River
Wells						
SU	Chinook	2000	293,000	04/01/00 04/25/00	Similkameen Acclim Pd	Okanogan River
SU	Steelhead	2000	140,000	04/03/00 04/30/00	Methow R	Methow River
SU	Steelhead	2000	68,000	04/03/00 04/25/00	Similkameen Acclim Pd	Okanogan River
SU	Steelhead	2000	88,000	04/03/00 04/30/00	Okanogan R	Okanogan River
SU	Steelhead	2000	140,000	04/03/00 04/30/00	Twisp R	Methow River
SU	Steelhead	2000	140,000	04/03/00 04/30/00	Chewuch R	Methow River
Agency Totals:			3,744,000	.....	
Yakama Tribe						
Jack Creek Pond						
SP	Chinook	2000	137,500	03/31/00 06/01/00	Jack Creek Acclim Pd	Yakama River
Agency Totals:			137,500	.....	
Total Release..			8,357,400	.....	

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)
03/11/00	---	0	---	---	---	---	---	---	---	---	0
03/12/00	---	0	---	---	---	---	---	---	---	---	0
03/13/00	0	0	0	0	---	---	---	---	---	---	463
03/14/00	0	0	0	0	---	---	---	---	---	---	0
03/15/00	0	0	0	0	---	---	---	---	---	---	0
03/16/00	1	0	0	0	---	---	---	---	---	---	0
03/17/00	0	0	0	0	---	---	---	---	---	---	0
03/18/00	---	0	---	---	---	---	---	---	---	---	0
03/19/00	---	0	---	---	---	---	---	---	---	---	0
03/20/00	0	0	0	0	---	---	---	---	---	---	0
03/21/00	0	0	0	0	---	---	---	---	---	---	0
03/22/00	0	0	0	0	---	---	---	---	---	---	0
03/23/00	0	0	0	0	---	---	---	---	---	---	0
03/24/00					---	---	---	---	---	---	0
Total:	1	0	0	0	0	0	0	0	0	0	463
# Days:	9	13	9	9	0	0	0	0	0	0	12
Average:	0	0	0	0	0	0	0	0	0	0	39

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 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.

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 03/22

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	83	3	50	1	91	0	0	0	0	0	0	0	0	0	0	0	0	0
TDA	0	0					0	0					0	0				
JDA	0	0					0	0					0	0				
MCN	0	0					0	0					0	0				
IHR	0	0					0	0					0	0				
LMN	0	0					0	0					0	0				
LGS	0	0			**	**	0	0			**	**	0	0			**	**
LWG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRD	0	0					0	0					0	0				
RIS	0	0					0	0					0	0				
RRH	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	337	198	282	171
TDA	0	0					0			0			0
JDA	0	0					0			0			0
MCN	0	0					0			0			0
IHR	0	0					0			0			0
LMN	0	0					0			0			0
LGS	0	0			**	**	0		**	0		**	0
LWG	0	0	0	0	0	0	0	0	0	970	1,522	1,373	146
PRD	0	0					0			0			***
RIS	0	0					0			0			0
RRH	0	0					0			0			0
WEL	0	0					0			0			0

Note: LGR is through 03/21 and 03/13 and 03/14's data is missing.

Note: LGR's fish ladder was down on 03/22 and 03/23.

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.