



*Fish Passage Center*

# Weekly Report #01 - 12

June 1, 2001

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## SIGNIFICANT POINTS

- **Lake Pend Oreille behind the Albeni Falls project will continue to fill to its full summer recreation level.**
- **Biological Opinion target flow levels are not being met in 2001.**
- **The US Bureau of Reclamation has agreed to release additional volumes of water from Grand Coulee Reservoir to augment mid and lower Columbia flows to aid migrating juvenile salmon.**
- **The highest flows this spring in the Mid-Columbia occurred from May 21-25 and were effective in moving fish past Rock Island and McNary dams as evidenced by increased passage indices.**
- **The total count of adult spring chinook at Bonneville Dam is 391,367 through May 31; about double the 2000 return and over five times greater than the ten-year average. Beginning next week fish counted at Bonneville Dam will be designated as summer chinook.**

## SUMMARY OF EVENTS:

**Water Supply:** Precipitation was below average and average for most of the region. The cumulative precipitation for October through May 29 for the Columbia above Grand Coulee was 67% of average, for the Columbia above The Dalles, 70% of average, and for the Snake River above Ice Harbor, 52% of average. For the period of May 1-29, the highest precipitation was recorded at Columbia above Castlegar, at 133% of average, and the lowest precipitation was recorded at Owyhee/Malheur at 32% of average.

The June Early Runoff Volume Forecast was issued. Due to increased precipitation in the Upper Columbia part of the system, the estimated runoff volumes increased for Mica and Hungry Horse

compared to the May Final. At the same time, projected Runoff Volumes at Libby decreased by 2% compared to the May Final. The Final Runoff Volumes for the two major sites at The Dalles and Lower Granite did not change. The summary of the Runoff Volume Forecasts is given in the following Table:

Site	June Early		April Final		May Final	
	Runoff Volume [KAF]	% of avg	Runoff Volume [KAF]	% of avg	Runoff Volume [KAF]	% of avg
<i>Mica (April-Sept.)</i>	9900	78	9800	77	9300	73
<i>Hungry Horse (Apr-Sep)</i>	1360	62	1300	60	1330	61
<i>Libby (April-Sept.)</i>	3620	53	3530	52	3740	55
<i>Grand Coulee (Jan-July)</i>	37800	60	37500	59	37800	60
<i>The Dalles (Jan-July)</i>	56100	53	56100	53	56500	53
<i>Brownlee (April-July)</i>	2080	36	1890	33	1950	34
<i>Dworshak (April-July)</i>	1400	52	1400	52	1440	53
<i>Lower Granite (Jan-July)</i>	14000	47	14100	47	14100	47
<i>Heise (ID) (April-July)</i>	1950	57	2030	59	2040	59
<i>Weiser (ID) (April-July)</i>	1910	35	1730	32	1780	33

**Reservoir Operations:** Reservoirs continue to be operated for refill and power generation. Most of the reservoirs will not refill by the end of June as required by the 2000 Biological Opinion. A summary of the actual elevation change and full pool elevations is shown in the following Table:

Reservoir	The Change of Actual Elev. From May 25-31, 2001 [ft]	Maximum Reservoir pool [ft]
<i>Libby</i>	2400.48-2410.64	2459
<i>Hungry Horse</i>	3516.54-3525.06	3560
<i>Grand Coulee</i>	1261.30-1272.60	1290
<i>Brownlee</i>	2075.99-2076.37*	2077
<i>Dworshak</i>	1567.33-1574.23	1600

\*as of May 30

*Libby* reservoir continued at a minimum outflow of 4 kcfs. Major snowmelt in the subbasin increased inflows to the range of 23.2 kcfs to 38.3 kcfs for the period of May 25-31.

*Hungry Horse* operated at a minimum outflow of 0.5 kcfs for the period of May 25-31. Required minimum flows of 3.5 kcfs at Columbia Falls are being met by increased local inflows. Inflows into the reservoir increased due to local snowmelt and fluctuated between 8.33 kcfs on May 31 and 19.37 kcfs on May 27.

*Grand Coulee* operated to meet system power peaking demands and to refill. The current outflows were in the range of 21.3 kcfs-74.9 kcfs for the period of May 25-31. For the same period, inflows were in the range of 110.5 kcfs-133.7 kcfs.

*Brownlee* reservoir elevations were fluctuating between 2075.99 ft and 2076.74 ft. The outflows at Hells Canyon Dam project were in the range of 8.79 kcfs to 14.42 kcfs for the period of May 25-30. The Brownlee inflows were in the range of 11.1 kcfs to 11.93 kcfs for the same period.

*Dworshak* operated on minimum outflow at 1.4 kcfs-1.7 kcfs. Inflows increased due to snowmelt to 13.3 kcfs on May 25, decreasing to 8.8 kcfs on May 30.

*Upper Snake projects* continued to be drafted due to irrigation demands, to 72% of capacity on May 31. American Falls is at 72% of capacity, Palisades is at 54% of capacity and Jackson Lake is at 90% of capacity. Flow below Milner is only 262 cfs as of May 31. Augmentation delivery of 38 KAF is finished and flows decreased to 262 cfs on May 31 at ramping rate of approximately 100 cfs/day beginning on May 16.

**Flows:** Flows decreased in the Snake basin as snowmelt tapered. Flows fluctuated in the Upper and Mid Columbia subbasins due to continuing snowmelt. While it is the peak of the snowmelt season, the flows are far below required BiOp flow targets. Flows below Bonneville fluctuated between 121.4 kcfs and 174.9 kcfs for the period of May 25-31, depending upon power generation demands.

Flows at Priest Rapids fluctuated between 49.3 kcfs and 97.3 kcfs for the period of May 25-31. The average flow for the same period was 73.03 kcfs.

The 1995 Biological Opinion spring flow target is 85 Kcfs at Lower Granite beginning April 10. Current flows were in the range of 54.5 kcfs on May 31 to 75.5 kcfs on May 26. The average daily flow for the period of May 25-31 was 65.2 kcfs.

The 1995 Biological Opinion spring flow target at McNary is 220 kcfs, beginning April 20. The average daily flow for the period of May 25-31 was 139.7 kcfs, with fluctuations between 116.4 kcfs on May 28 to 155.7 kcfs on May 25.

**Spill:** In addition to the modified lower Columbia spill program at The Dalles and Bonneville dams, additional spill was added at McNary and John Day dams beginning on the evening of May 25<sup>th</sup>. Spill at McNary Dam equaled 30 Kcfs for 12 hours a day on an alternate day basis, while spill at John Day was approximately 30% of instantaneous flow for a 12-hour period daily. The decision to continue spill is being made today at a meeting of the Federal Executives.

The FERC fish spill program continues at the Mid Columbia projects. Total dissolved gas readings at most monitors are reading in excess of 100%, but less than the waiver limits. Fish with bubbles in their lateral line continue to be sampled at both McNary and Rock Island dams.

**Smolt Monitoring:** Trap collections were lower this week at all SMP traps except for steelhead at the Imnaha (IMN) and mainstem Snake (LEW) River traps. This week saw Snake River daily average flows at Lower Granite Dam rise from the low 60's to 75.5 kcfs on May 26, before dropping back to the mid-50's by week's end. The May 27 collection at Lower Granite Dam (24-hr sampling from 07:00 May 26 to 07:00 May 27) spiked nearly three-fold for yearling chinook and steelhead above the prior days of this week, and plummeted to less than one-tenth of that one-day high by week's end. This pattern of movement of smolts at Lower Granite Dam shows that at this year's low flows, the 25% increase in flows was very effective in

moving fish previously stalled in the forebay into the facility. Rock Island Dam passage indices hit their highest levels this year between May 22 (starting 09:00 May 21) and 27 (ending 09:00 May 27) for yearling chinook, coho, steelhead, and sockeye. The highest flows of this springtime occurred in the Mid-Columbia River from May 21 to May 25 with daily average flows reaching 77 to 88 kcfs, about double the level of most prior days. More Mid-Columbia River yearling chinook (based on PIT tag detections) arrived at McNary Dam this week as a result of the five-day increase in Mid-Columbia River flows. From May 24 (starting 07:00 May 23) to May 28 (ending 07:00 May 28) the yearling chinook passage indices at McNary Dam jumped to peak levels between 98,000 and 194,000 fish. This week also saw increasing numbers of subyearling chinook, coho, and sockeye arriving at McNary Dam. In the lower Columbia River, coho predominated in this week's collections with peak passage indices occurring between May 22 and 28.

**Adult Fish Passage** – Fish counting started April 1 at most COE projects; currently all COE projects are counting adult fish passing mainstem Columbia and Snake River dams. The PUD projects on the Mid-Columbia River began counting on April 15 at Priest Rapids, Rock Island, and Rocky Reach dams, with Wells Dam initiating counting on May 1. The Fish Passage Center Weekly Report will list in a Table; the adult fish counts for the week with the previous year (2000) and the 10-year averages through the same ending date so the reader can compare passage throughout the year for the individual species.

At Bonneville Dam, adult spring chinook salmon counts averaged 2,183 per day for the week ending May 31, with a daily peak count of 2,750 on May 26. The total count of adult spring chinook is 391,367 through May 31 and compares with 178,302 in 2000 and 70,775 for the 10-year average. The 2001 count remained about double (2.2 times greater) and 5.5 times greater than the respective 2000 and 10-year average. At The Dalles Dam, 297,572 adult salmon have been counted through May 31 (approx. 76% of the Bonneville count). The McNary Dam count of adult spring chinook through May 31 was 245,754. Of

these fish at McNary, 157,939 adult spring chinook (Ice Harbor Count) continued up the Snake River and 48,793 passed Priest Rapids Dam. Adult spring chinook passage at Prosser Dam (Yakama River) was estimated to range between 20,000 to 22,000 while numbers of adult spring chinook from Ringold Hatchery returns and the estimated sport catch totaled nearly 2,600. Counts from Ice Harbor, Priest Rapids, Ringold, and Prosser account for about 94% of the adult spring chinook salmon that have passed McNary Dam. Up the mid-Columbia River, about 37,000 adult spring chinook have passed Rock Island Dam, with 14,100 passing Rocky Reach Dam through May 30. At Wells Dam, about 9,000 adult spring chinook were counted through May 30. At Lower Granite Dam, more than 149,500 adult spring chinook have been tallied through May 31. The jack chinook count at Bonneville Dam totals 14,174 for this season, with daily counts ranging between 166 and 271 for the week. The jack count (14,174) remained about 3 times greater than the 10-year average and about 67% of the record 2000 jack spring chinook count. The jack spring chinook counts drop off rapidly between some dams (see adult table) with the Snake River relatively low and the mid-Columbia high compared to the 10-year averages.

Beginning next week, fish at Bonneville and The Dalles Dam will change to a summer chinook designation based on a calendar date. Based on PIT tag recoveries at Bonneville Dam and Lower Granite Dam, summer chinook from the Snake River have been passing the lower projects for about a month.

Steelhead passage at Bonneville Dam had counts ranging between 138 and 185 per day through the week with the total through May 31 of 6,198. Numbers also were slowly increasing at The Dalles, John Day, and McNary dams, with other projects still at reduced rates at all other projects.

Adult sockeye are slowly beginning to pass the lower river projects and will be moving up into the mid-Columbia River to their main spawning sites in Lake Wenatchee and Lake Osoyoos. Only a small portion of the run will enter the Snake River to spawn. The sockeye count to date at Bonneville Dam is 32.

**Hatchery Releases** – See the Hatchery Release Summary for the previous two-week and next two week projected releases for the Columbia River Basin above Bonneville Dam.

*Snake River* – Releases of yearling chinook, coho, sockeye, and steelhead are completed for this 2001 migration season. Approximately 4.16 million spring and summer chinook were released this year and include a small number released last fall. Hatchery release of yearling fall chinook is also completed for the season, with approximately 450,000 yearling fall chinook released directly from Lyons Ferry Hatchery and 343,000 released from the Acclimation Ponds at Captain Johns, Pittsburg Landing (Snake River) and Big Canyon (Clearwater River). About 580,000 coho were released into the Clearwater River basin. About 9.83 million juvenile steelhead were released in the Snake River basin for the 2001 migration season. A small number of yearling sockeye salmon were released into Redfish Lake Creek during the spring season. Approximately 1.4 million subyearling fall chinook from Lyons Ferry Hatchery and the Snake and Clearwater Acclimation Ponds will be released in late May and June. Another 107,000 were released below Hells Canyon Dam by IDFG this past week.

*Mid-Columbia [above McNary Dam]* – Releases of yearling spring chinook are completed for this 2001 migration season. Approximately 3.3 million yearling spring chinook were released in the mid-Columbia River Zone for the 2001 migration season. About 241,000 sockeye salmon were released into Lake Wenatchee from net pens and into Lake Osoyoos (direct releases) during the 2000 fall prior to the 2001 migration. Releases of yearling summer chinook are also completed for this season, with subyearling summer chinook scheduled for release in June. About 4.3 million summer chinook are scheduled for release in the mid-Columbia Reach. Hatchery steelhead releases are completed for the season with near normal (1.34 million) release for this Reach. The Wenatchee, Entiat, Methow, Okanogan and main Columbia (Ringold Hatchery release) rivers were planted with the “endangered” status steelhead from WDFW and USFWS hatcheries. Steelhead

from Lyons Ferry Hatchery were released into the Walla Walla River basin, but are not considered part of the listed steelhead. The coho releases should be completed for the season with coho released into the Methow, Wenatchee, and Yakama rivers. Subyearling fall chinook releases will be primarily from the lower section of the reach, i.e., Priest Rapids, Ringold, and Yakama Rivers. Release of subyearling fall chinook was initiated in the Yakama River basin during the past week. The estimated release of 12.2 million subyearling fall chinook in 2001 is close to the previous seven years’ annual production.

*Lower Columbia [McNary Dam to above Bonneville Dam]*– Releases of yearling spring chinook are completed for this 2001 migration year. Spring chinook were released in the Umatilla, Klickitat, Deschutes, Hood, Wind, and Little White Salmon rivers. The estimated number of hatchery spring chinook released in this river zone was about 5.9 million. About 500,000 subyearling spring chinook have been released into the White Salmon River and another 160,000 into the upper Klickitat River. About 10.6 million subyearling tule fall chinook were released from Spring Creek National Fish Hatchery this season. Yearling releases of “bright” fall chinook were made in March and April in the Umatilla River; the remaining fall chinook release groups will be subyearling fish liberated in late May and June. Subyearling fall chinook were on going during the week in the Umatilla and Klickitat River basins. Normal production of subyearling “bright” fall chinook generally ranges between 8 and 10 million annually. Releases of about 6.6 million coho salmon were completed in the Umatilla, Little White Salmon, and Klickitat River basins for the 2001 migration. Steelhead were released in the Umatilla, Little White Salmon, Klickitat, and Hood River basins from late April through May.

**Daily Average Flow and Spill (in kcfs) at Mid-Columbia Projects**

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/18/01	27.9	0.0	28.7	0.0	34.0	3.0	34.7	0.0	40.3	8.0	45.7	19.4	47.5	29.1
05/19/01	30.7	0.0	30.9	0.0	38.0	3.7	38.2	0.0	43.9	8.7	58.4	25.1	47.2	29.2
05/20/01	23.1	0.0	26.2	0.0	32.0	3.3	32.6	0.0	37.2	7.2	50.9	21.9	40.0	24.4
05/21/01	65.8	0.0	67.2	0.0	71.0	5.1	70.1	0.0	76.7	15.0	76.6	32.8	62.4	38.3
05/22/01	69.9	0.0	72.6	0.0	77.7	5.9	81.2	0.0	88.1	16.7	112.3	48.3	107.0	65.5
05/23/01	70.7	0.0	69.6	0.0	73.4	5.6	72.9	0.0	82.6	15.8	94.7	40.7	77.0	47.0
05/24/01	56.9	0.0	64.1	0.0	74.3	5.9	75.6	0.0	87.8	17.5	104.2	44.9	91.2	56.2
05/25/01	53.2	0.0	50.4	0.0	61.9	4.7	65.4	0.0	80.8	15.8	97.7	42.0	83.7	51.1
05/26/01	21.3	0.0	26.9	0.0	37.8	3.2	39.7	0.0	51.1	11.2	69.1	29.8	59.3	36.0
05/27/01	21.7	0.2	27.4	0.0	37.6	3.1	37.2	0.0	47.8	9.7	53.4	23.0	50.0	30.8
05/28/01	29.0	0.1	27.3	0.0	37.8	3.0	37.7	0.0	45.7	9.6	56.4	24.4	49.3	30.1
05/29/01	58.9	0.1	56.9	0.0	67.2	5.2	68.6	0.0	78.6	15.6	91.2	39.1	76.9	47.0
05/30/01	74.9	0.1	73.5	0.0	79.6	6.2	82.0	0.0	89.0	17.5	106.7	45.9	94.7	58.0
05/31/01	74.0	0.1	80.3	0.0	---	---	90.0	0.0	97.3	19.0	112.1	48.4	97.3	60.1

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/18/01	1.4	0.0	15.6	19.2	81.9	0.0	83.1	0.0	91.0	0.0	92.1	0.0
05/19/01	1.4	0.0	15.9	19.4	75.3	0.0	76.8	0.0	83.3	0.0	84.7	9.8
05/20/01	1.5	0.0	13.8	13.8	68.3	0.0	68.8	0.0	72.7	0.0	72.5	0.0
05/21/01	1.4	0.0	12.0	14.1	62.8	0.0	63.4	0.0	66.8	0.0	65.5	0.0
05/22/01	1.4	0.0	13.8	13.8	60.0	0.0	58.7	0.0	61.5	0.0	61.0	0.0
05/23/01	1.4	0.0	12.0	14.1	62.4	0.0	64.6	0.0	67.1	0.0	64.0	0.0
05/24/01	1.4	0.0	11.1	13.1	64.2	0.0	63.3	0.0	67.6	0.0	67.0	0.0
05/25/01	1.4	0.0	11.7	14.4	69.9	0.0	69.8	0.0	72.3	0.0	71.1	0.0
05/26/01	1.4	0.0	11.7	9.0	75.5	0.0	75.4	0.0	78.6	0.0	75.3	0.0
05/27/01	1.4	0.0	11.1	8.8	67.0	0.0	67.5	0.0	70.8	0.0	67.7	0.0
05/28/01	1.4	0.0	11.9	14.1	65.9	0.0	66.8	0.0	70.5	0.0	69.2	0.0
05/29/01	1.5	0.0	11.9	11.3	63.8	0.0	67.0	0.0	71.0	0.0	71.4	0.0
05/30/01	1.7	0.0	11.1	14.0	59.7	0.0	60.2	0.0	62.9	0.0	61.2	0.0
05/31/01	---	---	---	---	54.5	0.0	55.4	0.0	58.7	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		
05/18/01	150.6	0.0	162.4	0.0	161.2	46.5	180.4	49.8	5.8	118.1
05/19/01	128.1	0.0	117.8	0.0	118.0	35.4	138.1	49.6	0.6	81.3
05/20/01	108.9	0.0	120.7	0.0	116.3	34.9	125.8	49.5	0.6	69.1
05/21/01	111.3	0.0	123.7	0.0	128.9	38.2	144.8	49.6	0.5	88.0
05/22/01	144.9	0.0	144.0	0.0	140.3	47.8	142.0	48.8	0.5	86.0
05/23/01	154.7	0.0	161.6	0.0	156.2	53.0	170.1	49.3	2.0	112.2
05/24/01	153.9	0.0	157.7	0.0	154.8	46.6	166.3	35.6	13.6	109.6
05/25/01	155.7	7.5	152.0	12.6	145.3	43.6	159.0	49.7	0.6	102.1
05/26/01	144.1	7.6	134.9	17.8	134.2	40.3	143.7	49.9	0.6	86.5
05/27/01	122.3	7.4	116.0	17.0	116.9	35.9	134.3	49.6	0.6	77.4
05/28/01	116.4	7.6	111.8	15.1	109.3	33.8	121.4	49.8	0.4	64.5
05/29/01	141.0	7.5	153.4	18.5	151.9	45.1	152.4	49.7	0.6	95.5
05/30/01	145.1	7.5	161.8	23.9	156.3	46.8	174.9	49.7	13.7	104.9
05/31/01	153.4	7.5	163.9	19.7	163.6	48.4	171.2	49.5	8.3	106.7

## 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
<b>Lower Granite Dam</b>													
	05/22/01	Yearling Chinook	20	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/22/01	Steelhead	80	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/29/01	Yearling Chinook	31	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/29/01	Steelhead	69	0	0	0.00%	0.00%	0	0	0	0	0	0
<b>Little Goose Dam</b>													
	05/23/01	Yearling Chinook	25	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/23/01	Steelhead	75	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/30/01	Yearling Chinook	38	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/30/01	Steelhead	62	0	0	0.00%	0.00%	0	0	0	0	0	0
<b>McNary Dam</b>													
	05/24/01	Subyearling Chinook	2	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/24/01	Yearling Chinook	88	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/24/01	Steelhead	10	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/31/01	Subyearling Chinook	8	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/31/01	Yearling Chinook	84	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/31/01	Steelhead	8	0	0	0.00%	0.00%	0	0	0	0	0	0
<b>Bonneville Dam</b>													
	05/22/01	Steelhead	5	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/26/01	Yearling Chinook	35	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/26/01	Steelhead	47	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/28/01	Yearling Chinook	41	0	0	0.00%	0.00%	0	0	0	0	0	0
	05/28/01	Steelhead	15	0	0	0.00%	0.00%	0	0	0	0	0	0
<b>Rock Island Dam</b>													
	05/24/01	Yearling Chinook	50	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/24/01	Steelhead	50	2	0	0.00%	0.00%	0	0	0	0	2	1
	05/31/01	Yearling Chinook	33	3	0	0.00%	0.00%	0	0	0	0	3	1
	05/31/01	Steelhead	67	3	0	0.00%	0.00%	0	0	0	0	3	1

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

### Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	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	#	24 h		12 h	#
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/18	108	108	108	23	111	112	113	24	106	107	107	24	105	106	107	24	107	108	108	24
5/19	108	108	109	24	109	111	114	24	106	107	108	24	106	107	107	24	108	108	109	23
5/20	108	109	110	24	110	112	114	24	104	104	105	24	105	106	107	21	108	109	110	23
5/21	108	109	110	24	109	111	113	24	105	105	107	24	104	105	106	24	108	109	110	23
5/22	107	109	111	24	112	114	115	24	107	107	108	24	105	106	106	24	108	109	109	23
5/23	104	105	107	24	111	113	114	24	106	107	108	24	105	106	107	24	108	108	109	23
5/24	104	105	106	24	113	114	116	24	106	106	107	24	105	106	107	24	108	109	109	23
5/25	105	107	108	23	115	116	119	24	106	106	107	24	105	106	107	24	108	108	108	24
5/26	104	105	107	24	115	116	118	24	107	107	107	24	106	107	109	24	109	110	111	23
5/27	104	105	106	24	116	118	119	24	107	107	107	24	106	107	109	24	108	109	109	23
5/28	104	105	106	24	114	117	120	24	106	106	107	24	106	107	108	24	108	108	109	23
5/29	104	105	106	24	114	115	118	24	105	105	105	24	103	103	104	7	106	107	107	23
5/30	103	103	103	10	112	112	113	9	104	104	105	8	---	---	---	0	106	107	108	19
5/31	104	105	106	14	116	116	117	14	106	106	106	15	104	104	105	15	107	108	108	23

### 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	#	24 h		12 h	#
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/18	106	107	108	24	106	106	106	17	108	108	109	17	109	109	110	24	109	109	109	22
5/19	107	107	108	23	106	107	107	19	107	107	108	19	109	109	109	6	108	108	108	6
5/20	107	108	108	23	107	107	108	19	108	108	109	19	---	---	---	0	---	---	---	0
5/21	107	108	109	23	108	108	109	22	109	110	110	22	108	108	109	7	108	108	108	6
5/22	108	108	109	23	109	110	111	24	110	111	112	24	108	109	109	22	108	109	109	21
5/23	108	108	109	23	110	111	113	22	111	112	112	22	111	111	111	11	111	111	111	11
5/24	108	109	109	23	110	110	111	22	111	112	112	22	110	110	111	24	111	111	111	23
5/25	107	108	109	24	109	110	111	23	110	111	111	23	110	111	111	22	111	111	112	21
5/26	107	109	109	23	110	111	112	23	111	111	112	23	112	112	113	24	112	112	113	23
5/27	107	108	109	23	110	110	111	23	110	110	111	23	112	113	113	23	112	113	113	23
5/28	107	108	109	23	108	109	109	22	109	110	110	22	111	111	112	24	111	112	112	24
5/29	106	106	107	23	106	106	107	23	107	107	108	23	108	108	109	23	109	109	110	23
5/30	106	107	110	19	105	106	107	21	107	107	108	21	107	108	108	17	108	109	109	15
5/31	106	107	108	23	107	108	109	21	108	109	110	21	107	107	107	15	108	108	109	15

### 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	#	24 h		12 h	#
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/18	104	104	105	22	115	116	117	22	---	---	---	0	---	---	---	0	---	---	---	0
5/19	103	103	104	6	115	115	118	5	110	110	110	24	110	111	112	24	109	110	111	24
5/20	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
5/21	103	103	103	9	116	116	118	8	109	110	111	24	110	111	112	24	109	110	112	24
5/22	102	102	103	20	116	117	120	17	116	119	122	24	113	114	114	24	113	113	114	24
5/23	103	103	104	13	116	116	117	13	118	119	121	24	114	114	116	24	116	117	121	24
5/24	103	104	104	24	118	118	119	24	117	118	120	24	114	114	116	24	114	115	120	24
5/25	104	104	105	22	117	117	118	21	115	116	118	24	113	114	114	24	113	114	117	24
5/26	105	105	106	24	118	119	121	24	116	116	117	24	113	113	114	24	114	115	117	24
5/27	105	105	106	24	118	119	119	24	115	116	117	24	112	113	113	24	114	115	118	24
5/28	104	104	105	24	116	117	119	24	112	113	114	24	110	111	111	24	110	111	113	24
5/29	102	102	102	24	115	116	117	23	109	109	110	24	110	111	111	24	106	107	108	24
5/30	102	102	102	22	115	116	116	22	---	---	---	0	---	---	---	0	---	---	---	0
5/31	101	102	103	24	116	116	118	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	Priest R. Dnst			Pasco			Dworshak			Clrwtr-Peck			Anatone			#				
	24 h		High	24 h		High	24 h		High	24 h		High	24 h		High					
	Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg						
5/18	---	---	---	0	107	107	108	24	105	106	107	24	---	---	---	0	104	104	105	24
5/19	108	110	111	24	107	108	109	20	106	108	110	24	103	104	105	24	104	104	105	24
5/20	---	---	---	0	106	106	107	24	103	105	106	24	102	103	104	24	103	104	105	24
5/21	110	111	111	24	107	108	109	24	104	106	108	24	103	104	105	24	104	105	106	24
5/22	117	118	119	24	109	110	111	24	105	107	109	24	103	104	105	24	104	105	106	24
5/23	116	117	119	24	112	114	114	24	105	107	108	24	103	104	105	24	104	105	106	24
5/24	116	118	120	24	113	114	114	24	105	106	108	24	103	104	105	24	104	105	106	24
5/25	115	117	119	24	112	113	113	24	104	105	107	24	---	---	---	0	103	104	105	24
5/26	113	115	117	24	114	114	115	24	104	106	107	24	103	105	105	24	104	105	106	24
5/27	112	113	114	24	112	113	113	24	105	106	108	24	103	104	105	24	103	104	105	24
5/28	109	110	111	24	106	107	108	24	104	106	107	24	102	103	104	24	103	104	105	24
5/29	111	113	115	24	103	104	104	24	104	106	107	24	102	103	104	24	103	104	104	24
5/30	---	---	---	0	105	107	109	21	105	107	108	21	102	103	104	21	103	104	105	21
5/31	---	---	---	0	110	112	113	24	105	106	108	24	103	104	105	24	104	105	106	23

### Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwtr-Lewiston			Lower Granite			L. Granite Tlwr			Little Goose			L. Goose Tlwr			#				
	24 h		High	24 h		High	24 h		High	24 h		High	24 h		High					
	Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg						
5/18	102	103	103	24	103	103	104	24	102	102	103	24	100	100	101	24	101	101	101	24
5/19	102	104	105	24	103	103	104	23	103	103	104	24	101	101	101	24	101	101	101	24
5/20	102	103	105	24	103	103	104	24	102	103	103	24	101	101	101	24	101	101	102	24
5/21	102	104	105	24	105	106	107	24	103	103	104	21	103	105	108	24	102	102	103	24
5/22	103	105	107	24	105	106	107	24	104	104	105	20	106	108	112	24	103	104	104	24
5/23	103	105	106	24	106	107	110	24	105	105	105	23	107	108	110	24	104	105	105	24
5/24	102	104	105	23	107	108	109	24	105	105	105	22	105	106	108	24	105	105	105	24
5/25	102	104	105	24	107	108	108	24	105	105	105	22	105	105	106	24	105	105	105	24
5/26	103	104	105	24	106	107	108	24	105	105	105	23	108	110	112	24	106	107	107	24
5/27	102	103	104	24	105	106	108	24	104	105	105	24	108	110	112	24	106	107	107	24
5/28	101	103	104	24	103	104	105	24	105	107	114	24	105	105	106	24	105	105	105	24
5/29	101	103	104	24	101	102	102	24	105	109	119	24	103	103	103	24	103	103	103	24
5/30	102	103	104	21	101	101	102	21	100	100	100	21	102	102	102	21	102	102	102	21
5/31	103	105	106	24	103	104	106	24	100	101	101	24	104	106	109	24	102	103	103	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		High	24 h		High	24 h		High	24 h		High	24 h		High					
	Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg						
5/18	102	102	103	24	101	101	102	24	102	102	104	24	103	104	104	24	106	108	114	24
5/19	102	102	102	24	101	102	102	24	101	102	102	23	106	108	113	23	105	106	109	24
5/20	101	101	102	24	101	101	102	24	101	101	102	24	102	103	103	24	107	110	114	24
5/21	102	102	104	24	101	102	102	24	102	103	105	24	103	103	104	24	110	113	115	24
5/22	104	105	107	24	102	103	104	24	103	105	107	24	104	104	105	24	110	113	116	24
5/23	105	106	107	24	104	104	105	24	103	104	106	24	104	105	106	24	109	111	113	24
5/24	105	106	107	24	104	105	105	24	102	103	104	24	105	105	106	24	112	115	118	24
5/25	106	107	107	24	105	106	106	24	101	102	104	24	105	106	106	24	114	117	120	24
5/26	107	108	109	24	106	107	107	24	103	103	104	14	106	107	108	24	116	119	121	24
5/27	108	108	109	24	107	107	108	24	102	103	104	20	107	108	109	24	113	115	116	24
5/28	106	106	107	24	106	106	107	24	---	---	---	0	107	107	108	24	109	110	110	24
5/29	105	105	106	24	104	104	105	24	104	104	105	7	105	105	106	24	107	109	110	24
5/30	104	104	105	21	103	104	105	21	104	104	106	21	105	105	106	21	107	109	113	21
5/31	106	108	111	24	104	105	106	24	107	109	112	24	106	108	108	24	108	109	110	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	McNary-Wash			McNary-Tlwr			John Day			John Day-Tlwr			The Dalles							
	24h	12h	#	24h	12h	#	24h	12h	#	24h	12h	#	24h	12h	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
5/18	105	106	110	24	104	104	105	24	104	104	105	24	103	103	104	24	103	103	103	24
5/19	106	108	110	24	104	105	105	24	104	104	104	23	103	104	104	24	103	103	104	23
5/20	105	107	111	24	104	105	105	24	105	106	109	23	103	103	103	24	102	102	103	23
5/21	108	109	110	24	106	106	107	24	107	110	112	23	103	104	104	24	103	104	105	23
5/22	111	113	115	24	107	108	109	24	112	114	116	23	104	105	105	24	105	106	106	23
5/23	110	112	114	23	108	109	109	24	111	113	115	23	105	105	105	24	106	106	106	23
5/24	109	110	111	24	108	109	109	24	105	106	108	23	104	104	104	24	105	105	105	23
5/25	111	113	115	24	110	112	115	24	105	106	106	24	106	109	115	24	104	104	104	24
5/26	113	114	117	24	113	114	116	24	107	108	109	23	110	114	115	24	105	106	107	23
5/27	114	115	115	24	113	114	115	24	106	107	107	23	110	114	115	24	106	107	108	23
5/28	110	110	111	24	111	113	115	24	105	105	106	23	109	113	114	24	104	105	105	23
5/29	108	108	109	24	108	110	113	24	103	104	104	23	108	113	115	24	103	103	104	23
5/30	108	108	112	21	109	111	114	21	103	103	103	19	108	112	115	21	104	104	106	19
5/31	110	113	115	24	108	110	114	24	106	108	110	23	109	113	116	24	106	107	109	23

**Total Dissolved Gas Saturation Data at Lower Columbia River Sites**

Date	The Dalles Dnst			Bonneville			Warrendale			Skamania			Camas\Washugal							
	24h	12h	#	24h	12h	#	24h	12h	#	24h	12h	#	24h	12h	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
5/18	110	110	110	24	103	104	106	24	111	112	112	24	106	107	107	24	108	109	110	24
5/19	109	110	110	24	106	106	106	23	113	114	115	23	109	110	110	23	108	110	111	24
5/20	109	109	110	24	105	105	106	19	114	115	116	23	110	111	111	23	110	112	113	24
5/21	110	112	113	24	106	107	108	23	114	115	116	23	109	110	111	23	113	114	115	24
5/22	113	114	115	23	109	109	111	23	114	116	117	23	111	112	112	23	110	111	113	24
5/23	113	114	115	24	112	112	113	23	116	116	117	23	113	114	114	23	114	116	117	24
5/24	112	113	113	24	110	111	112	23	114	115	115	23	112	112	113	23	114	115	116	24
5/25	112	112	112	24	109	109	110	24	115	115	115	24	111	111	112	24	113	115	116	24
5/26	112	113	113	24	109	110	110	23	115	116	117	23	112	112	113	23	113	115	116	24
5/27	112	113	113	24	108	108	109	23	115	115	116	23	111	111	112	23	112	113	114	24
5/28	110	111	112	24	106	106	107	23	114	114	115	23	110	111	111	23	110	110	111	24
5/29	111	112	112	24	104	105	106	23	113	113	115	23	108	108	109	23	110	112	114	24
5/30	111	112	112	20	106	106	108	19	113	113	113	19	108	109	110	19	110	111	113	20
5/31	112	113	114	24	109	110	111	21	115	116	116	21	111	112	113	21	112	114	116	21

## HATCHERY RELEASE SUMMARY LAST TWO WEEKS

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Hatchery Release Summary									
From:	5/18/01				to	5/31/01			
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
IDFG	Magic Valley	ST	SU	2001	75,912	04-09-01	06-04-01	Squaw Cr Acclim Pd	Salmon River
IDFG	Oxbow-Idaho	CH0	FA	2001	107,000	05-25-01	06-01-01	Hells Canyon Dam	Snake River
<b>IDFG Total</b>					<b>182,912</b>				
Nez Perce Tribe	Lyons Ferry	CH0	FA	2001	400,000	05-23-01	06-01-01	Pittsburg Landing	Snake River
Nez Perce Tribe	Lyons Ferry	CH0	FA	2001	500,000	05-23-01	06-22-01	Big Canyon (Clearwater R)	Clearwater Rvr M F
Nez Perce Tribe	Lyons Ferry	CH0	FA	2001	500,000	05-23-01	06-22-01	Cpt John Acclim Pd	Snake River
<b>Nez Perce Tribe Total</b>					<b>1,400,000</b>				
<b>Total</b>									
ODFW	Big Canyon	ST	SU	2001	130,500	05-19-01	06-03-01	Big Canyon Acclim.Pd	Grande Ronde River
ODFW	Wallowa	ST	SU	2001	108,750	05-13-01	05-27-01	Wallowa Acclim Pd	Grande Ronde River
<b>ODFW Total</b>					<b>239,250</b>				
Umatilla Tribe	Umatilla	CH0	FA	2001	2,682,000	05-21-01	05-31-01	Thornhollow Acclim Pd	Umatilla River
<b>Umatilla Tribe Total</b>					<b>2,682,000</b>				
USFWS	Winthrop	ST	SU	2001	99,000	04-11-01	05-20-01	Winthrop H	Methow River
<b>USFWS Total</b>					<b>99,000</b>				
WDFW	Klickitat	CH0	FA	2001	1,600,000	05-21-01	05-25-01	Klickitat H	Klickitat River
WDFW	Klickitat	CH0	FA	2001	2,300,000	05-29-01	06-15-01	Klickitat H	Klickitat River
WDFW	Klickitat	CO	NO	2001	1,300,000	05-01-01	05-21-01	Klickitat H	Klickitat River
WDFW	Lyons Ferry	CH0	FA	2001	200,000	05-25-01	06-01-01	Lyons Ferry H	Snake River
WDFW	Wells	ST	SU	2001	99,490	04-27-01	05-22-01	Chewuch R	Methow River
WDFW	Wells	ST	SU	2001	109,950	04-27-01	05-22-01	Twisp R	Methow River
WDFW	Wells	ST	SU	2001	113,910	04-27-01	05-22-01	Methow R	Methow River
<b>WDFW Total</b>					<b>5,723,350</b>				
Yakima Tribe	Cle Elum	CH1	SP	2001	232,700	03-15-01	05-31-01	Clark Flat Acclim Pd	Yakama River
Yakima Tribe	Cle Elum	CH1	SP	2001	257,700	03-15-01	05-31-01	Jack Creek Acclim Pd	Yakama River
Yakima Tribe	Cle Elum	CH1	SP	2001	266,600	03-15-01	05-31-01	Easton Pd	Yakama River
Yakima Tribe	Cle Elum	CO	UN	2001	94,800	05-31-01	05-31-01	Cle Elem Slough	Yakama River
Yakima Tribe	Easton Pond	CO	UN	2001	115,000	05-31-01	05-31-01	Easton Pd	Yakama River
Yakima Tribe	Lost Creek	CO	UN	2001	115,000	05-31-01	05-31-01	Lost Creek Acclim Pd	Yakama River
Yakima Tribe	Prosser	CH0	FA	2001	15,000	05-25-01	05-25-01	Yakama R	Yakama River
Yakima Tribe	Prosser	CH0	FA	2001	162,000	05-25-01	05-25-01	Prosser Acclim Pd	Yakama River
Yakima Tribe	Prosser	CH0	FA	2001	1,700,000	05-25-01	05-25-01	Prosser Acclim Pd	Yakama River
Yakima Tribe	Stiles Pond	CO	UN	2001	115,000	05-31-01	05-31-01	Naches R	Yakama River
<b>Yakima Tribe Total</b>					<b>3,073,800</b>				
<b>Grand Total</b>					<b>13,400,312</b>				

CH = Chinook, ST = Steelhead, CO = Coho, SO = Sockeye, CT = Cutthroat Trout, CM = Chum

## HATCHERY RELEASE SUMMARY NEXT TWO WEEKS

Hatchery Release Summary										
From:	6/1/01				to	6/14/01				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	
IDFG	Magic Valley	ST	SU	2001	75,912	04-09-01	06-04-01	Squaw Cr Acclim Pd	Salmon River	
IDFG	Oxbow-Idaho	CH0	FA	2001	107,000	05-25-01	06-01-01	Hells Canyon Dam	Snake River	
<b>IDFG Total</b>					<b>182,912</b>					
Nez Perce Tribe	Lyons Ferry	CH0	FA	2001	24,000	06-01-01	07-06-01	Big Canyon (Clearwater R)	Clearwater Rvr M F	
Nez Perce Tribe	Lyons Ferry	CH0	FA	2001	400,000	05-23-01	06-01-01	Pittsburg Landing	Snake River	
Nez Perce Tribe	Lyons Ferry	CH0	FA	2001	500,000	05-23-01	06-22-01	Big Canyon (Clearwater R)	Clearwater Rvr M F	
Nez Perce Tribe	Lyons Ferry	CH0	FA	2001	500,000	05-23-01	06-22-01	Cpt John Acclim Pd	Snake River	
<b>Nez Perce Tribe Total</b>					<b>1,424,000</b>					
NMFS	Lyons Ferry	CH0	FA	2001	7,500	06-01-01	07-06-01	Pittsburg Landing	Snake River	
<b>NMFS Total</b>					<b>7,500</b>					
ODFW	Big Canyon	ST	SU	2001	130,500	05-19-01	06-03-01	Big Canyon Acclim.Pd	Grande Ronde River	
<b>ODFW Total</b>					<b>130,500</b>					
WDFW	Klickitat	CH0	FA	2001	2,300,000	05-29-01	06-15-01	Klickitat H	Klickitat River	
WDFW	Lyons Ferry	CH0	FA	2001	200,000	05-25-01	06-01-01	Lyons Ferry H	Snake River	
WDFW	Priest Rapids	CH0	FA	2001	6,700,000	06-10-01	06-25-01	Priest Rapids H	Mid-Columbia River	
WDFW	Wells	CH0	SU	2001	484,000	06-01-01	06-20-01	Wells H	Mid-Columbia River	
<b>WDFW Total</b>					<b>9,684,000</b>					
<b>Grand Total</b>					<b>11,428,912</b>					

CH = Chinook, ST = Steelhead, CO = Coho, SO = Sockeye, CT = Cutthroat Trout, CM = Chum

## Two-Week Summary of Passage Indices

### COMBINED YEARLING CHINOOK

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/18/2001	12	21	23	1	41,550	35,576	12,169	42	50,173	27,016	19,475
05/19/2001	---	---	---	---	16,500	57,329	16,228	43	57,700	43,500	35,559
05/20/2001	---	---	---	---	16,500	30,677	8,700	15	60,004	20,662	17,166
05/21/2001 *	13	11	7	0	7,800	20,511	5,859	29	57,200	14,760	20,430
05/22/2001	8	8	4	3	6,900	20,421	15,687	130	64,957	12,190	19,401
05/23/2001 *	2	35	3	5	7,070	14,309	5,756	223	67,000	17,505	10,445
05/24/2001	6	36	1	4	4,800	8,935	16,583	278	98,505	13,958	9,302
05/25/2001	8	62	4	2	7,800	10,971	20,103	366	194,288	29,850	10,020
05/26/2001	---	---	---	---	9,150	16,121	7,782	157	160,523	33,680	8,343
05/27/2001	---	---	---	---	25,700	10,572	3,700	112	122,900	11,769	11,509
05/28/2001	3	---	3	33	10,400	5,406	2,876	81	120,524	4,376	13,943
05/29/2001 *	10	19	3	2	6,700	12,691	6,870	87	45,382	5,577	16,870
05/30/2001	12	19	0	4	4,831	15,208	3,930	39	88,743	28,201	27,497
05/31/2001	10	5	2	6	2,450	3,504	3,600	53	82,100	34,611	41,631
06/01/2001	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>84</b>	<b>216</b>	<b>50</b>	<b>60</b>	<b>168,151</b>	<b>262,231</b>	<b>129,843</b>	<b>1,655</b>	<b>1,269,999</b>	<b>297,655</b>	<b>261,591</b>
<b># Days:</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>8</b>	<b>24</b>	<b>5</b>	<b>6</b>	<b>12,011</b>	<b>18,731</b>	<b>9,275</b>	<b>118</b>	<b>90,714</b>	<b>21,261</b>	<b>18,685</b>
<b>YTD</b>	<b>12,638</b>	<b>26,570</b>	<b>9,047</b>	<b>513</b>	<b>1,906,626</b>	<b>716,557</b>	<b>527,514</b>	<b>6,044</b>	<b>1,743,357</b>	<b>583,416</b>	<b>1,282,452</b>

### COMBINED SUBYEARLING CHINOOK

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/18/2001	0	0	0	2	0	0	3	9	2,400	194	9,774
05/19/2001	---	---	---	---	0	0	1	6	3,200	50	7,730
05/20/2001	---	---	---	---	0	0	0	12	2,001	16	5,257
05/21/2001 *	0	0	1	0	0	0	3	13	1,800	40	5,730
05/22/2001	0	0	0	0	0	0	304	3	4,800	90	6,975
05/23/2001 *	0	0	2	1	0	0	9	4	6,300	45	7,681
05/24/2001	0	0	5	0	0	0	405	4	6,000	124	8,268
05/25/2001	0	0	0	1	150	0	301	29	9,502	240	9,294
05/26/2001	---	---	---	---	0	0	1	30	9,936	225	11,322
05/27/2001	---	---	---	---	100	0	100	19	11,800	104	16,606
05/28/2001	0	---	1	0	0	0	300	19	15,314	61	16,911
05/29/2001 *	0	0	0	0	0	0	240	49	19,413	315	12,237
05/30/2001	0	0	0	1	0	0	270	25	38,574	1,225	23,289
05/31/2001	0	0	3	0	0	0	240	21	36,200	977	33,764
06/01/2001	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>5</b>	<b>250</b>	<b>0</b>	<b>2,177</b>	<b>243</b>	<b>167,240</b>	<b>3,706</b>	<b>174,838</b>
<b># Days:</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>18</b>	<b>0</b>	<b>156</b>	<b>17</b>	<b>11,946</b>	<b>265</b>	<b>12,488</b>
<b>YTD</b>	<b>1</b>	<b>1</b>	<b>12</b>	<b>24</b>	<b>420</b>	<b>0</b>	<b>2,417</b>	<b>608</b>	<b>176,400</b>	<b>4,571</b>	<b>770,163</b>

\*The total, #days and average do not include the current day's data. \*See sampling comments. [http://www.fpc.org/current daily/smpcomments.htm](http://www.fpc.org/current%20daily/smpcomments.htm). This means that one or more of the sites on this date had an incomplete or biased sample.

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.

## Two-Week Summary of Passage Indices

### COMBINED COHO

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/18/2001	0	0	0	0	1,650	500	0	705	700	1,520	96,796
05/19/2001	---	---	---	---	1,050	910	0	1,253	1,200	2,300	92,917
05/20/2001	---	---	---	---	1,500	375	0	1,147	1,600	1,266	57,576
05/21/2001 *	0	0	0	0	600	0	0	1,208	1,500	5,030	63,697
05/22/2001	0	0	0	0	750	200	1	2,785	900	3,690	117,289
05/23/2001 *	0	0	0	0	1,500	100	0	5,741	1,400	8,535	82,845
05/24/2001	0	0	0	0	1,350	100	109	6,915	2,200	2,732	104,385
05/25/2001	0	0	0	0	1,500	0	100	7,939	2,000	1,080	114,579
05/26/2001	---	---	---	---	1,500	0	100	3,264	2,121	449	137,354
05/27/2001	---	---	---	---	3,300	0	0	2,140	4,100	383	123,659
05/28/2001	0	---	0	0	2,700	0	0	588	2,878	344	108,033
05/29/2001 *	0	0	0	0	1,900	260	0	405	2,500	371	67,478
05/30/2001	0	0	0	0	450	140	30	588	6,186	735	76,977
05/31/2001	0	0	0	0	950	121	30	546	11,100	230	64,332
06/01/2001	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20,700</b>	<b>2,706</b>	<b>370</b>	<b>35,224</b>	<b>40,385</b>	<b>28,665</b>	<b>1,307,917</b>
<b># Days:</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,479</b>	<b>193</b>	<b>26</b>	<b>2,516</b>	<b>2,885</b>	<b>2,048</b>	<b>93,423</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>25,700</b>	<b>4,845</b>	<b>442</b>	<b>38,335</b>	<b>46,279</b>	<b>36,892</b>	<b>1,793,378</b>

### COMBINED STEELHEAD

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/18/2001	130	481	31	61	211,050	39,280	13,262	174	9,927	2,872	25,267
05/19/2001	---	---	---	---	135,150	80,862	20,245	177	8,400	2,500	21,335
05/20/2001	---	---	---	---	175,050	31,935	9,000	133	2,800	3,622	14,538
05/21/2001 *	76	318	4	173	129,000	23,012	6,103	152	25,800	8,570	12,540
05/22/2001	77	234	2	11	113,250	15,432	11,842	588	59,749	3,900	8,498
05/23/2001 *	78	314	3	41	88,280	10,638	5,251	1,354	44,900	4,080	8,995
05/24/2001	33	235	3	20	35,550	26,941	14,332	1,556	26,311	3,222	14,174
05/25/2001	38	509	5	4	50,100	24,982	6,972	1,635	19,010	1,680	13,433
05/26/2001	---	---	---	---	49,050	16,796	5,948	911	16,312	2,643	11,769
05/27/2001	---	---	---	---	126,400	13,112	7,400	604	13,800	1,619	10,582
05/28/2001	10	---	2	43	71,300	10,050	3,624	325	6,568	1,114	9,715
05/29/2001 *	11	842	5	44	24,600	6,998	3,450	242	2,905	727	6,643
05/30/2001	13	762	1	55	9,219	6,472	3,870	384	7,548	1,662	10,230
05/31/2001	28	250	1	5	7,850	3,396	4,740	646	12,000	1,897	10,080
06/01/2001	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>494</b>	<b>3,945</b>	<b>57</b>	<b>457</b>	<b>1,225,849</b>	<b>309,906</b>	<b>116,039</b>	<b>8,881</b>	<b>256,030</b>	<b>40,108</b>	<b>177,799</b>
<b># Days:</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>49</b>	<b>438</b>	<b>6</b>	<b>46</b>	<b>87,561</b>	<b>22,136</b>	<b>8,289</b>	<b>634</b>	<b>18,288</b>	<b>2,865</b>	<b>12,700</b>
<b>YTD</b>	<b>4,518</b>	<b>33,391</b>	<b>4,357</b>	<b>4,713</b>	<b>5,216,446</b>	<b>712,243</b>	<b>277,836</b>	<b>12,035</b>	<b>430,314</b>	<b>165,780</b>	<b>384,946</b>

## Two-Week Summary of Passage Indices

### COMBINED SOCKEYE

Date	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
05/18/2001	3	0	0	0	150	100	1	3	400	20	0
05/19/2001	---	---	---	---	300	100	0	15	800	150	0
05/20/2001	---	---	---	---	0	0	100	16	700	16	164
05/21/2001 *	3	0	0	0	300	0	102	21	1,200	110	0
05/22/2001	1	0	0	0	450	200	3	162	600	364	160
05/23/2001 *	1	0	0	0	150	0	1	240	700	345	229
05/24/2001	2	0	0	0	0	150	1	603	1,600	300	148
05/25/2001	0	0	0	0	0	150	100	537	2,600	60	290
05/26/2001	---	---	---	---	150	0	0	380	5,023	86	372
05/27/2001	---	---	---	---	200	50	0	301	17,100	400	232
05/28/2001	0	---	0	0	200	50	0	80	15,885	88	90
05/29/2001 *	2	0	0	0	300	100	0	33	10,200	477	175
05/30/2001	1	0	0	0	200	0	0	35	13,722	1,732	435
05/31/2001	2	0	0	0	100	91	0	30	39,400	1,955	901
06/01/2001	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,500</b>	<b>991</b>	<b>308</b>	<b>2,456</b>	<b>109,930</b>	<b>6,103</b>	<b>3,196</b>
<b># Days:</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>179</b>	<b>71</b>	<b>22</b>	<b>175</b>	<b>7,852</b>	<b>436</b>	<b>228</b>
<b>YTD</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,590</b>	<b>9,086</b>	<b>686</b>	<b>2,598</b>	<b>114,819</b>	<b>6,520</b>	<b>3,741</b>

#### 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  
 $\text{Passage Index} = \text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$
- LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts  
 $\text{Passage Index} = \text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$
- LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts  
 $\text{Passage Index} = \text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$
- RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts  
 $\text{Passage Index} = \text{Collection Counts} / \{ \text{Powerhouse 2 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}) \}$
- MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts  
 $\text{Passage Index} = \text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$
- JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts  
 $\text{Passage Index} = \text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$
- BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts  
 $\text{Passage Index} = \text{Collection Counts} / \{ \text{Powerhouse 2 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}) \}$
- BO1 (Index) = Bonneville Dam First Powerhouse Bypass Collection System : Passage Index Counts  
 $\text{Passage Index} = \text{Collection Counts} / \{ \text{Powerhouse 1 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}) \}$

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 05/31**

DAM	Spring Chinook						Summer Chinook						Fall Chinook					
	2001		2000		10-Yr Avg.		2001		2000		10-Yr Avg.		2001		2000		10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	391,367	14,174	178,302	21,259	70,775	4,654	0	0	0	0	0	0	0	0	0	0	0	0
TDA	297,572	9,629	101,430	14,319	40,409	3,103	0	0	0	0	0	0	0	0	0	0	0	0
JDA	252,339	5,738	84,361	11,520	32,612	2,503	0	0	0	0	0	0	0	0	0	0	0	0
MCN	245,754	5,845	61,452	9,919	28,399	2,309	0	0	0	0	0	0	0	0	0	0	0	0
IHR	157,939	2,407	35,619	8,064	14,640	1,370	0	0	0	0	0	0	0	0	0	0	0	0
LMN	163,009	1,322	31,560	8,590	12,745	1,409	0	0	0	0	0	0	0	0	0	0	0	0
LGS	155,387	2,248	30,268	8,276	11,640	1,343	0	0	0	0	0	0	0	0	0	0	0	0
LWG	149,547	1,871	28,571	8,022	10,407	1,204	0	0	0	0	0	0	0	0	0	0	0	0
PRD	48,793	836	18,854	919	8,881	222	0	0	0	0	0	0	0	0	0	0	0	0
RIS	36,954	1,342	13,058	1,099	6,055	202	0	0	0	0	0	0	0	0	0	0	0	0
RRH	13,896	360	4,536	268	1,411	42	0	0	0	0	0	0	0	0	0	0	0	0
WEL	8,999	425	1,541	218	563	30	0	0	0	0	0	0	0	0	0	0	0	0

DAM	Coho						Sockeye			Steelhead			
	2001		2000		10-Yr Avg.		10-Yr			10-Yr			Wild
	Adult	Jack	Adult	Jack	Adult	Jack	2001	2000	Avg.	2001	2000	Avg.	2001
BON	0	0	0	0	0	0	32	140	18	6,196	3,876	4,352	1,367
TDA	0	0	0	0	0	0	11	69	9	1,370	810	1,472	395
JDA	0	1	2	0	0	0	7	15	2	2,466	3,391	3,119	950
MCN	0	0	0	0	0	0	6	4	1	1,822	826	2,031	768
IHR	0	0	0	0	0	0	0	0	0	1,472	896	2,172	676
LMN	0	0	0	0	0	0	3	0	0	1,728	911	2,160	877
LGS	0	0	0	0	0	0	1	0	0	1,998	953	1,226	1,020
LWG	0	0	0	0	0	0	0	0	0	5,760	2,479	4,846	1,658
PRD	0	0	0	0	0	0	51	149	38	25	14	53	**
RIS	0	0	1	0	0	0	5	9	2	72	22	80	**
RRH	0	0	4	0	0	0	0	1	0	121	81	70	**
WEL	0	0	0	0	0	0	0	0	0	30	23	24	20

WEL is through 5/30 and the numbers are from Douglas CO PUD. RIS and RRH are through 5/30 and the numbers are from Chelan CO PUD's website. PRD is through 5/31 and the numbers are from Grant CO PUD's website. LGR is missing 5/30. IHR has identical counts for 5/27 & 5/28.

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

Wild steelhead numbers are included in the total.

\*\*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

		05/19/01 TO 06/01/01					
		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	250	168,151	20,700	2,500	1,225,849	1,417,450
	Sum of NumberBarged	250	167,546	20,692	2,499	1,219,638	1,410,625
	Sum of NumberBypassed	0	313	0	0	5,821	6,134
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of TotalProjectMortalities	0	219	8	1	389	617
<b>LGS</b>	Sum of NumberCollected		262,231	2,706	991	309,906	575,834
	Sum of NumberBarged		260,991	2,691	984	307,480	572,146
	Sum of NumberBypassed		0	0	0	0	0
	Sum of Numbertrucked		0	0	0	0	0
	Sum of TotalProjectMortalities		1,240	15	7	2,426	3,688
<b>LMN</b>	Sum of NumberCollected	2,177	129,843	370	308	116,039	248,737
	Sum of NumberBarged	2,177	122,693	370	408	115,164	240,812
	Sum of NumberBypassed	0	6,899	0	0	77	6,976
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of TotalProjectMortalities	0	251	0	0	798	1,049
<b>MCN</b>	Sum of NumberCollected	159,922	1,227,628	39,101	105,802	252,633	1,785,086
	Sum of NumberBarged	87,079	616,440	23,258	71,527	126,421	924,725
	Sum of NumberBypassed	72,451	608,172	15,794	34,191	123,996	854,604
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of TotalProjectMortalities	392	3,016	49	84	2,216	5,757
Total Sum of NumberCollected		162,349	1,787,853	62,877	109,601	1,904,427	4,027,107
Total Sum of NumberBarged		89,506	1,167,670	47,011	75,418	1,768,703	3,148,308
Total Sum of NumberBypassed		72,451	615,384	15,794	34,191	129,894	867,714
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of TotalProjectMortalities		392	4,726	72	92	5,829	11,111



**YTD Transportation Summary**

**TO: 06/01/01**

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	420	1,906,626	25,700	3,590	5,216,446	7,152,782
	Sum of NumberBarged	420	1,816,845	24,684	3,191	4,948,815	6,793,955
	Sum of NumberBypassed	0	79,040	976	221	263,233	343,470
	Sum of NumberTrucked	0	6,433	30	167	3,386	10,016
	Sum of TotalProjectMortalities	0	4,235	10	11	1,011	5,267
<b>LGS</b>	Sum of NumberCollected		718,616	4,865	9,088	713,604	1,446,173
	Sum of NumberBarged		714,833	4,836	9,038	710,174	1,438,881
	Sum of NumberBypassed		0	0	0	0	0
	Sum of NumberTrucked		898	0	28	336	1,262
	Sum of TotalProjectMortalities		2,885	29	22	3,094	6,030
<b>LMN</b>	Sum of NumberCollected	2,417	527,514	442	686	277,836	808,895
	Sum of NumberBarged	2,416	504,489	442	783	275,998	784,128
	Sum of NumberBypassed	0	16,415	0	0	285	16,700
	Sum of NumberTrucked	0	5,519	0	0	319	5,838
	Sum of TotalProjectMortalities	1	1,091	0	3	1,234	2,329
<b>MCN</b>	Sum of NumberCollected	169,094	1,701,063	44,998	110,693	427,011	2,452,859
	Sum of NumberBarged	90,253	786,193	25,832	73,290	173,607	1,149,175
	Sum of NumberBypassed	78,401	910,923	19,108	37,312	250,991	1,296,735
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of TotalProjectMortalities	440	3,947	58	91	2,413	6,949
Total Sum of NumberCollected		171,931	4,853,819	76,005	124,057	6,634,897	11,860,709
Total Sum of NumberBarged		93,089	3,822,360	55,794	86,302	6,108,594	10,166,139
Total Sum of NumberBypassed		78,401	1,006,378	20,084	37,533	514,509	1,656,905
Total Sum of NumberTrucked		0	12,850	30	195	4,041	17,116
Total Sum of TotalProjectMortalities		441	12,158	97	127	7,752	20,575