



*Fish Passage Center*

# Weekly Report #04 - 8

April 30, 2004

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**Highlights:**

- Testing of new VBS's at McNary Dam with turbine operation outside the 1% criteria was halted on April 29 when fish in the sample and on the separator showed unusually high levels of injury and mortality. SMP crews reported fish 50% descaled on both sides and 95% of the fish having injured opercula. Many fish appeared moribund in the sample and an estimated 100 yearling chinook mortalities were found on the separator.
- Spring fish migration flow targets are not being met. Flows are presently averaging only 48.6 kcfs at Lower Granite and 162.7 at McNary Dam.
- Water supply forecasts have continued to decrease relative to the April final forecast.
- Spill was terminated on April 23 at 0600 hrs at Lower Granite and Little Goose dams contrary to salmon managers recommendations.

**Summary of Events:**

**Water Supply:** Precipitation throughout the Columbia Basin was very low over most of March and April. Only the Flathead region (Table 1) received greater than average precipitation over the first twenty-six days of April. Over the entire water year, precipitation has been decreasing and is currently below average.

**Table 1. Summary of April precipitation and cumulative October through April precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.**

Location	Water Year 2004		Water Year 2004 October 1, 2003 to April 26, 2004	
	April 1-26		Observed (inches)	% Average
	Observed (inches)	% Average		
Columbia Above Coulee	0.97	68	14.31	91
Snake River Above Ice Harbor	0.95	75	9.97	86
Columbia Above The Dalles	0.96	67	14.37	91
Kootenai	0.80	53	14.66	91
Clark Fork	0.79	73	8.19	81
Flathead	1.54	113	12.27	91
Pend Oreille/Spokane	1.11	57	19.5	88
Central Washington	0.39	70	5.61	87
Snake River Plain	0.75	83	5.55	79
Salmon/Boise/Payette	0.70	51	11.48	81
Clearwater	1.53	66	19.59	94
SW Washington Cascades/Cowlitz	2.17	47	50.49	87
Willamette Valley	3.02	72	45.74	92

Snowpack within the Columbia Basin is below average and continues to decrease. Average snowpack in the Columbia River for basins above the Snake River confluence is 62 of average (6% decrease from last week), for Snake River Basins the average snowpack is 58% of average (7% decrease from last week), and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 73% of average (9% decrease from last week).

Water Supply Forecasts have been decreasing rapidly over the last month. Most locations in Table 2 had significantly decreased runoff volumes in the April Final Forecast relative to the March Final forecast. At most locations, the May Early water supply forecasts have continued to decrease relative to the April Final Forecast.

**Table 2. April Final and April Mid-Month Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.**

Location	April Final		May Early	
	% Average (1971-2000)	Probable Runoff Volume (Kaf)	% Average (1971-2000)	Probable Runoff Volume (Kaf)
The Dalles (Jan-July)	78	84200	76	81600
Grand Coulee (Jan-July)	85	53600	83	52500
Libby Res. Inflow, MT (Jan-July)	84	5290	81	5110
Hungry Horse Res. Inflow, MT (Jan-July)	76	1680	75	1660
Lower Granite Res. Inflow (Apr- July)	72	15600	66	14300
Brownlee Res. Inflow (Apr-July)	50	3130	45	2820
Dworshak Res. Inflow (Apr-July)	81	2150	76	2130

The Spring Flow Objective period started in the Lower Snake River on April 3rd, 2004. Based on the April Final Forecast at Lower Granite (Apr-July), the flow objective will be 85 Kcfs at Lower Granite through June 20th. Over the spring flow objective period thus far, flows have averaged 48.6 Kcfs at Lower Granite.

The Spring Flow Objective Periods at McNary Dam and Priest Rapids Dam began on April 10th. The flow objectives at McNary and Priest Rapids will be 220 Kcfs and 135 Kcfs, respectively. Over the spring flow objective period thus far, flows have averaged 162.71 Kcfs at McNary Dam and 103.6 Kcfs at Priest Rapids Dam.

Grand Coulee is currently at an elevation of 1268.9 feet (4-28-04) and has drafted approximately two feet over the last week. Grand Coulee did not meet the April 10 reservoir elevation required in the Biological Opinion.

The Libby Reservoir is currently at an elevation of 2408.9 feet (4-28-04). Inflows to Libby over the last week have ranged between 9.1 and 15.3 Kcfs; Libby has been able to refill 2.4 feet in the last week while still maintaining minimum project outflow of 4.0 Kcfs. Libby Reservoir did not meet the April 10 reservoir elevation required in the Biological Opinion.

The Hungry Horse Reservoir is currently at an elevation of 3531.8 feet (4-28-04). Over the last week, inflows to Hungry Horse have ranged between 3.2 and 11.8 Kcfs, enabling Hungry Horse to refill 3.6 feet while still meeting its project minimum flows (0.9 Kcfs). Hungry Horse Reservoir did not meet the April 10 reservoir elevation required in the Biological Opinion.

The Dworshak reservoir is currently at an elevation of 1558.5 feet (4-28-04). Inflows to Dworshak have remained relatively high over the past week ranging between 7.9 and 11.7 Kcfs. Outflows have increased to a current day average of 6.6 Kcfs on weekdays and 5.1 Kcfs on weekends. Dworshak has refilled 2.8 feet in the last week.

The Brownlee Reservoir is currently at an elevation of 2069.3 feet (4-28-04). Inflows to Brownlee have ranged between 11.3 and 12.8 Kcfs, enabling it to refill 2.8 feet in the last week.

**Spill:** Spill at Lower Granite and Little Goose dams was terminated at 0600 hours on April 23, 2004. Earlier discussions of spill in the Snake River in 2004 had led to a decision by the Corps on April 19 that stated: "Based on the discussions at IT, the Corps has decided to provide spill at Lower Granite and Little Goose until 23 April to provide inriver passage for yearling Chinook prior to the steelhead juvenile migration." The Salmon Managers reassessed the Corps decision to terminate spill based on real time fish passage data that showed that steelhead did not predominate in the Snake River on April 23. The state, tribal and USFWS Salmon Managers submitted a System Operational Request (SOR 2004-6) for spill to be continued at Lower Granite and Little Goose dams until the steelhead predominated at Lower Granite Dam for three consecutive days. The Corps response to the SOR was that the earlier decision would not be reconsidered, regardless of fish passage, because it also considered economic needs.

Spill at Lower Monumental Dam began on April 24 and will occur nightly from 1800 hours to 0600 hours for 6 days. Spill will then occur for 15 days following this for the conduct of the salvaged study design. Spill at Ice Harbor Dam was initiated on the evening of April 13th. Spill has averaged 79% of average daily flow over the past week.

The Biological Opinion spill program started at the lower Columbia River Projects on the evening of April 12, 2004. Over the past week spill averaged 28%, 29%, 39% and 47% of daily flow at McNary, John Day, The Dalles and Bonneville dams, respectively.

Total dissolved gas levels remain below the waiver limits. Gas bubble trauma monitoring is occurring at all sites. However, due to the termination of spill at Lower Granite and Little Goose dams the Snake River sampling will end this week. Only two fish (at Rock Island Dam) with signs of GBT and one fish at Bonneville Dam have been observed this past week.

**Smolt Monitoring:** Yearling chinook continued to predominate the juvenile migration this past week at all sites, steelhead numbers are still increasing at the Snake River projects as are coho smolt numbers at Bonneville Dam.

At Snake River Basin traps yearling chinook numbers dropped at White Bird, Imnaha and Grande Ronde traps but remained steady at Lewiston Trap. Steelhead numbers were down at all but the White Bird Trap, where the daily average was 111 this week for steelhead compared to 52 last week. The White Bird Trap collected fewer yearling chinook with the average daily index at 222 this week compared to 509 last week. The collection of yearling chinook was down at the Imnaha Trap where the average daily catch for this week was 380 compared to over 1,325 per day last week. Steelhead collection continued to drop this past week with daily collection averaging about 300 per day this week compared to 330 per day last week. Numbers of yearling chinook captured at the Grande Ronde trap declined compared to the previous week with a daily average of just over 130 compared to 330 last week. Steelhead numbers remained low. At the Lewiston Trap the numbers of yearling chinook remained low this past week with an average daily catch of 39, while steelhead collection decreased to 50 per day average this week compared to 150 per day average last week.

At Lower Granite Dam the numbers of yearling chinook and steelhead continued to increase over the past week despite a decrease in steelhead indices in the past few days. The average weekly passage index for yearling chinook increased this past week to 131,000 compared to 61,000 last week, with a season high 268,000 on April 29. The steelhead average daily passage index also increased from 23,000 last week to 92,000 this week. Coho indices were in the hundreds this past week and small numbers of subyearling chinook were also captured. Little Goose Dam showed large increases over the past week with the average daily index of yearling chinook at 104,000 this week compared to 25,000 last week while steelhead averaged 42,000 per day this week compared to 8,000 per day last

week. Lower Monumental Dam had a decrease in the yearling chinook indices with a high of 151,000 on April 16 included in last weeks average making it 55,000 compared to 28,000 per day this week. Steelhead indices have continued to increase at the site with an average index of 6,000 this past week compared to 4,000 per day the week past.

In the Mid-Columbia River the Entiat Trap continues to capture small numbers of yearling chinook, subyearling chinook and steelhead.

At Rock Island Dam the numbers of yearling chinook remained relatively steady with an average yearling chinook index of 306 this week compared to 375 last week, while steelhead averaged 67 per day compared to 48 last week, and sockeye averaged 150 per day this week compared to 250 per day last week. Subyearling chinook numbers declined as the number of fry decreases from 19 per day last week to 6 per day this week. Small numbers of coho continue to be captured at the trap.

In the Lower Columbia, at McNary, yearling chinook indices have steadily increased to 34,000 per day this week compared to 9,000 last week, while steelhead indices averaged 3,700 per day compared to 2,000 per day last week. Subyearling chinook, sockeye and coho indices remain relatively low but sockeye indices increased rapidly over that past three sample dates, with a season high index of 1,500 on April 29. Smolt Monitoring crews found unusual amounts of injury and mortality to yearling chinook sampled on the 29th. Fish showed 50% descaling as well as 95% having damage to their opercula as well as a 100 mortalities on the separator. Many fish coming into the sample were reported as moribund. Testing of the high velocity vertical barrier screens was being conducted and it is likely that the unusual pattern of injury and mortality was related to those tests. The testing (i.e. operation outside the 1% criteria) has been discontinued while crews try to determine the cause of the fish injury and mortality.

At John Day Dam the numbers of yearling chinook have remained steady with the average daily index at 5,700 this week, compared to 6,000 last week. Steelhead indices increased steadily over the past week with the average daily value at

1,500 compared to 750 last week. Small numbers of coho, sockeye, and subyearling chinook smolts have been reported this past week. At Bonneville Dam, the average daily index for yearling chinook was 32,000 compared to 43,000 last week. The steelhead index averaged 1,400 this week compared to 900 last week. The indices for coho continued to increase this week with an average index of 23,000 per day versus 14,000 per day last week. Subyearling chinook numbers were down to 1,600 per day index this week compared to 70,000 last week as the latest release from Spring Creek hatchery peaked on April 16 when the index stood at 286,000.

**Hatchery Releases** - The scheduled release of juvenile salmonids from Columbia River Basin hatcheries above Bonneville Dam for the 2004 migration season is estimated near 82.0 million. Supplemental and planned releases completed during the fall 2003 season are considered to be 2004 migrants. The Zone Release Report below summarizes "planned" hatchery releases from State, federal or Tribal hatcheries or acclimation ponds for the 2004 Migration Season. These totals will be updated after release from the hatcheries and finalized through the year.

Juvenile sockeye were released from net pens into Lake Wenatchee last summer and fall (2003); the majority of these fish reside in the lake and migrate from the lake and to the ocean the next spring (2004). In the Snake River basin, juvenile sockeye were released in Redfish, Alturas, and Pettit lakes last fall and most begin their migration in late April and May from the lakes.

Hatcheries in the Snake and Columbia basin released greater than 18.5 million salmon during the past two weeks. Fish were released in all of the River Zones with most of the yearling spring, summer, and fall chinook already planted in the Columbia River basin. For the upcoming two weeks, about 13.1 million fish will be released from hatcheries in the basin. See the Hatchery Release Summary Tables for details of individual release groups.

## 2004 Hatchery Zone Report

Race/Species	Friday 30-April-2004			
	Snake River	Mid-Columbia	Lower Columbia	Total Release
Fall Chinook	2,606,355	12,430,000	21,758,540	36,794,895
Spring Chinook	10,469,406	4,015,312	5,186,534	19,671,252
Summer Chinook	2,402,002	3,235,990		5,637,992
Coho	1,199,433	1,240,000	5,924,000	8,363,433
Sockeye	62,000	315,790		377,790
Summer Steelhead	9,288,579	1,302,231	476,330	11,067,140
Winter Steelhead			90,000	90,000
Total	26,027,775	22,539,323	33,435,404	82,002,502

**Snake River** - Release of yearling chinook from hatcheries in the Snake River basin is basically completed for the 2004 migration season. About 12.8 million yearling spring/summer chinook and another 1-million yearling fall chinook were released for this year's migration.

Juvenile steelhead releases were on-going from most hatcheries this week with trucking of steelhead from the Niagara Springs, Hagerman, and Magic Valley being released in the Salmon River basin. Most juvenile steelhead releases are nearing completion in the Clearwater River basin with the major releases from Dworshak NFH and Clearwater H completed during the past two weeks. The Grande Ronde, Imnaha, and Tucannon River basins will have direct and volitional releases that will be completed during the next two weeks.

**Mid-Columbia** - Volitional releases of yearling spring chinook commenced mid-March in the Yakama River at Clark Flat, Easton, and Jack Creek ponds with greater than 90% of these fish having emigrated from the ponds. Releases of upper Mid-Columbia spring chinook are in-river with steelhead releases either ongoing or completed (Wenatchee R) during the past week. The large yearling summer chinook releases from Dryden, Similkameen, and Carlton ponds as well as Wells H should be in-river.

**Lower Columbia** - Yearling fall and spring chinook and coho salmon were released from acclimation

ponds located in the Umatilla River basin in March and April. Yearling spring chinook have been released from Round Butte H, Warm Springs NFH, Klickitat H, Carson and Little White Salmon NFHs. The volitional release from Warm Springs and the Hood River Acclimation Ponds will continue until most have migrated from the pond/raceway system. About 2.5 million yearling coho from Washougal H were trucked and released by the first week of April with the on-site volitional release of coho from Klickitat H. to begin in May. Juvenile steelhead releases will be on-going from mid-April through early May.

**Adult Fish Passage:** At Bonneville Dam, counts of spring chinook ranged from near 9,000 per day early in the week to a low of 1,076 per day through the report week, April 29. The adult spring chinook count through April 29 was 102,943, and that compares to 134,568 in 2003 and 82,282 for the 10-year average. This week, numbers of spring chinook dropped to lower levels that may result in far fewer adult fish than estimated for the 2004 season. As noted in last week's report, few 5-year old chinook have been present in the run this season with the bulk of the chinook being 4-year old fish.

Of the spring chinook past Bonneville Dam, approximately 70% have been counted at The Dalles Dam with greater than 48,500 passing McNary Dam through April 29. Most chinook past McNary Dam are choosing the Snake River; about 33,000 counted at Ice Harbor Dam with only 2,300 counted at Priest Rapids Dam (Mid-upper Columbia River).

PIT tagged hatchery adult fish have been tallied from Rapid River, Dworshak Complex, Clearwater Complex, and Grande Ronde River Acclimation Ponds in the Snake River; Leavenworth, Entiat, Winthrop, and the three Yakima R acclimation ponds located in the Mid/upper Columbia River; and Carson, Warm Springs, and 2 Umatilla R. sites in the lower Columbia River. Note that not all hatcheries released PIT tagged fish so that would preclude them from having these fish among the PIT tag returns. Wild adult spring chinook have been from the Snake, Umatilla, John

Day, Walla Walla, and Yakima River basins to date. As a point of interest for the week, 6 PIT tagged summer chinook from McCall Hatchery have been detected at Bonneville Dam to date.

Passage of adult steelhead is beginning to wind down in the Snake River with 7,438 steelhead counted at Lower Granite Dam since March 1st. This total is well below the 2003 count, but exceeds the 10-year average to date. Note that adult steelhead presently passing Bonneville Dam should be considered as Skamania stock summer run or Wild/hatchery winter run steelhead from tributaries located in the Bonneville pool.

**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
04/16/04	98.0	0.0	106.2	0.0	103.6	11.1	99.4	0.0	105.9	0.0	106.5	0.0	103.7	0.0
04/17/04	86.6	0.0	85.0	0.0	89.1	10.5	87.4	0.0	95.8	17.0	95.7	0.0	93.1	0.0
04/18/04	72.3	0.0	72.9	0.0	82.4	10.1	79.6	0.0	85.7	13.6	94.7	0.0	97.3	0.0
04/19/04	127.1	0.0	120.5	0.0	125.9	12.4	124.3	0.0	129.9	24.6	128.6	9.9	124.9	16.1
04/20/04	116.8	0.0	117.3	0.0	130.9	12.4	129.2	0.0	136.3	23.3	157.5	62.7	149.1	92.2
04/21/04	96.4	0.0	105.3	0.0	116.4	12.2	120.7	0.0	126.6	24.8	135.9	54.6	128.3	78.9
04/22/04	98.9	0.0	93.8	0.0	99.1	11.2	94.5	0.0	101.4	23.5	120.8	48.3	104.7	64.9
04/23/04	96.1	0.0	95.1	0.0	101.8	11.5	101.3	0.0	107.7	26.1	115.3	46.2	106.0	65.9
04/24/04	91.0	0.0	92.6	0.0	99.4	11.3	97.1	0.0	103.7	21.6	111.8	44.8	106.6	66.1
04/25/04	77.0	0.0	81.2	0.0	92.9	10.5	98.0	0.0	105.6	18.7	109.5	27.4	105.8	65.5
04/26/04	117.3	0.0	113.4	0.0	119.4	11.8	111.9	0.0	118.1	25.7	106.3	20.0	102.7	63.7
04/27/04	109.7	0.0	107.7	0.0	115.2	11.6	112.1	0.0	119.5	27.5	119.4	20.1	114.8	70.9
04/28/04	84.8	0.0	91.1	0.0	101.2	11.1	104.5	0.0	113.3	26.0	121.0	20.2	126.6	78.7
04/29/04	83.2	0.0	88.0	0.0	98.9	11.0	98.2	0.0	106.2	21.8	116.5	19.3	117.7	73.0

**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
04/16/04	6.1	0.0	11.8	8.9	56.6	18.3	57.2	20.6	59.4	0.0	61.1	53.4
04/17/04	7.5	0.0	12.9	8.9	50.9	18.3	51.1	19.0	50.6	0.0	51.2	40.7
04/18/04	7.4	0.0	11.3	8.8	49.6	18.3	51.4	20.1	53.4	0.0	56.3	44.8
04/19/04	7.3	0.0	11.4	8.9	46.8	18.3	48.4	18.3	49.4	0.0	53.3	44.8
04/20/04	6.7	0.0	11.9	8.9	45.2	18.4	45.8	16.9	46.2	0.0	48.2	39.1
04/21/04	6.7	0.0	11.9	8.8	43.8	18.5	45.3	15.0	46.2	0.0	48.0	38.7
04/22/04	6.7	0.0	12.8	8.9	42.4	18.6	44.7	15.6	46.3	0.0	49.4	39.8
04/23/04	6.6	0.0	12.8	8.9	42.1	4.6	42.6	7.4	42.0	0.0	41.6	32.7
04/24/04	5.2	0.0	12.3	8.9	40.1	0.0	40.0	0.0	42.3	4.5	44.2	33.6
04/25/04	5.1	0.0	11.5	8.8	41.5	0.0	41.7	0.0	45.3	11.6	49.0	38.9
04/26/04	6.6	0.0	12.7	8.8	41.8	0.0	41.9	0.0	42.9	10.2	48.5	35.0
04/27/04	6.6	0.0	11.7	10.5	45.6	0.0	44.6	0.0	46.5	8.0	47.5	38.7
04/28/04	6.6	0.0	12.6	10.2	54.6	0.0	53.4	0.0	55.1	10.9	56.6	48.3
04/29/04	6.6	0.0	---	---	54.1	0.0	54.4	0.0	56.9	13.8	60.3	47.9

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
04/16/04	189.1	64.5	192.0	47.8	191.5	74.8	215.7	62.6	29.3	112.4
04/17/04	165.0	37.1	183.1	53.0	184.8	73.1	216.0	75.8	20.7	108.2
04/18/04	159.3	41.9	141.5	33.9	144.2	55.6	177.7	75.7	2.0	88.7
04/19/04	166.9	55.8	166.9	44.2	166.6	62.8	198.1	75.1	10.9	100.7
04/20/04	198.7	66.2	173.7	42.7	178.4	70.8	194.4	74.9	7.9	100.2
04/21/04	196.1	67.9	204.9	47.8	209.4	83.7	236.8	85.6	34.5	105.3
04/22/04	171.6	55.9	175.1	46.7	170.0	67.0	210.8	93.9	7.3	98.2
04/23/04	154.1	45.7	158.0	45.0	169.2	65.2	184.5	94.1	0.0	79.0
04/24/04	155.0	39.1	158.5	45.2	160.4	61.5	189.3	94.0	0.0	83.9
04/25/04	153.1	33.4	156.5	43.3	162.6	64.5	196.8	89.3	0.7	95.5
04/26/04	154.1	37.3	154.1	45.2	151.8	59.8	188.2	85.5	4.2	86.7
04/27/04	169.7	53.2	129.7	32.0	132.2	51.4	189.3	87.9	5.1	84.8
04/28/04	179.3	55.5	194.3	55.6	196.5	77.1	191.4	88.6	8.8	82.6
04/29/04	201.8	58.0	169.0	54.6	169.0	66.3	195.6	89.8	8.1	85.8

## HATCHERY RELEASE LAST TWO WEEKS

### Hatchery Release Summary

From: 4/16/2004 to 4/29/2004

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite
Colville Tribe	Wells Hatchery	ST	SU	2004	9,000	04-26-04	04-30-04	Omak Creek
<b>Colville Tribe Total</b>					<b>9,000</b>			
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2004	102,000	04-22-04	04-23-04	Clear Creek
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2004	255,000	04-16-04	04-26-04	Red River Acclim Pond
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2004	255,000	04-21-04	04-23-04	Crooked R Acclim Pond
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2004	315,000	04-20-04	04-21-04	Redhouse (SFk ClearH2O R)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	29,000	04-05-04	05-07-04	Valley Creek
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	33,500	04-05-04	05-07-04	Lemhi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	50,000	04-05-04	05-07-04	East Fk Salmon River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	82,000	04-05-04	05-07-04	Lemhi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	180,000	04-05-04	05-07-04	Yankee Fk (Salmon R)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	180,000	04-19-04	05-07-04	McNabb/Salmon River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	190,000	04-05-04	05-07-04	Squaw Cr Acclim Pond
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	204,000	04-05-04	05-07-04	East Fk Salmon River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	228,000	04-13-04	04-20-04	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2004	445,000	04-02-04	05-04-04	Little Salmon River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2004	830,000	04-13-04	05-01-04	Pahsimeroi River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2004	2,762,058	03-15-04	04-23-04	Rapid River Hatchery
<b>Idaho Dept. of Fish and Game Total</b>					<b>6,140,558</b>			
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2004	25,500	04-27-04	04-27-04	Meadow Creek - CLES
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2004	25,500	04-27-04	04-27-04	Mill Cr Bridge
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2004	51,000	04-27-04	04-28-04	Lolo Creek
Nez Perce Tribe	Dworshak NFH	ST	SU	2004	100,000	04-19-04	04-23-04	American River
Nez Perce Tribe	Dworshak NFH	ST	SU	2004	100,000	04-19-04	04-23-04	Newsome Creek
Nez Perce Tribe	Irrigon Hatchery Complex	ST	SU	2004	100,000	04-13-04	04-16-04	Big Sheep Creek
<b>Nez Perce Tribe Total</b>					<b>402,000</b>			
Oregon Dept. of Fish and Wildlife	Cascade Hatchery	CO	UN	2004	562,500	04-07-04	04-23-04	Umatilla River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2004	80,000	04-29-04	05-06-04	L Sheep Acclim Pond
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>642,500</b>			
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2004	200,000	04-12-04	04-16-04	Clear Creek
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2004	200,000	04-12-04	04-16-04	Redhouse (SFk ClearH2O R)
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2004	1,200,000	04-19-04	04-23-04	Dworshak Hatchery
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2004	105,000	04-26-04	05-11-04	East Fk Salmon River
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2004	772,000	04-16-04	05-07-04	Sawtooth Hatchery
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2004	1,450,000	04-19-04	04-19-04	Leavenworth Hatchery
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2004	444,000	03-24-04	04-21-04	Warm Springs Hatchery
U.S. Fish and Wildlife Service	Winthrop NFH	CO	UN	2004	305,000	04-20-04	04-29-04	Winthrop Hatchery
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2004	117,000	04-15-04	04-28-04	Winthrop Hatchery
<b>U.S. Fish and Wildlife Service Total</b>					<b>4,793,000</b>			

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



## HATCHERY RELEASE LAST TWO WEEKS Continued

### Hatchery Release Summary

From:		4/16/2004		to		4/29/2004			
Umatilla Tribe	Umatilla Hatchery	ST	SU	2004	45,200	04-19-04	04-30-04	Bonifer Acclim Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	ST	SU	2004	45,200	04-19-04	04-30-04	Minthorn Acclimation Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	ST	SU	2004	45,200	04-19-04	04-30-04	Pendelton Acclim Pond	Umatilla River
<b>Umatilla Tribe Total</b>					<b>135,600</b>				
Warm Springs Tribe	Oak Springs Hatchery	ST	SU	2004	40,000	04-09-04	05-06-04	Blackberry Acclim Pond	Hood River
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2004	25,000	04-08-04	05-07-04	Parkdale Acclim Pond	Hood River
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2004	25,000	04-12-04	05-07-04	E Fk Irrig Dist Sand Trap	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2004	22,500	04-07-04	05-03-04	Jones Creek Acclim Pond	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2004	22,500	04-07-04	05-05-04	Blackberry Acclim Pond	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2004	30,000	04-02-04	04-30-04	Parkdale Acclim Pond	Hood River
<b>Warm Springs Tribe Total</b>					<b>165,000</b>				
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2004	2,600	04-19-04	04-30-04	White River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2004	9,000	04-19-04	04-30-04	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2004	150,179	04-15-04	05-07-04	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2004	195,000	04-26-04	04-26-04	Turtle Rock Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2004	860,000	04-19-04	05-03-04	Dryden Acclim Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2004	192,000	04-19-04	05-14-04	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	SP	2004	45,000	03-15-04	04-18-04	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	SP	2004	125,000	03-15-04	04-18-04	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2004	60,000	04-19-04	04-19-04	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2004	85,000	04-01-04	04-30-04	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2004	160,000	04-01-04	04-30-04	Cottonwood Acclim Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2004	62,000	04-12-04	04-30-04	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2004	186,000	04-12-04	04-30-04	Methow Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2004	254,000	04-12-04	04-30-04	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2004	312,000	04-19-04	05-07-04	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2004	161,147	04-12-04	04-20-04	Ringold Springs Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2004	20,000	04-15-04	04-30-04	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2004	65,000	04-19-04	04-30-04	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2004	121,000	04-19-04	04-30-04	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2004	249,000	04-19-04	04-30-04	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2004	340,917	04-15-04	04-30-04	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	45,000	04-15-04	05-07-04	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	55,000	04-19-04	05-14-04	Okanogan River	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	76,042	04-15-04	04-30-04	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	76,042	04-15-04	05-14-04	Methow River	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	140,000	04-15-04	04-30-04	Twisp River	Methow River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>4,046,927</b>				
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2004	267,000	03-15-04	04-30-04	Clark Flat Acclim Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2004	280,000	03-15-04	04-30-04	Jack Creek Acclim Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2004	291,400	03-15-04	04-30-04	Easton Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CO	UN	2004	233,750	04-12-04	04-30-04	Easton Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CO	UN	2004	233,750	04-12-04	04-30-04	Lost Creek Acclim Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CO	UN	2004	233,750	04-12-04	04-30-04	Stiles Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CO	UN	2004	233,750	04-12-04	04-30-04	Yakama River	Yakama River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2004	400,000	04-15-04	04-30-04	Prosser Acclim Pond	Yakama River
<b>Yakama Tribe Total</b>					<b>2,173,400</b>				
<b>Grand Total</b>					<b>18,507,985</b>				

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

## HATCHERY RELEASE NEXT TWO WEEKS

### Hatchery Release Summary

From: 4/30/2004 to 5/13/2004

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite
Colville Tribe	Wells Hatchery	ST	SU	2004	9,000	04-26-04	04-30-04	Omak Creek
<b>Colville Tribe Total</b>					<b>9,000</b>			
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	29,000	04-05-04	05-07-04	Valley Creek
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	33,500	04-05-04	05-07-04	Lemhi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	50,000	04-05-04	05-07-04	East Fk Salmon River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	82,000	04-05-04	05-07-04	Lemhi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	180,000	04-05-04	05-07-04	Yankee Fk (Salmon R)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	180,000	04-19-04	05-07-04	McNabb/Salmon River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	190,000	04-05-04	05-07-04	Squaw Cr Acclim Pond
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2004	204,000	04-05-04	05-07-04	East Fk Salmon River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2004	445,000	04-02-04	05-04-04	Little Salmon River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2004	830,000	04-13-04	05-01-04	Pahsimeroi River
<b>Idaho Dept. of Fish and Game Total</b>					<b>2,223,500</b>			
Nez Perce Tribe	Dworshak NFH	CO	UN	2004	235,000	05-03-04	05-03-04	Clear Creek
<b>Nez Perce Tribe Total</b>					<b>235,000</b>			
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2004	3,000	05-06-04	05-07-04	Deer Creek
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2004	80,000	04-29-04	05-06-04	L Sheep Acclim Pond
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2004	81,000	05-06-04	05-13-04	Big Canyon Acclim.Pd (G R)
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2004	161,000	05-05-04	05-13-04	Wallowa Acclim Pond
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>325,000</b>			
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2004	105,000	04-26-04	05-11-04	East Fk Salmon River
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2004	772,000	04-16-04	05-07-04	Sawtooth Hatchery
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2004	3,400,000	05-06-04	05-06-04	Spring Creek Hatchery
<b>U.S. Fish and Wildlife Service Total</b>					<b>4,277,000</b>			
Umatilla Tribe	Umatilla Hatchery	ST	SU	2004	45,200	04-19-04	04-30-04	Bonifer Acclim Pond
Umatilla Tribe	Umatilla Hatchery	ST	SU	2004	45,200	04-19-04	04-30-04	Minthorn Acclimation Pond
Umatilla Tribe	Umatilla Hatchery	ST	SU	2004	45,200	04-19-04	04-30-04	Pendelton Acclim Pond
<b>Umatilla Tribe Total</b>					<b>135,600</b>			
Warm Springs Tribe	Oak Springs Hatchery	ST	SU	2004	40,000	04-09-04	05-06-04	Blackberry Acclim Pond
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2004	25,000	04-08-04	05-07-04	Parkdale Acclim Pond
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2004	25,000	04-12-04	05-07-04	E Fk Irrig Dist Sand Trap
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2004	22,500	04-07-04	05-03-04	Jones Creek Acclim Pond
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2004	22,500	04-07-04	05-05-04	Blackberry Acclim Pond
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2004	30,000	04-02-04	04-30-04	Parkdale Acclim Pond
<b>Warm Springs Tribe Total</b>					<b>165,000</b>			

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

## HATCHERY RELEASE NEXT TWO WEEKS (continued)

		Hatchery Release Summary							
From:				4/30/2004	to		5/13/2004		
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2004	2,600	04-19-04	04-30-04	White River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2004	9,000	04-19-04	04-30-04	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2004	150,179	04-15-04	05-07-04	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2004	860,000	04-19-04	05-03-04	Dryden Acclim Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2004	192,000	04-19-04	05-14-04	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2004	85,000	04-01-04	04-30-04	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2004	160,000	04-01-04	04-30-04	Cottonwood Acclim Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2004	62,000	04-12-04	04-30-04	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2004	186,000	04-12-04	04-30-04	Methow Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2004	254,000	04-12-04	04-30-04	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2004	312,000	04-19-04	05-07-04	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2004	20,000	05-03-04	05-10-04	Drano Lake	Little White Salmon River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2004	100,000	04-30-04	05-07-04	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2004	20,000	04-15-04	04-30-04	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2004	65,000	04-19-04	04-30-04	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2004	121,000	04-19-04	04-30-04	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2004	249,000	04-19-04	04-30-04	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2004	340,917	04-15-04	04-30-04	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	45,000	04-15-04	05-07-04	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	55,000	04-19-04	05-14-04	Okanogan River	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	76,042	04-15-04	04-30-04	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	76,042	04-15-04	05-14-04	Methow River	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2004	140,000	04-15-04	04-30-04	Twisp River	Methow River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>3,580,780</b>				
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2004	267,000	03-15-04	04-30-04	Clark Flat Acclim Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2004	280,000	03-15-04	04-30-04	Jack Creek Acclim Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2004	291,400	03-15-04	04-30-04	Easton Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CO	UN	2004	233,750	04-12-04	04-30-04	Easton Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CO	UN	2004	233,750	04-12-04	04-30-04	Lost Creek Acclim Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CO	UN	2004	233,750	04-12-04	04-30-04	Stiles Pond	Yakama River
Yakama Tribe	Cle Elem Hatchery	CO	UN	2004	233,750	04-12-04	04-30-04	Yakama River	Yakama River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2004	400,000	04-15-04	04-30-04	Prosser Acclim Pond	Yakama River
<b>Yakama Tribe Total</b>					<b>2,173,400</b>				
<b>Grand Total</b>					<b>13,124,280</b>				

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

## 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			
								Rank 1	Rank 2	Rank 3	Rank 4
<b>Lower Granite Dam</b>											
	04/20/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/27/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Little Goose Dam</b>											
	04/21/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/28/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	04/19/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/26/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	04/20/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/22/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/26/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	04/20/04	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/24/04	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
	04/27/04	Chinook + Steelhead	101	1	1	0.99%	0.00%	1	0	0	0
<b>Rock Island Dam</b>											
	04/22/04	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	04/26/04	Chinook + Steelhead	100	2	2	2.00%	0.00%	1	1	0	0
	04/29/04	Chinook + Steelhead	100	2	2	2.00%	0.00%	1	1	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>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/16	---	---	---	0	109	110	110	24	109	109	109	24	104	104	105	24	107	107	107	23
4/17	---	---	---	0	110	110	111	24	108	108	109	24	104	105	105	24	106	106	107	23
4/18	---	---	---	0	108	108	109	24	107	108	108	24	104	105	106	24	106	107	109	23
4/19	---	---	---	0	108	109	109	24	108	108	109	24	104	104	105	24	106	106	106	23
4/20	---	---	---	0	107	108	108	24	108	108	109	24	104	104	106	24	106	106	106	23
4/21	---	---	---	0	107	108	108	24	107	107	108	24	104	104	107	24	105	106	106	24
4/22	---	---	---	0	107	108	108	24	106	106	107	24	103	104	105	24	104	104	105	23
4/23	---	---	---	0	107	108	108	24	106	107	107	24	103	104	105	24	104	105	105	23
4/24	---	---	---	0	106	107	108	24	105	105	106	21	103	104	104	24	105	105	106	23
4/25	---	---	---	0	107	108	109	24	106	106	106	24	103	104	104	24	105	105	106	23
4/26	---	---	---	0	107	108	109	24	107	108	108	24	104	105	106	24	105	105	106	23
4/27	---	---	---	0	108	109	110	24	108	108	109	24	107	108	108	24	106	107	108	22
4/28	---	---	---	0	108	109	110	24	105	105	106	24	106	106	108	24	106	106	107	23
4/29	---	---	---	0	108	109	110	24	106	106	107	24	106	106	107	24	105	106	106	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>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/16	107	108	109	23	107	107	108	24	109	110	110	24	115	115	115	24	115	115	115	24
4/17	106	107	109	23	107	108	108	24	110	111	111	24	114	115	115	24	114	115	115	24
4/18	107	107	108	23	107	107	108	24	110	110	111	24	115	115	115	24	115	115	115	24
4/19	106	106	107	23	107	107	108	24	110	111	112	24	116	117	117	24	116	116	117	24
4/20	106	107	108	23	107	107	107	24	110	111	111	24	116	116	117	24	116	116	117	24
4/21	105	106	106	24	106	106	106	22	109	109	110	22	112	114	116	23	112	114	116	23
4/22	104	105	106	23	105	106	106	24	109	109	110	24	108	108	108	24	108	108	108	24
4/23	105	106	107	23	105	106	106	23	109	109	110	23	108	108	109	24	108	108	109	24
4/24	105	105	106	23	105	105	105	23	108	108	109	23	108	108	108	24	108	108	108	24
4/25	105	106	107	23	105	106	106	20	108	108	109	20	107	108	108	24	107	108	108	24
4/26	105	105	106	23	106	107	107	24	109	110	110	24	108	109	109	24	108	109	109	24
4/27	106	107	108	23	107	108	108	22	110	111	112	22	110	111	111	24	110	111	111	24
4/28	105	106	106	23	105	106	106	23	110	110	110	23	109	109	110	24	111	111	111	24
4/29	106	106	107	23	105	106	107	24	109	110	110	24	109	109	109	23	111	111	111	23

### 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>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>		<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/16	108	109	109	24	109	109	110	24	107	107	108	23	107	107	107	23	107	107	108	23
4/17	108	108	109	24	114	115	117	24	108	108	109	22	107	107	108	23	107	107	107	23
4/18	108	108	109	24	113	114	115	24	108	108	109	23	108	108	108	23	107	107	107	23
4/19	109	110	111	24	114	115	116	24	108	108	109	23	109	110	117	23	108	108	109	23
4/20	110	110	111	24	114	116	116	24	109	110	110	23	116	116	118	23	110	113	114	23
4/21	109	109	109	24	114	115	116	24	109	109	110	23	115	116	117	23	113	113	114	23
4/22	108	108	109	24	114	115	117	24	109	109	110	23	114	115	116	23	113	113	114	23
4/23	108	108	108	24	114	115	117	24	---	---	---	0	---	---	---	0	---	---	---	0
4/24	107	108	108	24	113	114	115	24	108	109	110	23	117	117	117	23	114	115	116	23
4/25	107	108	108	24	113	113	114	24	110	111	114	23	116	118	118	23	116	116	117	23
4/26	108	109	109	24	114	115	117	24	111	112	114	23	115	116	116	23	115	116	118	23
4/27	109	109	110	24	115	117	119	24	---	---	---	0	---	---	---	0	---	---	---	0
4/28	108	109	109	24	114	116	118	24	109	109	110	23	114	115	115	23	111	111	113	23
4/29	108	109	109	23	114	115	117	23	---	---	---	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>Clrwrtr-Peck</u>			<u>Anatone</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>		<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>			<u>Avg</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>
4/16	106	106	107	23	102	103	104	24	98	100	102	24	101	101	102	24	102	103	104	24
4/17	106	106	107	23	103	104	104	24	97	98	98	24	100	101	101	24	102	103	104	24
4/18	106	106	106	23	103	103	104	24	97	97	97	24	100	100	100	24	102	103	103	24
4/19	107	109	117	23	104	107	108	24	97	97	98	24	100	101	101	24	102	103	103	24
4/20	118	118	119	23	106	107	110	24	97	97	97	24	100	100	101	24	102	103	104	24
4/21	118	118	118	23	111	112	113	24	97	97	98	24	100	101	101	24	102	103	104	24
4/22	117	117	118	23	112	113	114	24	96	97	97	21	99	100	101	24	102	103	104	20
4/23	---	---	---	0	---	---	---	0	97	97	97	24	100	100	101	24	102	103	104	23
4/24	117	117	118	23	111	112	113	24	97	97	98	24	100	101	102	24	102	103	104	17
4/25	117	118	118	23	113	114	114	24	96	96	97	24	100	101	102	24	102	103	105	24
4/26	117	118	118	23	114	115	116	24	96	96	97	24	100	101	102	24	103	104	105	24
4/27	---	---	---	0	113	114	115	24	97	98	99	20	100	101	102	24	103	104	105	24
4/28	116	117	117	23	108	109	110	24	97	98	98	23	99	100	100	23	101	102	103	22
4/29	---	---	---	0	112	113	114	24	97	97	97	24	100	101	102	24	102	104	105	24

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

Date	<u>Clrwrtr-Lewiston</u>			<u>Lower Granite</u>			<u>L. Granite Tlwr</u>			<u>Little Goose</u>			<u>L. Goose Tlwr</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>		<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>			<u>Avg</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>
4/16	101	102	104	24	102	103	104	24	110	111	111	24	109	109	109	24	114	118	119	24
4/17	101	102	103	24	102	102	102	24	111	111	112	24	108	108	108	24	113	117	120	24
4/18	100	101	102	24	102	102	103	24	110	111	112	24	107	107	108	24	113	118	120	24
4/19	101	102	103	24	103	103	105	24	111	112	113	24	108	108	109	24	113	117	120	24
4/20	101	102	102	24	103	103	103	24	111	112	112	24	109	109	110	24	113	117	119	24
4/21	101	102	104	24	102	103	103	24	111	111	112	24	108	108	108	24	111	114	120	24
4/22	101	102	104	24	102	103	105	24	111	111	114	24	106	106	107	24	112	115	118	24
4/23	101	102	104	24	103	104	105	24	104	106	111	24	107	108	108	24	110	112	114	24
4/24	101	103	104	24	101	101	102	24	101	101	101	24	107	107	107	24	107	107	107	24
4/25	101	103	104	24	103	105	106	24	101	101	102	24	108	110	111	24	107	108	108	24
4/26	102	103	105	24	105	106	108	24	102	103	103	24	110	110	113	24	109	109	110	24
4/27	101	102	103	24	104	104	105	24	103	104	104	24	111	112	115	24	110	111	111	24
4/28	100	101	102	23	103	103	104	24	102	102	103	24	107	107	108	24	106	107	107	24
4/29	101	103	104	24	103	104	106	24	102	102	103	24	106	107	108	24	104	105	108	24

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>		<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>			<u>Avg</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>
4/16	111	111	112	24	110	110	111	24	110	110	110	24	116	117	120	24	105	106	109	24
4/17	111	112	112	24	109	110	110	24	109	110	110	24	113	114	118	24	107	109	111	24
4/18	110	111	112	24	109	109	109	24	109	109	109	24	113	113	113	24	106	107	109	24
4/19	112	113	114	24	109	109	110	24	109	109	109	24	115	116	116	24	108	110	111	24
4/20	112	113	114	24	109	109	110	24	109	109	109	24	114	115	116	24	107	107	108	24
4/21	110	111	112	24	108	108	110	24	108	108	108	24	112	113	115	24	106	106	107	24
4/22	108	109	109	24	107	107	107	24	107	107	107	24	112	113	113	24	106	107	109	24
4/23	108	108	109	24	107	107	107	23	107	107	107	24	113	114	115	24	107	109	110	24
4/24	107	108	108	24	106	107	111	24	106	106	107	24	114	115	115	24	109	111	112	24
4/25	109	110	111	24	109	111	112	24	107	107	107	24	113	114	115	24	110	111	113	24
4/26	109	110	111	24	109	111	113	24	107	107	108	24	111	112	113	24	111	112	113	24
4/27	109	109	110	24	111	112	113	24	108	109	109	24	114	116	118	24	112	113	114	24
4/28	107	107	108	24	111	115	120	24	109	109	110	23	115	116	117	24	111	111	112	24
4/29	108	108	111	24	113	118	120	24	110	111	112	24	114	115	118	24	111	113	115	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> Avg	<u>12 h</u> Avg	High	# hr	<u>24 h</u> Avg	<u>12 h</u> Avg	High	# hr	<u>24h</u> Avg	<u>12h</u> Avg	High	# hr	<u>24h</u> Avg	<u>12h</u> Avg	High	# hr				
4/16	105	106	108	24	111	117	117	24	106	106	106	23	112	118	119	24	109	111	113	23
4/17	105	106	106	24	110	113	116	24	105	106	106	23	112	118	118	24	109	111	112	23
4/18	106	107	108	24	110	114	116	24	105	105	105	19	110	116	118	24	108	110	113	23
4/19	109	110	112	24	112	115	116	24	---	---	---	0	112	118	119	24	109	111	113	23
4/20	108	109	111	24	112	117	118	24	106	106	106	11	112	118	119	24	109	111	114	23
4/21	106	107	107	24	112	117	118	24	106	106	106	23	112	118	119	24	109	111	113	23
4/22	106	107	110	24	110	116	117	24	106	106	107	23	111	116	119	24	107	108	110	23
4/23	109	109	109	24	112	116	116	24	107	107	107	23	112	118	119	24	110	111	112	23
4/24	110	111	114	24	112	115	116	24	105	105	106	23	112	118	118	24	109	111	113	23
4/25	112	112	113	24	113	115	115	24	107	108	109	23	111	115	118	21	111	113	115	23
4/26	112	113	114	24	112	115	116	24	108	109	110	23	112	117	118	24	111	113	115	23
4/27	114	115	116	24	114	116	118	24	109	109	110	23	112	115	118	24	111	113	115	23
4/28	111	111	112	24	113	116	117	24	107	107	108	23	111	116	117	24	107	109	111	23
4/29	111	112	113	24	113	117	117	24	107	108	109	23	112	116	117	24	110	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>Camas\Washugal</u>						
	<u>24 h</u> Avg	<u>12 h</u> Avg	High	# hr	<u>24 h</u> Avg	<u>12 h</u> Avg	High	# hr	<u>24h</u> Avg	<u>12h</u> Avg	High	# hr				
4/16	114	115	116	24	111	111	112	23	111	112	112	23	109	111	112	24
4/17	114	115	116	24	112	112	113	23	112	113	113	23	111	113	114	24
4/18	113	114	116	24	111	112	113	23	113	114	114	23	111	112	113	24
4/19	114	115	115	24	112	112	113	23	114	114	114	23	111	112	113	24
4/20	114	115	116	24	112	112	113	23	113	113	113	23	110	111	111	24
4/21	114	115	116	24	112	112	113	23	113	113	114	23	111	112	113	24
4/22	113	113	115	24	111	112	112	23	113	114	115	23	112	115	116	24
4/23	114	114	115	24	111	111	111	23	114	115	117	23	112	113	115	24
4/24	113	114	114	24	110	110	111	23	114	115	116	23	112	115	117	24
4/25	115	116	116	24	110	110	111	23	114	115	116	23	111	112	113	24
4/26	115	115	116	24	111	111	112	23	114	114	115	23	109	112	113	24
4/27	114	116	116	24	114	115	116	23	115	116	116	23	113	114	116	24
4/28	112	112	114	24	109	110	111	23	113	113	114	23	112	114	116	24
4/29	114	114	115	24	109	109	111	23	113	113	114	23	111	113	114	24

## Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK													
	ENT	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
04/16/2004	*	---	564	3,787	1,261	18	83,274	7,180	150,700	498	16	4,192	26,998
04/17/2004	*	1	---	2,203	---	---	64,178	10,404	55,821	539	6,205	4,807	67,255
04/18/2004	*	1	---	932	---	---	70,383	12,217	64,628	98	---	4,769	61,711
04/19/2004	*	2	332	361	153	59	73,186	33,047	26,927	83	9,436	4,292	37,690
04/20/2004	*	5	759	861	103	33	30,206	26,158	29,100	24	---	6,464	35,471
04/21/2004		2	253	502	68	59	56,186	44,194	25,300	964	19,992	9,269	35,472
04/22/2004	*	1	639	628	82	11	51,780	43,280	32,000	418	---	8,198	37,018
04/23/2004	*	2	528	409	63	11	30,928	34,351	42,500	218	10,100	9,015	30,748
04/24/2004		---	---	281	---	---	61,194	111,903	55,400	70	666	3,740	29,044
04/25/2004		---	---	360	---	---	113,283	147,405	28,880	272	28,253	3,961	23,546
04/26/2004	*	2	147	368	41	18	108,236	99,008	20,657	646	2,908	4,446	32,125
04/27/2004	*	0	84	464	46	29	193,582	49,802	14,302	337	34,015	3,795	21,397
04/28/2004	*	3	17	398	110	135	143,037	164,009	22,239	291	1,853	5,912	47,272
04/29/2004	*	2	335	804	393	3	268,358	121,684	12,957	138	63,377	8,705	43,465
04/30/2004		1	72	---	---	---	---	---	---	---	---	8,301	---
<hr/>													
<b>Total:</b>		<b>22</b>	<b>3,730</b>	<b>12,358</b>	<b>2,320</b>	<b>376</b>	<b>1,347,811</b>	<b>904,642</b>	<b>581,411</b>	<b>4,596</b>	<b>176,821</b>	<b>89,866</b>	<b>529,212</b>
<b># Days:</b>		<b>12</b>	<b>11</b>	<b>14</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>15</b>	<b>14</b>
<b>Average:</b>		<b>2</b>	<b>339</b>	<b>883</b>	<b>232</b>	<b>38</b>	<b>96,272</b>	<b>64,617</b>	<b>41,529</b>	<b>328</b>	<b>16,075</b>	<b>5,991</b>	<b>37,801</b>
<b>YTD</b>		<b>740</b>	<b>28,845</b>	<b>66,754</b>	<b>7,951</b>	<b>991</b>	<b>1,608,294</b>	<b>925,309</b>	<b>644,093</b>	<b>4,893</b>	<b>186,189</b>	<b>121,697</b>	<b>583,093</b>

COMBINED SUBYEARLING CHINOOK													
	ENT	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
04/16/2004	*	---	0	0	0	4	143	29	100	33	0	0	286,127
04/17/2004	*	1	---	1	---	---	226	0	149	8	38	0	156,561
04/18/2004	*	0	---	0	---	---	236	0	298	53	---	0	28,016
04/19/2004	*	0	0	0	0	0	973	319	0	14	282	0	5,543
04/20/2004	*	1	0	0	1	2	0	0	0	11	---	0	4,736
04/21/2004		4	0	0	0	0	0	72	0	9	205	0	4,125
04/22/2004	*	0	0	0	0	44	0	0	0	3	---	0	4,224
04/23/2004	*	0	0	0	1	2	0	148	0	1	238	20	2,598
04/24/2004		---	---	0	---	---	0	0	0	0	9	0	2,276
04/25/2004		---	---	0	---	---	0	0	0	16	213	0	1,090
04/26/2004	*	1	0	0	0	2	0	0	133	1	5	0	1,841
04/27/2004	*	0	0	0	0	0	149	0	0	18	461	0	831
04/28/2004	*	0	0	0	1	2	0	0	61	1	3	3	1,291
04/29/2004	*	8	0	0	0	4	149	0	0	4	365	7	1,432
04/30/2004		1	0	---	---	---	---	---	---	---	---	6	---
<hr/>													
<b>Total:</b>		<b>16</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>60</b>	<b>1,876</b>	<b>568</b>	<b>741</b>	<b>172</b>	<b>1,819</b>	<b>36</b>	<b>500,691</b>
<b># Days:</b>		<b>12</b>	<b>11</b>	<b>14</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>15</b>	<b>14</b>
<b>Average:</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>134</b>	<b>41</b>	<b>53</b>	<b>12</b>	<b>165</b>	<b>2</b>	<b>35,764</b>
<b>YTD</b>		<b>101</b>	<b>0</b>	<b>19</b>	<b>4</b>	<b>112</b>	<b>2,908</b>	<b>599</b>	<b>841</b>	<b>1,112</b>	<b>2,071</b>	<b>46</b>	<b>1,437,546</b>

\* See sampling comments <http://www.fpc.org/currentDaily/smpcomments.htm>  
 this means that one or more of the sites on this date had an incomplete or biased sample.

For clip information see: [Daily Catch Report](#)

For sockeye and yearling chinook (Snake only) race information see: [Current Passage Index Query](#)

If the text appears garbled, please hit the refresh button on your browser

NOTE for 2002 Lower Monumental Data: Due to the non-standard operation of Lower Monumental this year, the passage index reliability is in question and is being looked into.

Fall (post SMP season) trapping at the Imnaha River Fish Trap (IMN) is funded by the Lower Snake River Compensation Program (LSRCP)



## Two-Week Summary of Passage Indices

COMBINED COHO													
Date	ENT (Coll)	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
4/16/2004	*	---	0	0	0	714	0	0	2	0	14	19,365	
4/17/2004	*	0	---	0	---	0	0	0	1	166	27	18,008	
4/18/2004	*	0	---	0	---	709	0	0	0	---	27	9,465	
4/19/2004	*	0	0	0	0	243	0	0	0	122	14	6,466	
4/20/2004	*	0	0	0	0	0	0	0	0	---	55	13,093	
4/21/2004		0	0	0	0	0	0	100	1	219	69	14,757	
4/22/2004	*	0	0	0	0	265	0	100	4	---	101	19,009	
4/23/2004	*	0	0	0	0	251	0	300	1	142	259	23,385	
4/24/2004		---	---	0	---	597	0	0	3	0	124	14,414	
4/25/2004		---	---	0	---	448	200	260	19	78	204	18,633	
4/26/2004	*	0	0	0	0	298	0	0	8	0	133	23,472	
4/27/2004	*	0	0	0	0	746	0	0	7	0	59	21,916	
4/28/2004	*	0	0	0	0	895	0	0	5	20	136	29,539	
4/29/2004	*	0	0	0	0	1,194	0	0	3	362	126	28,684	
4/30/2004		0	0	---	---	---	---	---	---	---	303	---	
<hr/>													
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>6,360</b>	<b>200</b>	<b>760</b>	<b>54</b>	<b>1,109</b>	<b>1,651</b>	<b>260,206</b>
<b># Days:</b>		<b>12</b>	<b>11</b>	<b>14</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>15</b>	<b>14</b>	
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>454</b>	<b>14</b>	<b>54</b>	<b>4</b>	<b>101</b>	<b>110</b>	<b>18,586</b>
<b>/TD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>7,597</b>	<b>200</b>	<b>790</b>	<b>54</b>	<b>1,198</b>	<b>1,804</b>	<b>307,220</b>

COMBINED STEELHEAD													
Date	ENT (Coll)	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
4/16/2004	*	---	88	1,170	170	40	21,621	8,248	4,000	83	0	516	1,506
4/17/2004	*	3	---	546	---	---	18,984	10,816	4,776	27	868	591	1,470
4/18/2004	*	3	---	163	---	---	16,533	9,502	5,523	21	---	619	568
4/19/2004	*	3	19	82	2	129	27,475	15,832	4,517	39	2,117	519	554
4/20/2004	*	2	50	119	6	291	26,988	4,030	3,600	51	---	664	836
4/21/2004		2	34	121	70	125	23,184	4,640	4,900	62	4,975	1,025	642
4/22/2004	*	5	71	159	8	173	23,633	1,981	3,800	51	---	1,290	778
4/23/2004	*	8	121	116	12	8	9,555	8,589	6,000	68	2,488	1,592	541
4/24/2004		---	---	146	---	---	18,358	36,603	8,500	76	255	1,397	2,059
4/25/2004		---	---	234	---	---	58,806	33,204	5,204	53	5,274	1,654	1,514
4/26/2004	*	5	58	240	4	13	176,163	52,006	5,860	79	415	1,382	1,013
4/27/2004	*	2	75	306	6	79	221,642	43,605	5,059	81	2,711	1,273	1,143
4/28/2004	*	15	142	723	19	89	65,421	51,403	6,232	46	334	1,314	1,891
4/29/2004	*	11	159	2,305	128	55	90,747	69,220	6,412	63	4,208	1,858	1,565
4/30/2004		0	115	---	---	---	---	---	---	---	---	1,689	---
<hr/>													
<b>Total:</b>		<b>59</b>	<b>932</b>	<b>6,430</b>	<b>425</b>	<b>1,002</b>	<b>799,110</b>	<b>349,679</b>	<b>74,383</b>	<b>800</b>	<b>23,645</b>	<b>17,383</b>	<b>16,080</b>
<b># Days:</b>		<b>12</b>	<b>11</b>	<b>14</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>15</b>	<b>14</b>	
<b>Average:</b>		<b>5</b>	<b>85</b>	<b>459</b>	<b>43</b>	<b>100</b>	<b>57,079</b>	<b>24,977</b>	<b>5,313</b>	<b>57</b>	<b>2,150</b>	<b>1,159</b>	<b>1,149</b>
<b>/TD</b>		<b>178</b>	<b>1,288</b>	<b>14,106</b>	<b>526</b>	<b>1,364</b>	<b>867,487</b>	<b>365,243</b>	<b>83,311</b>	<b>870</b>	<b>25,193</b>	<b>21,757</b>	<b>24,796</b>

\* See sampling comments

<http://www.fpc.org/currentDaily/smpcomments.htm>

## Two-Week Summary of Passage Indices

Date	COMBINED SOCKEYE											JDA	BO2
	ENT (Coll)	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	(INDEX)		
04/16/2004	*	---	0	0	0	0	0	0	0	98	0	14	0
04/17/2004	*	0	---	0	---	---	0	0	0	112	30	0	0
04/18/2004	*	0	---	0	---	---	0	0	0	144	---	0	0
04/19/2004	*	0	0	0	0	0	0	0	0	697	49	0	0
04/20/2004	*	0	0	0	0	0	0	0	0	648	---	0	0
04/21/2004	*	0	0	0	0	0	0	0	0	45	188	14	0
04/22/2004	*	0	0	0	0	0	0	0	0	40	---	0	0
04/23/2004	*	0	0	0	0	0	0	0	0	45	333	0	0
04/24/2004	*	---	---	0	---	---	0	0	0	92	14	20	0
04/25/2004	*	---	---	0	---	---	0	0	0	222	679	0	0
04/26/2004	*	0	0	0	0	0	0	0	0	191	45	7	0
04/27/2004	*	0	0	0	0	0	0	0	0	140	856	17	0
04/28/2004	*	0	0	0	0	0	0	0	0	198	61	13	28
04/29/2004	*	0	0	0	0	0	0	0	0	37	1,537	52	30
04/30/2004	*	0	0	---	---	---	---	---	---	---	---	67	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,709</b>	<b>3,792</b>	<b>204</b>	<b>58</b>
<b># Days:</b>		<b>12</b>	<b>11</b>	<b>14</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>15</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>194</b>	<b>345</b>	<b>14</b>	<b>4</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>445</b>	<b>24</b>	<b>81</b>	<b>3,316</b>	<b>3,985</b>	<b>224</b>	<b>197</b>

\* See sampling comments

<http://www.fpc.org/currentDaily/smpcomments.htm>

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
- ENT (Collection) = Entiat River Trap : 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. ENT data collected for the FPC by USFWS.

## Two Week Transportation Summary

Source: Fish Passage Center

Updated:

4/30/04 10:34 AM

		04/17/04 TO 04/30/04					
		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	1,293	1,176,512	5,573		734,952	1,918,330
	Sum of NumberBarged	1,779	1,198,624	5,765		740,697	1,946,865
	Sum of NumberBypassed	0	3,560	0		5,247	8,807
	Sum of Numbertrucked	0	0	0		0	0
	Sum of TotalProjectMortalities	14	10,609	8		208	10,839
<b>LGS</b>	Sum of NumberCollected	370	829,295	200		326,894	1,156,759
	Sum of NumberBarged	364	832,389	200		329,787	1,162,740
	Sum of NumberBypassed	0	0	0		0	0
	Sum of Numbertrucked	0	0	0		0	0
	Sum of TotalProjectMortalities	6	177	0		51	234
<b>LMN</b>	Sum of NumberCollected	697	559,530	700		68,006	628,933
	Sum of NumberBarged	717	611,254	720		71,484	684,175
	Sum of NumberBypassed	0	626	0		59	685
	Sum of Numbertrucked	0	0	0		0	0
	Sum of TotalProjectMortalities	0	971	0		122	1,093
<b>MCN</b>	Sum of NumberCollected	1,286	125,414	753	2,725	16,631	146,809
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,278	124,920	753	2,711	16,610	146,272
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of TotalProjectMortalities	9	485	0	14	21	529
Total Sum of NumberCollected		3,646	2,690,751	7,226	2,725	1,146,483	3,850,831
Total Sum of NumberBarged		2,860	2,642,267	6,685	0	1,141,968	3,793,780
Total Sum of NumberBypassed		1,278	129,106	753	2,711	21,916	155,764
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of TotalProjectMortalities		29	12,242	8	14	402	12,695

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/30/04 10:34 AM

TO: 04/30/04

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	2,003	1,348,453	6,433	310	782,451	2,139,650
	Sum of NumberBarged	1,856	1,289,201	6,205	120	760,391	2,057,773
	Sum of NumberBypassed	0	4,224	0	0	6,330	10,554
	Sum of NumberTrucked	129	43,991	220	181	15,496	60,017
	Sum of TotalProjectMortalities	18	11,037	8	9	234	11,306
<b>LGS</b>	Sum of NumberCollected	390	842,907	200	15	337,075	1,180,587
	Sum of NumberBarged	383	840,682	200	13	335,690	1,176,968
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of NumberTrucked	0	2,096	0	2	1,333	3,431
	Sum of TotalProjectMortalities	7	196	0	0	53	256
<b>LMN</b>	Sum of NumberCollected	797	622,212	730	81	76,934	700,754
	Sum of NumberBarged	787	619,190	730	81	76,079	696,867
	Sum of NumberBypassed	0	670	0	0	115	785
	Sum of NumberTrucked	10	1,352	0	0	604	1,966
	Sum of TotalProjectMortalities	0	1,000	0	0	136	1,136
<b>MCN</b>	Sum of NumberCollected	1,506	132,581	818	2,910	17,875	155,690
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,498	132,067	818	2,896	17,852	155,131
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of TotalProjectMortalities	9	505	0	14	23	551
Total Sum of NumberCollected		4,696	2,946,153	8,181	3,316	1,214,335	4,176,681
Total Sum of NumberBarged		3,026	2,749,073	7,135	214	1,172,160	3,931,608
Total Sum of NumberBypassed		1,498	136,961	818	2,896	24,297	166,470
Total Sum of NumberTrucked		139	47,439	220	183	17,433	65,414
Total Sum of TotalProjectMortalities		34	12,738	8	23	446	13,249

**Cumulative Adult Passage at Mainstem Dams Through: 04/29**

DAM	Spring Chinook						Summer Chinook						Fall Chinook					
	2004		2003		10-Yr Avg.		2004		2003		10-Yr Avg.		2004		2003		10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	102,943	667	134,568	1,680	82,282	1,165	0	0	0	0	0	0	0	0	0	0	0	0
TDA	71,766	598	83,494	818	47,693	493	0	0	0	0	0	0	0	0	0	0	0	0
JDA	59,232	342	60,610	574	34,215	311	0	0	0	0	0	0	0	0	0	0	0	0
MCN	48,549	612	53,576	371	26,554	201	0	0	0	0	0	0	0	0	0	0	0	0
IHR	33,249	303	42,159	184	16,627	107	0	0	0	0	0	0	0	0	0	0	0	0
LMN	26,757	196	33,336	99	14,822	63	0	0	0	0	0	0	0	0	0	0	0	0
LGS	16,214	22	31,914	168	13,325	83	0	0	0	0	0	0	0	0	0	0	0	0
LWG	15,432	42	29,313	76	11,566	37	0	0	0	0	0	0	0	0	0	0	0	0
PRD	2,298	2	8,888	2	3,441	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	212	0	6,123	50	1,302	3	0	0	0	0	0	0	0	0	0	0	0	0
RRH	33	0	963	0	209	0	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			
	2004		2003		10-Yr Avg.		10-Yr Avg.			10-Yr Avg.			Wild
	Adult	Jack	Adult	Jack	Adult	Jack	2004	2003	Avg.	2004	2003	Avg.	2004
BON	0	0	0	0	0	0	0	0	0	2,965	2,594	2,237	773
TDA	0	0	0	0	0	0	0	0	0	1,058	801	814	531
JDA	0	0	0	0	0	0	0	0	0	1,420	1,327	2,742	830
MCN	0	0	0	0	0	0	0	0	0	1,072	1,309	1,444	515
IHR	0	0	0	0	0	0	0	0	0	1,666	1,548	1,618	729
LMN	0	0	0	0	0	0	0	0	0	1,475	1,872	1,699	786
LGS	0	0	0	0	0	0	0	0	0	1,478	2,001	1,703	805
LWG	0	0	0	0	0	0	0	0	0	7,438	15,621	5,752	2,513
PRD	0	0	0	0	0	0	0	0	0	4	7	1	0
RIS	0	0	0	0	0	0	0	0	0	10	17	15	0
RRH	0	0	0	0	0	0	0	0	0	44	42	41	0
WEL	0	0	0	0	0	0	0	0	0	0	0	0	0

PRD, RIS, RRH are through 04/28.

MCN is missing 04/11; LGS is missing 04/09, 04/13 and 04/14, 04/28.

\*\*PRD is not reporting Wild Steelhead numbers.

These numbers were collected from the COE's Running Sums text files, except where otherwise noted.

Wild steelhead numbers are included in the total.

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.

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BON counts from January 1, 2004 to March 14, 2004 (our traditional counts begin March 15)

Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
156	1	1,489	238

