



# Fish Passage Center

## Weekly Report #09 - 07

April 24, 2009

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 53% and 108% of average at individual sub-basins over April. Precipitation above The Dalles has been 96% of average over April. Over the entire water year, precipitation has generally been near 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 2009 April 1-20		Water Year 2009 October 1, 2008 to April 20, 2009	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.77	70	14.41	94
Snake River Above Ice Harbor	1.05	108	11.87	105
Columbia Above The Dalles	1.05	96	15.19	99
Kootenai	0.84	72	13.96	89
Clark Fork	0.46	56	11.12	113
Flathead	0.55	53	12.40	94
Pend Oreille/ Spokane	1.22	81	20.33	94
Central Washington	0.30	71	5.57	88
Snake River Plain	0.75	108	6.44	95
Salmon/Boise/ Payette	0.86	80	12.37	89
Clearwater	1.33	75	23.05	113
SW Washington Cascades/ Cowlitz	3.60	101	50.52	89
Willamette Valley	2.74	85	40.06	83

Average snowpack in the Columbia River for basins above the Snake River confluence is 86% of average, for Snake River Basins the average snowpack is 86% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 137% of average.

Table 2 displays the April Final and April Mid Month runoff volume forecasts for multiple reservoirs. Water Supply Forecasts have remained steady at all sites between the April Final and April Mid Month forecasts. The current forecast at The Dalles between January and July is 91100 Kaf (85% of average).

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

Location	April Final		April Mid Month	
	% Average (1971- 2000)	Probable Runoff Volume (Kaf)	% Average (1971- 2000)	Probable Runoff Volume (Kaf)
The Dalles (Jan-July)	86	92000	85	91100
Grand Coulee (Jan-July)	89	56200	88	55500
Libby Res. Inflow, MT (Apr-Aug)	88 90*	5500 5672*	87	5440
Hungry Horse Res. Inflow, MT (Jan-July)	94	2100	91	2020
Lower Granite Res. Inflow (Apr- July)	95	20400	95	20400
Brownlee Res. Inflow (Apr-July)	79	4970	81	5100
Dworshak Res. Inflow (Apr-July)	102 99*	2710 2662	101	2660

\* Denotes COE Forecast

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite) and began on April 10th in the mid (Priest Rapids) and lower (McNary) Columbia River. According to the April Final Water Supply Forecast, the flow objectives this spring are 100 Kcfs at Lower Granite, 228 Kcfs at McNary, and 135 Kcfs at Priest Rapids. Flows at Lower Granite Dam from April 3-23 have averaged 84.2 Kcfs and 100.7 Kcfs over the last week, flows at Priest Rapids from April 10-23 averaged 126.5 Kcfs and 134.0 Kcfs over the last week, and flows at McNary have averaged 234.9 Kcfs between April 10-23 and 246.6 Kcfs over the last week.

Grand Coulee Reservoir is at 1264.5 feet (4-23-09) and has drafted 6.2 feet in the last week. The end of April FC elevation at Grand Coulee is now 1257.7 feet. Outflows at Grand Coulee have ranged between 116.2 and 131.5 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2404.2 feet (4-23-09) and refilled 1.1 feet last week. The end of April elevation at Libby is 2434.2 feet, therefore Libby is currently 30 feet below the end of April FC elevation at Libby. Outflows at Libby have been 4.0 Kcfs.

Hungry Horse is currently at an elevation of 3515.8 ft (4-23-09) and has refilled 4.9 feet last week. Outflows at Hungry Horse have been 0.9- 1.0 Kcfs last week; Hungry Horse has been operating to Columbia Falls Minimum outflows. The end of April FC Elevation at Hungry Horse is 3528.0 feet, therefore Hungry Horse is currently 12.2 feet below the end of April flood control.

Dworshak is currently at an elevation of 1526.4 feet (4-23-09) and has held steady last week. Outflows at Dworshak were approximately 14.8 Kcfs last week. The COE stated at the April 22<sup>nd</sup> TMT Meeting that Dworshak intercepted its refill curve on April 18<sup>th</sup> and will exceed its end of April flood control elevation of 1515.6 feet. The new end of April target elevation at Dworshak will be 1525.3 feet. It was agreed at the April 22<sup>nd</sup> TMT Meeting to decrease outflows at Dworshak Dam on 4-25-09 to 10 Kcfs if flows at Lower Granite Dam are expected to be greater than 100 Kcfs

The Brownlee Reservoir was at an elevation of 2050.9 feet on April 23<sup>rd</sup>, 2009, refilling 0.4 feet last week. The end of April FC elevation is 2053.2 feet at Brownlee. Outflows at Brownlee Dam have been 26.2 to 33.1 Kcfs over the last week.

**Spill:**

Flows continues to be high at Dworshak Dam. Spill has ranged between 4.1 and 4.2 Kcfs over the past week. The 2009 planned spring spill program at the lower Snake River Projects began on April 3 at 0001 hours and will continue through June 20, 2009. The following table shows the planned operations for 2009.

<b>Project</b>	<b>Day/Night Spill</b>
Lower Granite	20Kcfs/20Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	30%/30% vs 45Kcfs/Gas Cap Study

Flow in the Snake River has increased from about 80 Kcfs to over 140 Kcfs at the latter part of the week. Consequently, spill in excess of generation capacity has occurred at some of the Snake Projects this week. Spill at Lower Granite Dam averaged an instantaneous 20 Kcfs until late in the day on April 23, and then increased to a daily average of over 33 Kcfs by yesterday. Spill at Little Goose Dam achieved the 30% over the 24 hour period until the 22<sup>nd</sup> when the gas cap was lowered to less than the 30%. Due to higher flows the project began to exceed the 30% of daily average yesterday. Spill to the gas cap at Lower Monumental Dam was reduced over the past week from 29 to 24 Kcfs in response to the tailrace measurements of TDG at this project. Spill at Ice Harbor Dam met the 45 Kcfs daytime spill and gas cap nighttime spill in advance of the implementation of study like conditions until yesterday, when higher flows resulted in daytime spill exceeding the 45 Kcfs.

The 2009 spill program began at the lower Columbia River projects at 0001 hours on April 10<sup>th</sup>. The following table shows the planned operations for 2009.

<b>Project</b>	<b>Day/Night Spill</b>
McNary	40%/40%
John Day	30%/30% on pre-test days; 30%/30% vs. 40%/40% on test days
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

McNary Dam spill met or exceeded the Court Order over the past week. At John Day Dam the 30% spill was met over the past week. The Dalles and Bonneville dams both had reduction in spill caps this past week due to forebay TDG levels downstream of the projects and were spilling less than the court ordered spill amounts during some periods over this past week.

Total dissolved gas measurements at the Snake River federal hydroprojects were under the waiver limits over this past week with the exception of one day at the Lower Monumental Dam forebay when TDG measured 115.5%, three days at the Ice Harbor Dam forebay, and two days at the Ice Harbor Dam tailrace.

In the Lower Columbia TDG at the Bonneville Dam forebay exceeded the 115% by 0.1% on one day and 0.3% on a second day. The TDG at the Camas/Washougal monitor exceeded 115% and was as high as 116.7%. Reductions in Bonneville spill were made, but this station is not a required point of compliance.

Gas bubble trauma (GBT) monitoring occurred at Lower Granite, Little Goose and Lower Monumental dams in the Snake River, Rock Island in the Mid Columbia River and at McNary and Bonneville dams in the lower Columbia. No signs of GBT were detected in the samples this past week

#### **Adult Fish Passage:**

Adult counts at Bonneville Dam have been updated through April 23rd. Daily adult spring Chinook counts at Bonneville Dam ranged from 152 to 2142 adult salmon per day. Between March 15<sup>th</sup> and April 23rd, 8485 spring Chinook have been counted at Bonneville Dam. In 2008, 18860 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2009 adult spring Chinook count at Bonneville Dam is 44.9% of the 2008 count. The Bonneville spring Chinook adult count is only about 12.9% of the 10 year average of 65617. At Willamette Falls Dam 662 adult spring Chinook have been counted so far this year. The 2009 adult spring Chinook count at Willamette Falls Dam is 6.3 times greater than the 2008 count of 105. At The Dalles Dam the 2009 adult spring Chinook count is 1377 and at McNary Dam 258 adult spring Chinook have been counted.

The Bonneville Dam 2009 steelhead count of 1861 is about 1.18 times greater than the 2008 count of 1577. The 2009 steelhead count is about 98.3% of the 10-year average of 1893. At upriver sites, adult steelhead continue to move through the hydro system to reach their tributaries and spawning sites. The majority of these fish over-wintered in pools and will complete

their trip to their spawning grounds in March through early May. Daily adult steelhead counts at Lower Granite Dam ranged from 152 to 214 adults per day last week. This year's Lower Granite steelhead count of 9682 is 1.43 times greater than the 2008 count of 6768 and 1.32 times greater than the 10 year average of 7333. The 2009 wild steelhead count as of April 23rd was 2659. At Rock Island Dam, as of April 22<sup>nd</sup>, 37 adult steelhead have been counted and at Rocky Reach Dam, 189 adult steelhead have been counted so far this season. At Willamette Falls Dam, the 2009 count for steelhead was 2942, as of April 21st. This year's steelhead count is only about 61.9% of the 2008 count of 4751 at Willamette Falls Dam for the same date range.

Stansell et al. reported that as of April 17<sup>th</sup>, that as many as 24 California sea lions and 26 Steller sea lions have been counted at Bonneville Dam on a single day. The highest daily abundance of sea lions at Bonneville Dam occurred on April 11th when 43 sea lions were observed at the dam. There has been an increase in the number of California sea lions over the past few weeks. However, California sea lion numbers are lower when compared to recent years, while Steller sea lions numbers remain high. Sea lion trapping began on March 10th. To date, 7 animals have been euthanized, 4 have been relocated and 6 have been tagged and released. All of the 7 euthanized sea lions were infected with Gammaherpes virus and found to be unsuited for zoos or aquariums. The traps will continue to be used to mark sea lions not previously seen at the dam and to remove animals that meet the removal criteria granted to the states by NOAA Fisheries under Section 120 of the Marine Mammal Protection Act.

Stansell, Robert; Tackley, Sean; and Gibbons, Karrie. 2009. Status Report – Pinniped Predation and Deterrent Activities at Bonneville Dam, 2009. Fisheries Field Unit, US Army Corps of Engineers, Bonneville Lock and Dam, Cascade Locks, Oregon. Available online at <http://www.nwd-wc.usace.army.mil/tmt/documents/fish/2009/update20090417.pdf>.

#### **Smolt Monitoring:**

Relatively large numbers of yearling Chinook were captured at SMP traps while the traps were operating this week. But high flows have caused most of the traps to stop sampling either due to debris issues or in the case of the Lewiston Trap too many fish in the trap to safely handle. Yearling Chinook have predominated in the catch at the traps, with much lower



numbers of steelhead being captured. At the Lower Snake River dams, the opposite is the case, with those sites capturing three times as many steelhead as yearling Chinook. This is unusual in that typically yearling Chinook predominate in the Snake River until around May 1. However an early release of 1 million steelhead from Dworshak NF Hatchery has resulted in a large number of steelhead being collected at the Snake River sites. At Bonneville Dam large numbers of yearling Chinook passed this week from nearby releases at Carson NFH, Willard NFH, Klickitat NFH, and releases in the Hood River.

The Salmon River Trap has continued to capture large numbers of hatchery yearling Chinook over the past week as flows have increased. On April 22 the trap collected 1,707 yearling Chinook, over 90 percent were clipped fish. Flows on the Salmon River reached 33 Kcfs on April 24, which was more than double the historic median for this time period. Debris shut down the trap on April 21 when a large tree was wedged in the trap. But sampling resumed the next day. At the Imnaha River Trap diminishing numbers of yearling Chinook were collected over the last few days of sampling. The traps are not fishing the past few days due to high flows and debris in the river. Flows in the Imnaha River peaked a day earlier than the Salmon, with flows reaching 2,400 cfs on April 22; again well above the historic median for that data of 1,000 cfs as measured at the USGS Imnaha gage. The Grande Ronde Trap also had high flows and ODFW have pulled the trap out of the thalweg due to high debris concerns. When fishing, the Trap was collecting roughly equal numbers of yearling Chinook and steelhead over the previous week. The Lewiston Trap on the Snake River has been capturing large numbers of yearling Chinook and steelhead the past few days of sampling. On April 23 the trap collected 5,228 yearling Chinook and 666 steelhead. Flows in the Snake River as measured at the USGS gage near Anatone peaked at 90 Kcfs around midnight on April 23, well above historic median of 43 Kcfs.

Over the past week of sampling at Lower Granite Dam, hatchery origin steelhead have predominated. Steelhead indices reached as season high of 236,000 on April 23. The passage index for yearling Chinook has increased as well with the index at 63,000 on April 23.

At Rock Island dam small numbers of all species have been collected. Yearling Chinook have predominated the sample. McNary Dam began

sampling on April 9. The predominant salmonids in the sample at McNary Dam the past week were yearling Chinook, with the collection estimated at about 7,000 on April 23, while steelhead collection was at about 2,000 fish. Lamprey numbers in the sample decreased rapidly over the past two weeks of sampling, to the point where none have showed up in the past 3 days of sampling. At Bonneville Dam decreasing numbers of subyearling Chinook passed the project this week as the latest releases from Spring Creek and Little White National Fish Hatcheries passed the project. Peak passage appeared to have been on April 15 when the passage index was 870,000, with an estimated 314,000 fish passing through the bypass on that date. Small but steady numbers of Chinook fry have been captured in the sample. Yearling Chinook passage increased over the past week as nearby releases from Carson NFH, Willard NFH, Klickitat NFH, and releases in the Hood River passed the project. Smaller numbers of steelhead and coho and sockeye have also been captured at the site.

#### **Hatchery Release:**

**Snake River Zone:** The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. Two releases of yearling spring Chinook to the Tucannon River that began weeks ago were scheduled to end this week. In all, these two releases totaled approximately 114,000 juveniles, all of which were tagged with Elastomer tags (left eye blue or left eye purple). In addition, a release of 217,458 summer steelhead to the Salmon River that began last week was completed on April 21<sup>st</sup>. There were two other releases of summer steelhead scheduled to take place this week. These releases total about 337,000 juveniles, all of which were to be released into Squaw Creek, a tributary of the Clearwater River.

Two releases of subyearling fall Chinook to the Snake River (below Hells Canyon Dam) are scheduled to take place over the next two weeks. In all, these releases are expected to total nearly 963,000 juveniles. Beginning in late April to early May, about 790,000 coho juveniles will be released into tributaries of the Clearwater River. About 90% of these coho juveniles will be released unmarked (i.e., no clips, CWT, or Elastomer tags). Releases of sockeye juveniles to the Snake River zone are expected to begin over the next two weeks. In all, about 172,000 sockeye smolts will be released to this zone in 2009. Of these, 57% are

scheduled for direct release into the Salmon River and 43% are scheduled for release into Redfish Lake. Several releases of summer steelhead that began weeks ago are scheduled to end over the next two weeks. In all, these releases total just over 2.93 million juveniles. In addition to these earlier releases, about 874,000 summer steelhead juveniles are scheduled for release into this zone over the next two weeks. Of these, about 70% are scheduled for release into the Salmon River and its tributaries, 17% to the Imnaha River, and 13% to the Wallowa River.

**Mid-Columbia Zone:** The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. This week, nearly 500,000 subyearling fall Chinook juveniles were scheduled for release from Prosser Acclimation Facility into the Yakima River. The Yakama Tribal Program to re-establish Coho runs in the Yakima, Methow, and Wenatchee basins continued its releases this week. One release of 183,231 coho juveniles to the Wenatchee River was scheduled to take place this week. In addition, a release of just over 140,047 summer steelhead from Ringold Hatchery that began last week was completed on April 23<sup>rd</sup>. There were two other releases of summer steelhead juveniles scheduled to take place this week. The first of these two releases was a release of about 110,000 summer steelhead to the Methow River. The other releases was a release of 130,000 steelhead juveniles to the Okanogan River. There were no other releases of juvenile salmonids scheduled for this past week.

Approximately 1.2 million subyearling fall Chinook are scheduled for release into the Yakima River over the next two weeks. Several releases of yearling spring Chinook that began weeks ago are scheduled to end over the next two weeks. In all, these earlier releases total about 311,000 yearling spring Chinook, all of which were being released into the Methow River. In addition to these earlier releases to the Methow River, just over 2.0 million yearling spring Chinook are scheduled for release into the Wenatchee River over the next two weeks. Several releases of yearling summer Chinook that began several weeks ago are scheduled to end over the next two weeks. In all, these releases total about 1.52 million yearling summer Chinook. Of these, about 41% were scheduled for release into the Okanogan River, 30% to the Wenatchee River, and 29% to the Methow River. In addition to these earlier releases of summer Chinook juveniles, 61,000 yearling summer Chinook are scheduled for release into the

Mid-Columbia River, beginning on or around May 1<sup>st</sup>. As mentioned above, the Yakama Tribal Program to re-establish Coho runs in the Yakima, Methow, and Wenatchee river basins has already released many juveniles in 2009. In addition to the releases that have already occurred, several new releases of coho juveniles to the Wenatchee and Methow basins are expected to begin in early May. These new releases are expected total about 902,000 juveniles. Of these, about 84% are scheduled for release into the Wenatchee River, 11% to the Methow River, and 5% to the Mid-Columbia River. Finally, several earlier releases totaling about 245,000 summer steelhead are expected to end over the next two weeks. Beginning in late April to early May, approximately 212,000 summer steelhead will be released into the Methow River. There are no other scheduled releases of juvenile salmonids for this zone over the next two weeks.

**Lower Columbia Zone:** The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. A release of yearling spring Chinook to the Deschutes River that began weeks ago was scheduled to end this week. In all, this release totaled approximately 570,000 juveniles. In addition, a release of approximately 37,500 yearling spring Chinook to Hood River was scheduled to take place this week. Finally, about 150,000 summer steelhead were scheduled for release into the Umatilla River this week. These releases were originally scheduled to take place last week but were postponed until this week.

Approximately 4.6 million subyearling fall Chinook Tules are scheduled for release into this zone on May 3<sup>rd</sup>. All of these fall Chinook Tules will be released from Spring Creek NFH. A release of about 24,000 summer steelhead juveniles to the White Salmon River that began last week is scheduled to end next week. In addition to this earlier release, about 410,000 summer steelhead juveniles are scheduled for release over the next two weeks. Of these, about 85% are scheduled for release into the Deschutes River, 13% to the Klickitat River, and 3% to Hood River. Finally, a release of about 2,000 winter steelhead juveniles to the White Salmon River that began last week is scheduled to end next week. In addition to this earlier release, about 37,500 winter steelhead juveniles are scheduled for release into Hood River over the next two weeks.

**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
04/10/2009	110.0	0.0	102.2	0.0	105.5	0.0	107.6	0.0	109.0	0.0	104.3	0.0	108.3	0.0
04/11/2009	101.7	0.0	109.1	0.0	105.4	0.0	95.1	0.0	95.9	0.0	104.0	0.0	111.9	0.0
04/12/2009	99.8	0.0	95.7	0.0	113.5	8.1	120.3	0.0	124.0	0.0	123.9	0.0	106.0	0.0
04/13/2009	109.7	0.0	104.9	0.0	99.2	7.6	91.1	0.0	91.4	0.0	108.1	0.0	121.1	0.0
04/14/2009	130.7	0.0	131.5	0.0	137.6	15.1	130.0	0.0	129.2	0.0	124.5	3.2	111.9	0.0
04/15/2009	121.1	0.0	120.4	0.0	126.7	8.3	123.7	0.0	126.0	0.0	134.6	0.4	142.1	0.0
04/16/2009	123.3	0.0	133.2	0.0	140.2	8.7	133.3	0.0	130.4	0.0	129.6	0.0	131.4	0.0
04/17/2009	118.4	0.0	120.9	0.0	132.4	9.3	128.2	0.0	131.6	12.5	137.2	0.8	141.1	0.0
04/18/2009	124.5	0.0	114.3	0.0	133.4	9.5	136.1	2.2	138.8	11.4	140.6	1.5	138.0	0.0
04/19/2009	116.2	0.0	120.1	0.0	115.7	8.5	109.3	0.0	114.5	12.0	141.8	1.4	135.7	0.0
04/20/2009	125.7	0.0	132.3	0.0	131.2	9.3	123.1	0.2	123.8	13.7	121.2	0.0	125.9	0.0
04/21/2009	129.2	0.0	124.1	0.0	132.5	8.8	131.0	0.0	136.3	13.8	123.0	0.0	126.9	0.0
04/22/2009	128.7	0.0	126.2	0.0	127.4	8.7	122.2	0.1	129.6	13.8	139.0	1.5	130.6	0.0
04/23/2009	131.5	0.0	132.6	3.0	137.9	9.9	133.8	0.3	139.2	13.8	142.3	5.2	140.1	0.0

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

Date	Dworshak		Hells Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/10/2009	14.9	4.4	15.7	20.7	83.0	20.6	79.2	23.9	83.0	24.5	85.4	59.6
04/11/2009	14.4	4.3	16.6	19.0	80.4	20.3	78.3	23.5	82.5	27.0	83.9	58.8
04/12/2009	15.0	4.4	18.3	22.8	83.4	20.4	80.9	24.3	85.3	29.8	87.8	60.5
04/13/2009	14.9	4.3	19.3	24.4	88.0	20.3	84.5	25.3	87.6	30.8	88.4	62.3
04/14/2009	15.7	5.1	22.9	23.8	94.5	20.4	90.5	27.0	96.4	29.9	99.6	64.7
04/15/2009	16.9	6.3	22.5	21.7	89.9	20.5	88.3	26.5	93.7	29.5	96.3	62.2
04/16/2009	14.8	4.2	23.8	25.2	82.1	20.4	78.6	24.2	80.4	28.9	82.0	55.2
04/17/2009	14.8	4.2	24.0	26.0	82.5	20.5	79.9	23.9	84.2	29.0	87.1	60.1
04/18/2009	14.9	4.2	24.5	27.2	81.1	20.4	79.9	23.9	83.5	29.0	85.5	58.7
04/19/2009	14.8	4.1	28.0	29.5	83.6	20.5	79.9	23.8	81.7	29.0	82.1	59.1
04/20/2009	14.8	4.1	31.8	29.9	90.5	20.4	86.2	25.8	88.6	25.9	89.7	62.2
04/21/2009	14.8	4.1	31.6	32.8	103.8	20.5	100.8	30.1	104.1	24.0	108.3	67.8
04/22/2009	14.9	4.2	32.5	36.2	122.7	22.3	114.4	31.5	119.6	24.0	121.3	67.5
04/23/2009	14.9	4.2	---	---	140.7	33.0	134.4	45.8	138.8	24.2	142.7	78.4

**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
04/10/2009	205.4	82.4	214.2	64.3	212.0	84.7	215.9	100.5	13.7	90.3
04/11/2009	207.0	83.0	210.4	63.0	202.3	81.2	229.6	101.6	27.2	89.3
04/12/2009	223.5	89.6	231.2	69.4	221.8	88.9	245.6	100.9	45.7	87.6
04/13/2009	213.2	85.6	204.3	61.5	193.9	77.8	227.4	100.1	28.0	87.9
04/14/2009	243.8	97.5	256.7	77.2	249.7	99.8	254.5	99.4	48.0	95.7
04/15/2009	246.0	98.4	251.3	75.5	248.7	99.2	265.0	100.2	61.3	92.0
04/16/2009	223.4	89.6	226.0	68.2	217.8	87.0	236.8	100.0	38.6	86.8
04/17/2009	242.2	97.0	240.0	72.2	233.8	93.3	253.4	99.7	48.0	94.3
04/18/2009	235.9	94.3	234.3	70.2	227.7	91.3	244.3	99.8	35.3	97.9
04/19/2009	233.4	93.6	218.5	65.6	207.7	83.5	229.5	99.5	22.0	96.5
04/20/2009	229.3	92.0	239.7	71.6	235.9	94.0	245.1	96.3	40.3	97.1
04/21/2009	247.9	99.4	243.9	73.0	231.0	92.5	251.7	94.5	52.4	93.4
04/22/2009	252.8	101.2	248.3	74.4	240.1	91.2	269.6	91.4	67.1	99.6
04/23/2009	285.0	124.0	299.5	89.6	288.9	98.2	282.6	90.1	69.0	112.1

## 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>											
	04/13/09	Chinook + Steelhead	57	0	0	0.00%	0.00%	0	0	0	0
	04/20/09	Chinook + Steelhead	98	0	0	0.00%	0.00%	0	0	0	0
<b>Little Goose Dam</b>											
	04/20/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	04/14/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	04/12/09	Chinook + Steelhead	74	0	0	0.00%	0.00%	0	0	0	0
	04/16/09	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	04/20/09	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	04/12/09	Chinook + Steelhead	87	0	0	0.00%	0.00%	0	0	0	0
	04/14/09	Chinook + Steelhead	5	0	0	0.00%	0.00%	0	0	0	0
	04/19/09	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0
	04/21/09	Chinook + Steelhead	92	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	04/23/09	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0



### Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	4/10/2009		to		04/23/09				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Colville Tribe	Cassimer Bar Hatchery	ST	SU	2009	2,000	04-15-09	04-30-09	Okanogan River	Okanogan River
Colville Tribe	Cassimer Bar Hatchery	ST	SU	2009	14,000	04-15-09	04-30-09	Omak Creek Bonaparte Acclimation Pond	Okanogan River
Colville Tribe	Eastbank Hatchery	CH1	SU	2009	100,000	04-15-09	04-30-09		Okanogan River
<b>Colville Tribe Total</b>					<b>116,000</b>				
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2009	333,914	03-15-09	04-15-09	Lochsa River	Clearwater River M F
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2009	404,155	03-15-09	04-15-09	Lochsa River	Clearwater River M F
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2009	404,989	03-15-09	04-15-09	Red River	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2009	703,326	03-15-09	04-15-09	Crooked River	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2009	100,686	04-01-09	04-30-09	Red River	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2009	165,457	04-01-09	04-30-09	Crooked River	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2009	264,219	04-01-09	04-30-09	S Fk Clearwater River Squaw Creek	Clearwater River M F
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	57,000	04-20-09	04-24-09	(Clearwater)	Clearwater River M F
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	62,192	04-16-09	04-17-09	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	124,885	04-13-09	04-14-09	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	125,167	04-14-09	04-16-09	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	217,458	04-17-09	04-21-09	East Fk Salmon River Squaw Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	280,000	04-20-09	04-24-09	(Clearwater)	Clearwater River M F
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2009	170,000	04-01-09	05-01-09	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2009	830,000	04-09-09	04-28-09	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2009	274,644	04-14-09	04-14-09	Salmon River (ID)	Salmon River (ID)
<b>Idaho Dept. of Fish and Game Total</b>					<b>4,518,092</b>				
Nez Perce Tribe	Clearwater Hatchery	CH1	SP	2009	399,953	03-15-09	04-15-09	Selway River	Clearwater River M F
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	25,360	04-01-09	04-30-09	Meadow Creek - CLES	S Fk Clearwater River
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	25,360	04-01-09	04-30-09	Mill Cr Bridge	S Fk Clearwater River
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	50,271	04-01-09	04-30-09	Lolo Creek	Clearwater River M F
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	73,324	04-01-09	04-30-09	Crooked River	S Fk Clearwater River
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	131,939	04-01-09	04-30-09	Red River	S Fk Clearwater River
Nez Perce Tribe	Dworshak NFH	ST	SU	2009	115,000	04-13-09	04-17-09	American River	S Fk Clearwater River
Nez Perce Tribe	Dworshak NFH	ST	SU	2009	115,000	04-13-09	04-17-09	Newsome Creek	S Fk Clearwater River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2009	142,000	04-03-09	04-15-09	Cpt John Acclim Pond Pittsburg Landing	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2009	150,000	04-14-09	04-15-09	Acclim Pond Big Canyon (Clearwater River)	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2009	150,000	04-15-09	04-15-09	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2009	133,000	04-01-09	04-15-09	Big Canyon Acclim.Pd (Grande Ronde)	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>1,511,207</b>				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2009	156,000	04-17-09	04-17-09	(Grande Ronde)	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2009	258,000	04-14-09	04-14-09	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2009	150,000	04-01-09	04-14-09	Lookingglass Creek	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2009	294,500	03-31-09	04-15-09	Imnaha Acclim Pond	Imnaha River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2009	213,776	04-15-09	04-15-09	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	ST	SU	2009	50,000	04-20-09	04-24-09	Meacham Creek	Umatilla River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>1,122,276</b>				
U.S. Fish and Wildlife Service	Carson NFH	CH1	SP	2009	1,218,277	04-15-09	04-15-09	Wind River Redhouse (SFk ClearH2O R)	Wind River
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2009	225,000	04-13-09	04-17-09	Clear Creek	S Fk Clearwater River
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2009	300,000	04-13-09	04-17-09	Clear Creek	Clearwater River M F
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2009	1,000,000	04-14-09	04-17-09	Dworshak Hatchery	Clearwater River M F
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2009	766,000	04-13-09	05-01-09	Salmon River (ID) Little White Salmon Hatchery	Salmon River (ID)
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2009	1,700,000	04-13-09	04-17-09	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH1	SP	2009	585,000	04-16-09	04-16-09	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2009	6,479,326	04-13-09	04-13-09	Spring Creek Hatchery	L Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2009	570,000	03-20-09	04-20-09	Warm Springs Hatchery Little White Salmon Hatchery	Deschutes River Little White Salmon River
U.S. Fish and Wildlife Service	Willard Hatchery	CH1	SP	2009	420,000	04-16-09	04-16-09	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2009	80,000	04-15-09	04-15-09	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2009	340,000	04-15-09	04-15-09	Winthrop Hatchery	Methow River
<b>U.S. Fish and Wildlife Service Total</b>					<b>13,683,603</b>				



**Hatchery Releases Last Two Weeks - Continued**

Umatilla Tribe	Cascade Hatchery	CO	UN	2009	500,000	04-05-09	04-11-09	Pendelton Acclim Pond Catherine Cr Acclim Pond	Umatilla River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2009	23,000	04-13-09	04-13-09	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2009	26,000	04-13-09	04-13-09	Grande Ronde Acclim Catherine Cr Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2009	116,000	04-13-09	04-13-09	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2009	121,000	04-13-09	04-13-09	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2009	439,000	03-02-09	04-16-09	Imeques Acclim Pond Minthorn Acclimation Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	ST	SU	2009	50,000	04-20-09	04-24-09	Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	ST	SU	2009	50,000	04-20-09	04-24-09	Pendelton Acclim Pond	Umatilla River
<b>Umatilla Tribe Total</b>					<b>1,325,000</b>				
Warm Springs Tribe	Oak Springs Hatchery	ST	SU	2009	20,000	04-16-09	04-16-09	Blackberry Acclim Pond	Hood River
<b>Warm Springs Tribe Total</b>					<b>20,000</b>				
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2009	462,000	04-15-09	04-30-09	Dryden Acclim Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2009	520,000	04-15-09	05-07-09	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2009	447,500	04-01-09	04-15-09	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	44,000	04-15-09	04-30-09	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	60,000	04-15-09	04-30-09	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	85,000	04-15-09	04-30-09	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	100,000	04-15-09	04-30-09	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	100,000	04-15-09	04-30-09	Walla Walla River Cottonwood Acclim Pond	Walla Walla River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	168,000	04-01-09	04-30-09	Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2009	58,000	04-15-09	04-30-09	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2009	122,000	04-15-09	04-30-09	Methow River	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2009	131,000	04-15-09	04-30-09	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2009	434,000	04-15-09	04-30-09	Carlton Acclim Pond Ringold Springs Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2009	140,047	04-14-09	04-23-09	Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2009	24,000	04-15-09	05-01-09	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2009	20,000	04-15-09	05-01-09	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2009	55,000	04-01-09	04-21-09	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2009	59,000	04-01-09	04-21-09	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH1	SU	2009	116,000	04-15-09	05-15-09	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	11,000	04-15-09	05-15-09	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	30,500	04-15-09	05-15-09	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	50,000	04-15-09	05-15-09	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	50,500	04-15-09	05-15-09	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	68,000	04-15-09	05-15-09	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	117,000	04-15-09	05-15-09	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2009	2,500,000	04-01-09	04-15-09	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2009	318,000	04-13-09	05-15-09	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2009	110,000	04-20-09	05-31-09	Methow River	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2009	110,000	04-20-09	05-31-09	Twisp River	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2009	130,000	04-20-09	05-31-09	Okanogan River	Okanogan River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>6,640,547</b>				

**Hatchery Releases Last Two Weeks - Continued**

Yakama Tribe	Cascade Hatchery	CO	UN	2009	38,869	04-01-09	04-15-09	Nason Creek Jack Creek Acclim	Wenatchee River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2009	251,067	03-16-09	05-15-09	Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2009	254,889	03-16-09	05-15-09	Easton Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2009	266,044	03-16-09	05-15-09	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	50,000	04-06-09	05-15-09	Boone Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	72,000	04-06-09	05-15-09	Easton Pond Lost Creek Acclim	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	97,000	04-06-09	05-15-09	Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	150,000	04-06-09	05-15-09	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	170,000	04-06-09	05-15-09	Stiles Pond	Yakima River
Yakama Tribe	Entiat Hatchery	CO	UN	2009	183,231	04-20-09	04-20-09	Icicle Creek	Wenatchee River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2009	289,689	04-15-09	04-15-09	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	37,659	04-06-09	05-15-09	Easton Pond Lost Creek Acclim	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	68,473	04-06-09	05-15-09	Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	73,217	04-06-09	05-15-09	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	74,124	04-06-09	05-15-09	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	109,549	04-06-09	05-15-09	Prosser Acclim Pond	Yakima River
Yakama Tribe	Washougal Hatchery	CO	UN	2009	120,000	04-06-09	05-15-09	Prosser Acclim Pond	Yakima River
Yakama Tribe	Winthrop NFH	CO	UN	2009	286,213	04-15-09	04-30-09	Winthrop Hatchery	Methow River
<b>Yakama Tribe Total</b>					<b>2,592,024</b>				
<b>Grand Total</b>					<b>31,528,749</b>				

## Hatchery Releases Next Two Weeks

Hatchery Release Summary										
From:	4/24/2009		to		5/7/2009					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	
Colville Tribe	Cassimer Bar Hatchery	ST	SU	2009	2,000	04-15-09	04-30-09	Okanogan River	Okanogan River	
Colville Tribe	Cassimer Bar Hatchery	ST	SU	2009	14,000	04-15-09	04-30-09	Omak Creek Bonaparte Acclimation Pond	Okanogan River	
Colville Tribe	Eastbank Hatchery	CH1	SU	2009	100,000	04-15-09	04-30-09		Okanogan River	
<b>Colville Tribe Total</b>					<b>116,000</b>					
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2009	100,686	04-01-09	04-30-09	Red River	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2009	165,457	04-01-09	04-30-09	Crooked River	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2009	264,219	04-01-09	04-30-09	S Fk Clearwater River	Clearwater River M F	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	31,000	04-27-09	04-29-09	Yankee Fk (Salmon R)	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	31,000	04-30-09	04-30-09	Slate Creek Squaw Creek (Clearwater)	Salmon River (ID) Clearwater River M F	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	57,000	04-20-09	04-24-09	(Clearwater)	Clearwater River M F	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	60,000	04-30-09	04-30-09	Slate Creek	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	62,000	04-27-09	04-29-09	Salmon River (ID)	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	62,000	04-27-09	04-29-09	Yankee Fk (Salmon R)	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	68,000	04-27-09	04-30-09	East Fk Salmon River Squaw Creek (Clearwater)	Salmon River (ID) Clearwater River M F	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2009	280,000	04-20-09	04-24-09	(Clearwater)	Clearwater River M F	
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2009	170,000	04-01-09	05-01-09	Little Salmon River	Salmon River (ID)	
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2009	830,000	04-09-09	04-28-09	Pahsimeroi River	Pahsimeroi River	
Idaho Dept. of Fish and Game	Oxbow-Idaho	CH0	FA	2009	192,471	05-06-09	05-06-09	Hells Canyon Dam	Snake River	
Idaho Dept. of Fish and Game	Oxbow-Oregon	SO	UN	2009	74,000	05-01-09	05-01-09	Redfish Lake	Salmon River (ID)	
Idaho Dept. of Fish and Game	Sawtooth Hatchery	SO	UN	2009	98,000	05-01-09	05-01-09	Salmon River (ID)	Salmon River (ID)	
<b>Idaho Dept. of Fish and Game Total</b>					<b>2,545,833</b>					
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	25,360	04-01-09	04-30-09	Meadow Creek - CLES	S Fk Clearwater River	
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	25,360	04-01-09	04-30-09	Mill Cr Bridge	S Fk Clearwater River	
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	50,271	04-01-09	04-30-09	Lolo Creek	Clearwater River M F	
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	73,324	04-01-09	04-30-09	Crooked River	S Fk Clearwater River	
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2009	131,939	04-01-09	04-30-09	Red River	S Fk Clearwater River	
Nez Perce Tribe	Dworshak NFH	CO	UN	2009	230,000	04-30-09	04-30-09	Clear Creek	Clearwater River M F	
Nez Perce Tribe	Dworshak NFH	CO	UN	2010	60,000	05-01-09	05-31-09	Lapwai Creek	Clearwater River M F	
Nez Perce Tribe	Dworshak NFH	CO	UN	2010	500,000	05-01-09	05-31-09	Clear Creek	Clearwater River M F	
Nez Perce Tribe	Nez Perce Tribal Hatchery	CO	UN	2010	50,000	04-01-09	04-30-09	Orofino Creek	Clearwater River M F	
<b>Nez Perce Tribe Total</b>					<b>1,146,254</b>					
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2009	112,000	05-07-09	05-07-09	Wallowa Acclim Pond	Wallowa River	
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2009	146,000	04-28-09	04-28-09	Little Sheep Creek	Imnaha River	
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2010	300,000	05-01-09	05-01-09	Deschutes River	Deschutes River	
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2010	300,000	05-01-09	05-01-09	Deschutes River	Deschutes River	
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	CH0	FA	2009	770,350	05-07-09	05-10-09	Hells Canyon Dam	Snake River	
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	ST	SU	2009	50,000	04-20-09	04-24-09	Meacham Creek	Umatilla River	
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>1,678,350</b>					
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2009	150,000	05-01-09	05-11-09	Yankee Fk (Salmon R)	Salmon River (ID)	
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2009	152,000	05-01-09	05-11-09	Yankee Fk (Salmon R)	Salmon River (ID)	
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2009	766,000	04-13-09	05-01-09	Salmon River (ID)	Salmon River (ID)	
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2009	1,625,000	04-30-09	04-30-09	Icicle Creek	Wenatchee River	
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2009	4,600,000	05-03-09	05-04-09	Spring Creek Hatchery	L Col R (D/s McN Dam)	
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2009	102,000	04-30-09	04-30-09	Winthrop Hatchery	Methow River	
<b>U.S. Fish and Wildlife Service Total</b>					<b>7,395,000</b>					

**Hatchery Releases Next Two Weeks - Continued**

Umatilla Tribe	Umatilla Hatchery	ST	SU	2009	50,000	04-20-09	04-24-09	Minthorn Acclimation Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	ST	SU	2009	50,000	04-20-09	04-24-09	Pendelton Acclim Pond	Umatilla River
<b>Umatilla Tribe Total</b>					<b>100,000</b>				
Warm Springs Tribe	Oak Springs Hatchery	ST	SU	2009	20,000	05-02-09	05-02-09	Blackberry Acclim Pond	Hood River
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2009	12,500	04-30-09	04-30-09	Parkdale Acclim Pond E Fk Irrig Dist Sand	Hood River
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2009	25,000	04-30-09	04-30-09	Trap	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2009	37,500	04-24-09	04-24-09	W Fk Hood River	Hood River
<b>Warm Springs Tribe Total</b>					<b>95,000</b>				
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2009	296,000	05-01-09	05-15-09	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2009	140,000	05-01-09	05-31-09	Lake Wenatchee	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2009	462,000	04-15-09	04-30-09	Dryden Acclim Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2009	520,000	04-15-09	05-07-09	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	44,000	04-15-09	04-30-09	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	60,000	04-15-09	04-30-09	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	85,000	04-15-09	04-30-09	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	100,000	04-15-09	04-30-09	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	100,000	04-15-09	04-30-09	Walla Walla River Cottonwood Acclim	Walla Walla River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2009	168,000	04-01-09	04-30-09	Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2009	58,000	04-15-09	04-30-09	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2009	122,000	04-15-09	04-30-09	Methow River	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2009	131,000	04-15-09	04-30-09	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2009	434,000	04-15-09	04-30-09	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2009	24,000	04-15-09	05-01-09	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2009	90,000	05-01-09	05-15-09	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2009	20,000	04-15-09	05-01-09	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH1	SU	2009	61,000	05-01-09	05-15-09	Turtle Rock Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH1	SU	2009	116,000	04-15-09	05-15-09	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	11,000	04-15-09	05-15-09	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	30,500	04-15-09	05-15-09	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	50,000	04-15-09	05-15-09	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	50,500	04-15-09	05-15-09	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	68,000	04-15-09	05-15-09	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2009	117,000	04-15-09	05-15-09	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2009	318,000	04-13-09	05-15-09	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2009	110,000	04-20-09	05-31-09	Methow River	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2009	110,000	04-20-09	05-31-09	Twisp River	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2009	110,000	05-01-09	05-31-09	Chewuch River	Methow River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2009	130,000	04-20-09	05-31-09	Okanogan River	Okanogan River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>4,136,000</b>				



Hatchery Releases Next Two Weeks - Continued

Yakama Tribe	Cascade Hatchery	CO	UN	2009	64,590	05-01-09	05-15-09	Wenatchee River	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2009	77,658	05-01-09	05-15-09	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2009	77,734	05-01-09	05-15-09	Coulter Creek Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2009	116,624	05-01-09	05-15-09	Jack Creek Acclim Pond	Wenatchee River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2009	251,067	03-16-09	05-15-09	Easton Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2009	254,889	03-16-09	05-15-09	Easton Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2009	266,044	03-16-09	05-15-09	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	50,000	04-06-09	05-15-09	Boone Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	72,000	04-06-09	05-15-09	Easton Pond Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	97,000	04-06-09	05-15-09	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2009	150,000	04-06-09	05-15-09	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2009	500,000	04-24-09	04-24-09	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2009	1,200,000	04-30-09	04-30-09	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	37,659	04-06-09	05-15-09	Easton Pond Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	68,473	04-06-09	05-15-09	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	73,217	04-06-09	05-15-09	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	74,124	04-06-09	05-15-09	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2009	109,549	04-06-09	05-15-09	Prosser Acclim Pond	Yakima River
Yakama Tribe	Washougal Hatchery	CO	UN	2009	120,000	04-06-09	05-15-09	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2009	19,352	05-01-09	05-15-09	Wenatchee River Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2009	21,388	05-01-09	05-15-09	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2009	26,782	05-01-09	05-15-09	Wells Hatchery	Mid-Columbia River
Yakama Tribe	Willard Hatchery	CO	UN	2009	46,666	05-01-09	05-15-09	Winthrop Hatchery	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2009	48,664	05-01-09	05-15-09	Icicle Creek	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2009	352,140	05-04-09	05-04-09	Twisp Acclim Pond	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2009	50,445	05-01-09	05-15-09	Winthrop Hatchery	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2009	286,213	04-15-09	04-30-09	Winthrop Hatchery	Methow River
<b>Yakama Tribe Total</b>					<b>4,682,278</b>				
<b>Grand Total</b>					<b>21,894,715</b>				

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

## 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**

	<u>Hungry H. Dnst</u>			#	<u>Boundary</u>			#	<u>Grand Coulee</u>			#	<u>Grand C. Tlwr</u>			#	<u>Chief Joseph</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
4/10	100	101	102	24	105	106	107	24	105	106	106	24	103	104	105	24	106	106	107	24
4/11	100	101	102	24	105	105	106	24	105	106	106	24	103	105	106	24	105	105	106	24
4/12	100	100	101	24	105	105	105	24	105	105	105	24	104	106	106	24	105	105	105	24
4/13	100	101	101	24	105	106	106	24	105	105	106	24	106	106	107	24	105	105	105	24
4/14	100	101	102	24	106	107	107	24	105	105	106	24	106	106	107	24	105	105	105	24
4/15	100	100	101	24	106	106	107	23	105	106	107	24	106	106	106	23	105	105	105	24
4/16	100	100	101	24	105	106	106	23	105	106	106	24	106	106	106	23	104	104	104	24
4/17	100	101	102	24	105	105	106	21	105	106	106	24	106	106	107	21	104	104	104	24
4/18	100	100	101	24	105	106	107	24	105	107	107	24	105	106	106	24	104	104	105	24
4/19	100	100	102	24	106	106	107	22	106	106	107	24	106	106	107	22	104	105	105	24
4/20	100	101	101	24	107	108	112	24	107	108	109	24	106	107	107	24	105	105	105	24
4/21	100	101	102	24	114	120	120	23	109	110	111	24	107	108	108	23	106	106	106	24
4/22	101	101	102	24	115	121	121	24	108	108	108	24	108	109	109	24	107	107	107	24
4/23	100	100	101	24	108	110	111	24	107	108	108	24	106	108	109	24	106	106	107	24

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

<u>Date</u>	<u>Chief J. Dnst</u>			#	<u>Wells</u>			#	<u>Wells Dwnstrm</u>			#	<u>Rocky Reach</u>			#	<u>Rocky R. Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
4/10	106	106	107	24	107	108	109	24	107	108	109	24	107	107	107	24	105	105	105	24
4/11	105	105	106	24	107	108	108	24	106	107	108	24	107	107	107	24	104	105	105	24
4/12	104	105	106	24	107	107	107	24	105	105	105	24	107	107	107	24	104	105	105	24
4/13	104	105	106	24	106	107	108	24	104	105	105	24	107	107	107	24	104	105	105	24
4/14	104	104	104	24	108	109	114	24	104	104	105	24	107	107	107	24	105	105	105	24
4/15	104	105	106	24	106	107	108	24	104	104	105	24	106	107	107	24	104	104	105	24
4/16	103	104	105	24	107	107	108	24	104	105	105	24	107	108	108	24	104	105	106	24
4/17	103	104	105	24	106	106	107	24	104	104	105	24	107	107	107	24	105	105	106	24
4/18	103	104	105	24	105	106	107	24	104	104	105	24	106	106	107	24	105	105	106	24
4/19	104	105	106	24	106	107	108	24	104	105	106	24	106	106	107	24	104	105	105	24
4/20	104	104	105	24	107	108	109	23	105	106	106	23	107	107	108	24	105	106	106	24
4/21	105	106	106	24	107	108	109	24	107	109	109	24	108	109	109	24	106	107	107	24
4/22	106	107	107	24	106	107	107	24	108	109	109	24	109	109	110	24	107	107	107	24
4/23	106	106	108	24	105	106	106	24	108	108	109	24	108	108	109	24	106	106	107	24

**Total Dissolved Gas Saturation at Mid Columbia River Sites**

<u>Date</u>	<u>Rock Island</u>			#	<u>Rock I. Tlwr</u>			#	<u>Wanapum</u>			#	<u>Wanapum Tlwr</u>			#	<u>Priest Rapids</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
4/10	107	107	108	24	107	107	107	24	106	106	108	24	106	106	106	24	106	106	107	24
4/11	106	106	107	24	106	106	107	24	105	105	106	24	106	106	106	24	105	106	106	24
4/12	106	107	107	24	106	107	107	24	105	105	105	24	105	106	106	24	105	105	105	24
4/13	107	107	107	24	107	107	107	24	104	104	105	24	105	105	106	24	104	105	105	24
4/14	106	107	107	24	106	107	107	24	104	104	104	24	105	105	105	24	104	104	106	24
4/15	106	107	107	24	106	107	107	24	104	104	105	24	105	105	106	24	104	104	105	24
4/16	107	108	109	24	107	108	109	24	104	104	105	24	104	105	105	24	104	105	105	24
4/17	107	107	108	24	109	110	111	24	104	104	105	24	105	105	106	24	105	105	105	11
4/18	107	108	108	24	109	110	111	24	104	104	105	24	105	106	107	24	---	---	---	0
4/19	106	107	107	24	109	110	110	24	104	104	104	2	107	107	107	2	---	---	---	0
4/20	107	108	108	24	109	110	112	24	108	111	112	22	109	110	110	22	111	111	113	12
4/21	108	109	109	24	110	111	111	24	110	111	112	24	110	110	111	24	110	111	113	24
4/22	109	109	109	24	111	112	113	24	110	110	110	24	110	111	114	24	110	111	111	24
4/23	108	108	109	24	110	111	112	24	---	---	---	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>Clwrtr-Peck</u>			<u>Anatone</u>							
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>				
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
4/10	106	107	107	24	106	106	107	24	108	109	109	24	104	104	105	24	102	102	103	24
4/11	106	106	107	24	105	105	106	24	108	109	114	24	103	103	105	24	101	101	102	24
4/12	106	106	106	24	104	105	105	24	108	108	108	24	103	104	105	24	101	102	103	24
4/13	105	106	106	24	104	104	104	24	108	108	108	24	103	103	104	24	102	102	103	24
4/14	105	105	105	24	104	105	105	24	109	111	112	24	103	104	105	24	101	102	102	24
4/15	104	105	105	24	104	105	107	24	112	112	112	24	104	105	105	24	101	102	102	24
4/16	105	105	105	24	104	105	106	24	106	106	106	24	103	103	104	24	101	102	103	24
4/17	105	105	106	24	104	105	105	24	105	105	106	24	102	103	103	24	102	102	103	24
4/18	105	105	106	24	105	106	106	24	105	106	106	24	103	104	104	24	102	103	104	24
4/19	106	106	106	2	105	106	107	24	105	105	106	24	103	103	104	24	102	103	103	24
4/20	108	109	109	22	107	108	108	24	105	106	106	24	103	104	104	24	102	103	104	24
4/21	109	110	110	24	108	109	110	24	106	106	107	24	103	104	104	24	103	104	104	24
4/22	110	110	110	24	109	109	110	24	107	108	109	24	103	104	105	24	103	104	105	24
4/23	---	---	---	0	106	107	108	24	107	107	108	24	103	103	104	24	107	110	144	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clwrtr-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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>				
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
4/10	102	104	104	24	103	103	104	24	109	109	109	24	109	110	110	24	113	113	113	24
4/11	101	102	102	24	102	102	102	24	109	109	109	24	109	109	109	24	112	113	113	24
4/12	102	103	104	24	101	102	103	24	108	109	109	24	108	108	108	24	112	112	113	24
4/13	102	103	104	24	102	102	102	24	109	109	109	24	107	107	108	24	112	113	114	24
4/14	102	102	103	24	102	102	103	24	109	109	109	24	107	107	108	24	113	113	113	24
4/15	103	103	104	24	102	102	103	24	109	109	109	24	109	110	112	24	113	113	113	24
4/16	102	103	104	24	101	101	101	24	108	109	109	24	117	119	121	24	112	113	114	24
4/17	102	102	103	24	101	101	102	24	108	108	109	24	114	122	126	24	112	112	112	24
4/18	102	104	105	24	101	102	102	24	108	109	109	24	106	107	107	24	112	112	112	24
4/19	102	103	105	24	102	102	103	24	109	109	109	24	108	108	108	24	112	112	113	24
4/20	103	104	105	24	103	103	104	24	109	109	110	24	109	109	110	24	113	114	114	24
4/21	103	104	105	24	104	105	105	24	110	110	111	24	110	111	112	24	114	114	114	24
4/22	102	103	104	24	105	105	105	24	111	112	114	24	111	112	112	24	114	114	115	24
4/23	102	102	103	24	103	104	104	24	115	115	117	24	109	110	111	24	117	117	117	24

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>							
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>				
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
4/10	112	112	112	24	116	117	119	24	114	115	115	24	116	116	117	24	---	---	---	0
4/11	111	112	112	24	119	119	119	24	113	114	115	24	116	116	116	24	---	---	---	0
4/12	111	111	111	24	120	121	121	24	113	113	113	24	116	116	117	24	---	---	---	0
4/13	111	111	111	24	120	121	121	24	113	113	113	24	116	117	119	24	---	---	---	0
4/14	111	111	111	24	120	120	120	23	112	113	113	24	117	118	120	24	---	---	---	0
4/15	111	111	112	24	120	120	120	24	113	113	113	24	117	117	120	24	---	---	---	0
4/16	111	111	112	24	119	120	120	24	113	113	113	24	116	116	116	24	---	---	---	0
4/17	112	112	112	24	120	120	120	24	114	114	114	24	116	116	117	24	---	---	---	0
4/18	111	111	112	24	119	120	120	24	114	114	114	24	116	116	117	24	---	---	---	0
4/19	112	112	112	24	120	120	120	24	115	115	115	24	116	116	117	24	---	---	---	0
4/20	113	113	113	24	117	119	120	24	116	116	116	24	117	117	118	24	---	---	---	0
4/21	114	114	115	24	115	116	117	24	117	117	117	24	119	120	121	24	---	---	---	0
4/22	115	116	116	24	116	117	118	24	116	117	117	24	119	121	121	24	---	---	---	0
4/23	113	114	114	24	117	117	118	24	115	115	115	24	120	121	121	24	---	---	---	0

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

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

Date	<u>McNary-Wash</u>			<u>McNary Tlwr</u>			<u>John Day</u>			<u>John Day Tlwr</u>			<u>The Dalles</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>AVG</u>	<u>High</u>	<u>#</u>	
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr
4/10	108	108	109	24	115	115	116	24	103	104	104	24	113	116	118	24	104	105	107	24
4/11	108	108	108	24	115	115	115	24	103	103	104	24	113	113	113	24	107	108	108	24
4/12	106	107	107	24	115	115	116	24	103	104	104	24	113	114	114	24	108	108	109	24
4/13	106	106	106	24	114	115	116	24	104	104	104	24	112	113	114	24	108	108	109	24
4/14	105	105	106	24	115	116	116	24	104	104	105	24	114	114	115	24	107	107	108	24
4/15	105	105	106	24	115	116	116	24	105	105	105	24	114	114	114	24	108	108	108	24
4/16	106	106	107	24	115	115	116	24	105	106	106	24	114	115	115	24	108	108	109	24
4/17	107	107	108	24	115	116	117	24	105	106	106	24	114	115	115	24	109	109	110	24
4/18	107	108	109	24	115	115	117	24	105	106	107	24	114	114	115	24	109	109	110	24
4/19	108	109	109	24	115	115	116	24	107	108	109	24	114	114	114	24	110	110	111	24
4/20	110	110	111	24	115	116	117	24	109	110	111	24	115	115	115	24	111	112	113	24
4/21	111	111	112	24	116	116	117	24	112	112	112	24	115	115	116	24	113	113	114	24
4/22	113	113	113	24	116	117	117	24	112	113	113	24	115	116	116	24	112	113	114	24
4/23	111	111	112	24	118	119	119	24	111	111	112	24	116	116	117	24	110	111	111	24

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

Date	<u>The Dalles Dnst</u>			<u>Bonneville</u>			<u>Warrendale</u>			<u>CamasWashougal</u>			<u>Cascade Island</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>High</u>	<u>#</u>	
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
4/10	110	111	112	24	104	104	104	24	112	113	113	24	107	109	111	24	117	118	118	24
4/11	113	113	114	24	105	107	108	24	112	113	113	24	109	109	110	24	118	118	118	24
4/12	114	114	115	24	110	111	112	24	114	114	114	24	110	111	112	24	119	119	120	24
4/13	113	113	114	24	111	111	111	24	114	114	115	24	111	112	112	24	118	118	119	24
4/14	113	114	114	24	110	111	111	24	114	114	115	24	111	112	113	24	119	119	120	24
4/15	114	114	115	24	110	110	110	24	113	113	114	24	111	112	113	24	119	120	120	24
4/16	114	114	115	24	110	111	112	24	114	114	115	15	112	114	115	24	118	119	119	24
4/17	115	115	116	24	112	112	112	24	---	---	---	0	113	113	114	24	119	119	120	24
4/18	115	115	116	24	112	113	113	24	---	---	---	0	113	114	114	24	118	119	119	24
4/19	115	115	115	24	114	115	115	24	---	---	---	0	114	115	116	24	118	118	119	24
4/20	116	117	118	24	115	115	116	24	---	---	---	0	115	117	118	24	118	119	119	24
4/21	116	117	117	24	115	115	116	24	---	---	---	0	116	116	117	24	118	119	119	24
4/22	116	117	117	24	114	115	116	24	---	---	---	0	114	115	115	24	118	119	119	24
4/23	114	115	115	24	111	111	112	24	---	---	---	0	112	112	113	24	118	119	120	24



Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/10/2009 *	825	2,631	159	215	8,126	897	1,058	1	---	464	591
04/11/2009	965	1,937	183	102	10,028	2,668	54	0	878	587	871
04/12/2009 *	2,233	1,388	217	139	15,387	4,629	578	0	---	967	954
04/13/2009 *	1,797	1,017	444	211	17,262	5,039	462	0	1,453	1,646	1,755
04/14/2009 *	2,623	1,463	358	402	13,146	9,787	915	3	---	1,498	5,904
04/15/2009 *	4,267	2,362	2,830	155	13,685	12,378	278	4	5,118	2,336	16,005
04/16/2009 *	2,244	1,873	518	85	19,161	11,381	400	4	---	2,144	26,211
04/17/2009	1,398	1,272	530	48	16,012	8,983	316	10	7,235	3,093	22,003
04/18/2009 *	859	571	303	41	25,259	9,507	259	70	---	2,532	24,864
04/19/2009 *	426	281	260	79	26,473	12,393	320	39	10,116	3,454	19,194
04/20/2009 *	914	263	376	125	36,834	20,934	316	42	---	3,984	20,258
04/21/2009 *	---	0	296	205	37,558	18,592	245	44	12,252	5,385	19,549
04/22/2009 *	1,707	0	266	4,339	42,202	33,464	99	40	---	5,760	23,062
04/23/2009 *	518	0	---	5,228	63,401	53,715	152	79	23,139	6,782	26,706
04/24/2009	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>20,776</b>	<b>15,058</b>	<b>6,740</b>	<b>11,374</b>	<b>344,534</b>	<b>204,367</b>	<b>5,452</b>	<b>336</b>	<b>60,191</b>	<b>40,632</b>	<b>207,927</b>
<b># Days:</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>1,598</b>	<b>1,076</b>	<b>518</b>	<b>812</b>	<b>24,610</b>	<b>14,598</b>	<b>389</b>	<b>24</b>	<b>8,599</b>	<b>2,902</b>	<b>14,852</b>
<b>YTD</b>	<b>36,403</b>	<b>42,497</b>	<b>10,405</b>	<b>11,679</b>	<b>381,036</b>	<b>205,701</b>	<b>7,006</b>	<b>340</b>	<b>60,391</b>	<b>42,867</b>	<b>219,787</b>

COMBINED SUBYEARLING CHINOOK											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/10/2009 *	0	0	0	20	0	0	0	18	---	0	486
04/11/2009	0	0	0	13	455	0	0	13	0	0	1,124
04/12/2009 *	0	3	0	12	374	0	0	8	---	0	1,714
04/13/2009 *	0	0	0	6	132	57	0	7	34	0	1,699
04/14/2009 *	0	0	0	4	64	0	0	3	---	0	120,929
04/15/2009 *	0	0	0	0	450	0	0	25	51	0	871,950
04/16/2009 *	0	0	0	2	0	0	0	4	---	0	104,842
04/17/2009	0	1	0	0	0	0	0	3	85	0	36,352
04/18/2009 *	0	0	0	2	0	0	0	1	---	0	16,877
04/19/2009 *	0	0	0	0	0	0	0	3	34	0	15,596
04/20/2009 *	0	0	0	4	0	0	0	2	---	0	17,380
04/21/2009 *	---	0	0	18	4,630	0	0	10	17	0	15,233
04/22/2009 *	0	0	0	5	1,480	0	0	5	---	0	11,692
04/23/2009 *	0	0	---	4	0	0	0	14	34	41	10,837
04/24/2009	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>90</b>	<b>7,585</b>	<b>57</b>	<b>0</b>	<b>116</b>	<b>255</b>	<b>41</b>	<b>1,226,711</b>
<b># Days:</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>542</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>36</b>	<b>3</b>	<b>87,622</b>
<b>YTD</b>	<b>0</b>	<b>6</b>	<b>13</b>	<b>216</b>	<b>8,379</b>	<b>57</b>	<b>0</b>	<b>172</b>	<b>275</b>	<b>51</b>	<b>1,245,666</b>

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)
04/10/2009 *	0	0	0	3	0	0	0	4	---	0	156
04/11/2009	0	0	0	2	27	0	0	3	51	0	704
04/12/2009 *	0	0	0	4	0	0	0	1	---	0	862
04/13/2009 *	0	0	0	0	0	0	0	2	68	29	1,767
04/14/2009 *	0	0	0	1	0	0	0	2	---	14	3,439
04/15/2009 *	0	0	0	0	64	0	1	1	186	14	3,480
04/16/2009 *	0	0	0	0	65	0	0	1	---	0	4,547
04/17/2009	0	0	0	0	133	0	0	0	203	57	3,963
04/18/2009 *	0	0	0	0	0	0	0	1	---	10	2,190
04/19/2009 *	0	0	0	1	0	0	0	0	169	14	1,760
04/20/2009 *	0	0	0	2	0	36	0	1	---	14	1,957
04/21/2009 *	---	0	0	2	0	0	0	0	254	21	1,904
04/22/2009 *	0	0	0	12	0	0	0	1	---	130	590
04/23/2009 *	0	0	---	10	0	0	0	1	581	82	2,967
04/24/2009	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>289</b>	<b>36</b>	<b>1</b>	<b>18</b>	<b>1,512</b>	<b>385</b>	<b>30,286</b>
<b># Days:</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>21</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>216</b>	<b>28</b>	<b>2,163</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>333</b>	<b>36</b>	<b>1</b>	<b>20</b>	<b>1,542</b>	<b>405</b>	<b>31,107</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)
04/10/2009 *	19	874	12	48	1,368	819	19	7	---	169	463
04/11/2009	24	653	41	32	2,888	1,053	16	3	894	186	296
04/12/2009 *	19	776	27	69	5,022	1,327	45	2	---	444	205
04/13/2009 *	18	351	35	35	7,672	1,346	40	0	911	702	146
04/14/2009 *	34	785	108	68	12,082	4,236	110	3	---	724	48
04/15/2009 *	47	541	402	100	16,833	8,944	57	1	1,892	853	0
04/16/2009 *	24	266	243	49	18,507	6,156	202	4	---	1,158	535
04/17/2009	18	94	583	36	24,418	7,099	167	3	1,368	746	273
04/18/2009 *	16	65	569	46	64,818	6,576	268	5	---	692	64
04/19/2009 *	18	74	367	53	67,253	8,286	347	8	1,966	551	297
04/20/2009 *	44	135	329	63	98,137	26,149	281	6	---	924	460
04/21/2009 *	---	10	320	94	116,790	58,137	275	3	3,327	1,150	635
04/22/2009 *	54	0	282	914	158,900	47,478	289	4	---	1,316	644
04/23/2009 *	80	0	---	666	236,022	155,630	262	15	11,971	1,797	258
04/24/2009	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>415</b>	<b>4,624</b>	<b>3,318</b>	<b>2,273</b>	<b>830,710</b>	<b>333,236</b>	<b>2,378</b>	<b>64</b>	<b>22,329</b>	<b>11,412</b>	<b>4,324</b>
<b># Days:</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>32</b>	<b>330</b>	<b>255</b>	<b>162</b>	<b>59,336</b>	<b>23,803</b>	<b>170</b>	<b>5</b>	<b>3,190</b>	<b>815</b>	<b>309</b>
<b>YTD</b>	<b>503</b>	<b>7,171</b>	<b>3,393</b>	<b>2,333</b>	<b>838,139</b>	<b>335,002</b>	<b>2,598</b>	<b>79</b>	<b>22,470</b>	<b>12,037</b>	<b>5,227</b>

## Two-Week Summary of Passage Indices

Date	COMBINED SOCKEYE										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
04/10/2009 *	0	0	0	0	80	104	10	0	---	0	0
04/11/2009	0	0	0	0	187	172	3	0	68	0	10
04/12/2009 *	0	0	0	0	321	172	7	0	---	7	0
04/13/2009 *	0	0	0	0	132	229	5	0	119	0	0
04/14/2009 *	0	0	0	0	322	172	12	0	---	0	0
04/15/2009 *	0	0	0	0	514	429	7	0	169	7	0
04/16/2009 *	0	0	0	0	327	143	8	0	---	26	0
04/17/2009	0	0	0	0	0	290	3	0	203	29	0
04/18/2009 *	0	0	0	0	0	357	9	1	---	36	0
04/19/2009 *	0	0	0	0	401	250	16	0	288	64	0
04/20/2009 *	0	0	0	0	0	286	7	1	---	64	0
04/21/2009 *	---	0	0	0	514	0	3	0	237	36	0
04/22/2009 *	0	0	0	0	493	0	3	0	---	50	27
04/23/2009 *	0	0	---	0	495	283	1	4	188	92	129
04/24/2009	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,786</b>	<b>2,887</b>	<b>94</b>	<b>6</b>	<b>1,272</b>	<b>411</b>	<b>166</b>
<b># Days:</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>270</b>	<b>206</b>	<b>7</b>	<b>0</b>	<b>182</b>	<b>29</b>	<b>12</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,652</b>	<b>3,467</b>	<b>169</b>	<b>6</b>	<b>1,292</b>	<b>426</b>	<b>170</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

LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

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.

## Two Week Transportation Summary

Source: Fish Passage Center

Updated:

4/24/09 10:04 AM

		04/10/09	TO	04/24/09			
Site	Data	Species					Grand Total
		CH0	CH1	CO	ST	SO	
<b>LGR</b>	Sum of NumberCollected	5,920	266,974	220	651,351	2,940	927,405
	Sum of NumberBarged	985	34,820	92	63,759	724	100,380
	Sum of NumberBypassed	4,933	232,094	128	587,588	2,192	826,935
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	25	0	4	7	38
	Sum of FacilityMorts	0	35	0	0	17	52
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2	60	0	4	24	90
<b>LGS</b>	Sum of NumberCollected	40	143,358	25	234,535	2,019	379,977
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	40	143,339	25	234,532	2,017	379,953
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	13	0	1	1	15
	Sum of FacilityMorts	0	5	0	2	1	8
	Sum of ResearchMorts	0	1	0	0	0	1
	Sum of TotalProjectMorts	0	19	0	3	2	24
<b>LMN</b>	Sum of NumberCollected		3,737	1	1,668	63	5,469
	Sum of NumberBarged		0	0	0	0	0
	Sum of NumberBypassed		3,699	1	1,657	59	5,416
	Sum of Numbertrucked		0	0	0	0	0
	Sum of SampleMorts		4	0	0	2	6
	Sum of FacilityMorts		0	0	0	0	0
	Sum of ResearchMorts		0	0	0	0	0
	Sum of TotalProjectMorts		4	0	0	2	6
<b>MCN</b>	Sum of NumberCollected	150	35,454	890	13,133	750	50,377
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	149	35,438	890	13,127	750	50,354
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	11	0	1	0	12
	Sum of FacilityMorts	0	5	0	5	0	10
	Sum of ResearchMorts	1	5	0	1	0	7
	Sum of TotalProjectMorts	1	21	0	7	0	29
Total Sum of NumberCollected		6,110	449,523	1,136	900,687	5,772	1,363,228
Total Sum of NumberBarged		985	34,820	92	63,759	724	100,380
Total Sum of NumberBypassed		5,122	414,570	1,044	836,904	5,018	1,262,658
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		2	53	0	6	10	71
Total Sum of FacilityMorts		0	45	0	7	18	70
Total Sum of ResearchMorts		1	6	0	1	0	8
Total Sum of TotalProjectMorts		3	104	0	14	28	149



### YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/24/09 10:04 AM

TO: 04/24/09

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	6,490	294,084	250	4,410	656,981	962,215
	Sum of NumberBarged	1,289	40,502	92	889	64,590	107,362
	Sum of NumberBypassed	5,192	253,503	158	3,484	592,387	854,724
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	9	39	0	14	4	66
	Sum of FacilityMorts	0	40	0	23	0	63
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	9	79	0	37	4	129
<b>LGS</b>	Sum of NumberCollected	40	144,313	25	2,432	235,807	382,617
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	40	144,280	25	2,426	235,787	382,558
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	24	0	3	4	31
	Sum of FacilityMorts	0	8	0	3	16	27
	Sum of ResearchMorts	0	1	0	0	0	1
	Sum of TotalProjectMorts	0	33	0	6	20	59
<b>LMN</b>	Sum of NumberCollected		4,735	1	105	1,796	6,637
	Sum of NumberBarged		0	0	0	0	0
	Sum of NumberBypassed		4,696	1	101	1,785	6,583
	Sum of NumberTrucked		0	0	0	0	0
	Sum of SampleMorts		6	0	2	0	8
	Sum of FacilityMorts		0	0	0	0	0
	Sum of ResearchMorts		0	0	0	0	0
	Sum of TotalProjectMorts		6	0	2	0	8
<b>MCN</b>	Sum of NumberCollected	170	35,654	920	770	13,274	50,788
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	169	35,638	920	770	13,267	50,764
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	11	0	0	1	12
	Sum of FacilityMorts	0	5	0	0	6	11
	Sum of ResearchMorts	1	5	0	0	1	7
	Sum of TotalProjectMorts	1	21	0	0	8	30
Total Sum of NumberCollected		6,700	478,786	1,196	7,717	907,858	1,402,257
Total Sum of NumberBarged		1,289	40,502	92	889	64,590	107,362
Total Sum of NumberBypassed		5,401	438,117	1,104	6,781	843,226	1,294,629
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		9	80	0	19	9	117
Total Sum of FacilityMorts		0	53	0	26	22	101
Total Sum of ResearchMorts		1	6	0	0	1	8
Total Sum of TotalProjectMorts		10	139	0	45	32	226

**Cumulative Adult Passage at Mainstem Dams Through: 04/23**

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2009		2008		10-Yr Avg.		2009		2008		10-Yr Avg.		2009		2008		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	04/23	8485	174	18860	60	65617	453	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/22	1377	15	9009	27	35641	161	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/22	486	12	5899	23	25059	63	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/23	258	6	3233	20	19653	79	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/23	158	2	1753	6	12034	28	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/23	78	0	638	1	9288	14	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/23	59	0	330	0	6816	38	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/23	8	1	91	0	5015	4	0	0	0	0	0	0	0	0	0	0	0	0
PRD	04/21	6	1	111	0	1130	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	04/22	1	0	10	0	424	1	0	0	0	0	0	0	0	0	0	0	0	0
RRH	04/22	1	0	1	0	38	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
WFA	04/21	662	0	105	0	-	-	0	0	0	0	0	-	-	0	0	0	0	-

DAM	Coho						Sockeye			Steelhead			
	2009		2008		10-Yr Avg.		10-Yr			10-Yr			Wild
	Adult	Jack	Adult	Jack	Adult	Jack	2009	2008	Avg.	2009	2008	Avg.	2009
BON	0	0	0	0	0	0	0	0	0	1861	1577	1893	632
TDA	0	0	0	0	0	0	0	0	0	918	905	822	393
JDA	0	0	0	0	0	0	0	0	0	2240	2089	2142	1293
MCN	0	0	0	0	0	0	0	0	0	1938	1884	1473	830
IHR	0	0	0	0	0	0	-1	0	0	2681	2797	1838	887
LMN	0	0	0	0	0	0	0	0	0	3914	3206	1907	1717
LGS	0	0	0	0	0	0	0	0	0	4358	1936	1916	1537
LGR	0	0	0	0	0	0	0	0	0	9682	6768	7333	2659
PRD	0	0	0	0	0	0	0	0	0	9	21	4	0
RIS	0	0	0	0	0	0	0	0	0	37	88	22	17
RRH	0	0	0	0	0	0	0	0	0	189	164	75	97
WEL	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	0	0	0	0	-	-	0	0	-	2942	4751	-	-

BON and LGR have switched to video counts so the data is delayed.

\*PRD is not posting wild steelhead numbers.

These numbers were collected from USACE, Grant PUD, Douglas PUD, Chelan PUD, ODFW and DART.

Wild steelhead numbers are included in the total. Wild Steelhead are defined as unclipped fish.

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.

Page last updated on: 03/27/09

BON counts from January 1, 2009 to March 14, 2009 (our traditional counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2009	19	-1	321	109
2008	42	0	568	273