



# Fish Passage Center

## Weekly Report #11 - 06

April 22, 2011

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 92% and 273% of average at individual sub-basins over April. Precipitation above The Dalles has been 202% of average over April. Over the 2011 water year, precipitation has ranged between 103% and 139% of 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 2011 April 1-18, 2011		Water Year 2011 October 1, 2010 to April 18, 2011	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	2.11	213	18.57	122
Sneke River Above Ice Harbor	1.69	193	14.22	127
Columbia Above The Dalles	1.99	202	18.66	122
Kootenai	2.45	233	18.98	121
Clark Fork	1.54	206	12.59	129
Flathead	2.59	273	18.20	139
Pend Oreille/Spokane	2.89	213	25.92	120
Central Washington	0.35	92	6.46	103
Sneke River Plain	0.98	157	8.57	127
Salmon/Boise/Payette	1.65	172	15.91	116
Clearwater	3.71	233	25.78	128
SW Washington Cascades/Cowlitz	5.04	157	60.49	107
Willamette Valley	5.04	173	51.73	107

Snowpack in the Columbia River for basins above the Snake River confluence is 136% of average, for Snake River Basins snowpack is 135% of average, and for lower Columbia Basins between McNary and Bonneville Dam snowpack is 144% of average.

Table 2 displays the April Final and April Mid-Month runoff volume forecasts for multiple reservoirs. The April Mid-Month forecast at The Dalles between January and July is 127000 Kaf (118% 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)	109	117000	118	127000
Grand Coulee (Jan-July)	108	68200	118	74100
Libby Res. Inflow, MT (Apr-Aug)	109	6800 7191*	125	7830
Hungry Horse Res. Inflow, MT (Jan-July)	128	2840	137	3040
Lower Granite Res. Inflow (Apr- July)	116	25100	129	27700
Brownlee Res. Inflow (Apr-July)	119	7510	135	8520
Dworshak Res. Inflow (Apr-July)	116	3060 3387*	128	3390

\* Denotes COE Forecast

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast, the flow objective this spring is 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 97.1 Kcfs over the last week and 110.3 Kcfs over the spring season.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 260 Kcfs at McNary Dam (began April 10<sup>th</sup>) and 135 Kcfs at Priest Rapids Dam (began April 10<sup>th</sup>). Flows at McNary Dam have averaged 257.3 Kcfs over the last week and 270.8 Kcfs over the spring season. Flows at Priest Rapids Dam have averaged 145.9 Kcfs over the last week and 155.6 Kcfs over the spring season.

Grand Coulee Reservoir is at 1227.8 feet (4-21-11) and has drafted 4.8 feet over the last week. Drum gate maintenance is currently being performed at Grand Coulee which requires a maximum reservoir elevation of 1255 feet. The end of April FC Elevation at Grand Coulee is 1220.2 feet (based on the April Final WSF). Outflows at Grand Coulee have ranged between 119.5 and 145.6 Kcfs over the last week. Grand Coulee will be utilized through the end of April to maintain the 135 Kcfs flow objective at Priest Rapids Dam.

The Libby Reservoir is currently at elevation 2357.4 feet (4-21-11) and has drafted 1.8 feet last week. The end of April FC Elevation at Libby is 2359.2 feet (based on the April Final WSF). Outflows at Libby Dam have been 8.5 Kcfs last week.

Hungry Horse is currently at an elevation of 3483.2 feet (4-21-11) and has drafted 5.4 feet last week. The end of April FC Elevation at Hungry Horse is 3479.5 feet (based on the April Final WSF). Outflows at Hungry Horse have been 10.2-10.6 Kcfs last week.

Dworshak is currently at an elevation of 1454.9 feet (4-21-11) and has refilled 4.1 feet last week. The end of April FC Elevation at Dworshak is 1471.6 feet (based on the April Final WSF). Outflows from Dworshak are currently 11.9 Kcfs and have ranged between 5.0 and 11.9 Kcfs last week.

The Brownlee Reservoir was at an elevation of 2015.1 feet on April 21<sup>st</sup>, 2011 drafting 2.7 feet last week. The end of April FC Elevation at Brownlee is 2017.4 feet (based on the April Final WSF). Over the last week, outflows at Brownlee have ranged between 44.5-60.0 Kcfs.

**Spill:**

Spill at Dworshak Dam was greatly reduced over the past week as the project was close to flood control. Spill for fish passage began on April 3<sup>rd</sup> at the lower Snake River projects, and on April 10<sup>th</sup> at the lower Columbia River projects.

Flows were lower the beginning of this past week, but began increasing in the Snake and lower Columbia rivers over the last few days. There are presently two units out at Lower Granite Dam, limiting hydraulic capacity and causing forced spill that is in excess of the 20 Kcfs specified in the Court Order. The two units are expected out until mid May. At Little Goose Dam, spill has been provided to the 30% of instantaneous flow level as specified in the Court Order over the past week. The tailrace TDG has consistently been around 113% to 114%, below the 120% TDG waiver. At Lower Monumental Dam the COE gradually increased the level of spill to the gas cap volume and then adjusted downward to address a 120.6% TDG reading at the Lower Monumental Tailrace monitor. The fishery management agencies and tribes have submitted an SOR (SOR 2011-2) requesting that the project go to a uniform spill pattern at flows of 100 Kcfs and above, to address the dissolved gas issues and allow better fish passage at the project by preventing spill restrictions. At this time, the Action Agencies have not yet taken an action on the SOR. At Ice Harbor Dam the Court Order calls for 45 Kcfs spill during the day and gas cap spill at night. Spill levels have generally been at the 45 Kcfs during the daytime, but the provision of spill to the gas cap was at times limited by the operation of one turbine unit during nighttime hours.

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

Spill for fish passage at the Lower Columbia projects began on April 10<sup>th</sup>. Spill at McNary Dam was at times in excess of the Court Order as a result of spill in excess of hydraulic capacity due to unit outages.

Spill at John Day Dam was 30% of instantaneous flow. There is some question as to whether the planned test at John Day Dam will be implemented this year. High flow conditions may preclude the ability to reduce spill levels to 30% of instantaneous discharge to conduct the test throughout the test period. If the conduct of the test is possible, the present spill level will be changed to alternating 30% and 40% levels during the test period. At The Dalles Dam, spill has met the 40% objective. At Bonneville Dam, spill met the 100 Kcfs in the Court Order.

Project	Day/Night Spill
McNary	40%/40%
John Day	<b>Pre-test:</b> 30%/30% <b>Testing:</b> 30%/30% vs. 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

Gas bubble trauma samples were taken this past week at Lower Granite, Little Goose, Lower Monumental, McNary, Rock Island and Bonneville dams. One fish was observed with Rank 1 signs of GBT at Little Goose Dam, and one fish at Bonneville Dam. This represents 1% of the sample at each project. The action criteria for GBT with Rank 1 signs of GBT is 15% of the population.

**Smolt Monitoring:**

Sampling is ongoing at all Smolt Monitoring Program sites. Steelhead passage in the Snake River has been well ahead of historic average and that early timing was a function of early hatchery releases in the Clearwater River Basin that coincided with unusually high flows. Yearling Chinook smolt passage has begun increasing at Lower Granite Dam as is typical for this time of year. Again this week there were relatively large numbers of sockeye (likely kokanee) in the samples at Snake River sites. Bonneville Dam had large passage of subyearling Chinook passing the during the previous week as releases from Spring Creek NFH and Little White Salmon NFH passed the project. At the SMP traps large numbers of smolts have been collected over the past week as tributary flows dropped back from early peak flows but remained relatively high.

At the Salmon River Trap, located at River km 103, and operated by Idaho Department of Fish and

Game the trap has mainly collected yearling Chinook to this point. Of the 4,000 smolts collected in the past week over 3,800 were yearling Chinook and more than 90% were hatchery origin. Steelhead collection numbers declined this week. Steelhead peak passage at the trap is typically in the first week of May. Flows in the Salmon River at White Bird, rose to between 11000 and 12000 cfs from April 18 to April 22; flows were near historic average for that time of year. Historically median flows begin to rise above 13,000 cfs by April 22.

The Grande Ronde Trap, operated by the Oregon Department of Fish and Wildlife, located at river mile two in the Grande Ronde River, began sampling March 7. Over the past several days of sampling the numbers of yearling Chinook increased to over 400 fish per day with the highest collection to date of 801 occurring on April 17. About 75% of the Chinook collection were hatchery origin based on clips and coded wire tags. Steelhead collections have also increased in the past week with over 400 fish sampled on April 17. Historically steelhead passage increase rapidly at this time of the season with hatchery releases. And the increased passage that occurred was the result of the release of 740,000 hatchery steelhead last week in the Grande Ronde River system. Flows in the Grande Ronde River peaked at 11000 cfs on April 17, coinciding with the peak collections on the date. Flows have since dropped steadily over the past week from above to 7500 cfs which is above historic median of 6,000 cfs for April 22.

The Imnaha River Trap, operated by the Nez Perce Tribe, provides data to the SMP, on their fish collection. The trap has been operating since mid-February. The Imnaha Trap again collected nearly 12,000 yearling Chinook and over 400 steelhead in the past week. The yearling Chinook were nearly all (95% clipped) hatchery origin in the past week. A large release of yearling Chinook, 252,000 smolts were sent out of the acclimation facility on the Imnaha River with the last day of the volitional release on April 14. Flows in the Imnaha River began the week at about 600 cfs—well below average--but then rose to 900 cfs by April 18 which was about historic average flows for that date—and then dropped back down to 700 cfs by April 22.

At the Lewiston Trap, operated by IDFG, located at River km 225 on the Snake River, just above the confluence with the Clearwater River, collections of yearling Chinook have increased rapidly over the

past few days while steelhead have been low—which is normal for this site at this time of year. The total collection of over 1800 yearling Chinook collected in the past week was about 110% of the historic average. The collections of yearling Chinook increased as flows in the Snake River have remained well above historic median. The Lewiston trap typically collects fish more effectively at higher flows and flows at the USGS gage at Anatone have been between 60 and 80 Kcfs over the past week which was 75% to 100% above historic average.

At Lower Granite Dam steelhead had predominated in the sample in the first 3 weeks of sampling but in the past two weeks of sampling yearling Chinook and steelhead collections were about even. The yearling Chinook average daily passage index was 24,000 per day while steelhead averaged 25,000. Sockeye or rather kokanee in the sample are likely fish washing out from Dworshak Reservoir. Research transport barges have been loaded on April 7, April 14 and April 21: an estimated 24,000 steelhead and 8,200 yearling Chinook and 670 sockeye were transported on April 7; 14,000 yearling Chinook, 12,000 steelhead and 400 sockeye on April 14; and 16,000 yearling Chinook, 17,000 steelhead and 480 sockeye on April 21.

At Little Goose Dam, which is sampling for condition only, every 5 days, the first sample was predominated by steelhead—mirroring the pattern seen at Lower Granite Dam. And as with Lower Granite Dam yearling Chinook now are beginning to predominate at Little Goose with the last estimated collection on April 19 at over 29,000 fish compared to about 22,600 steelhead. Lower Monumental Dam is sampling every third day and is collecting small numbers of fish for condition information.

The start of sampling at McNary Dam has been delayed due to a motor failure on the debris removing brushes on the screens for water intake for the juvenile fish sampling facility. Sampling began on April 13. Yearling Chinook predominated in passage at the site this past week, with the passage index at 25,000 on April 21 compared to 13,500 for steelhead.

At John Day Dam sampling has been ongoing. Relatively large numbers of yearling Chinook, steelhead and lamprey have been collected over the past two weeks. Steelhead predominated in the sample the past week with the passage index averaging 18,000 per day while yearling Chinook and lamprey

averaged about 5,000 fish per day. The site has been monitoring condition of lamprey as part of a pilot study to ascertain the relative condition of these fish using similar external measures of fish conditions that are being used to describe salmon smolts.

At Bonneville Dam the largest collections over the past week have been hatchery subyearling Chinook. The daily index for subyearlings reached 933,000 on April 13 as the first wave of Spring Creek NFH released fish arrived at the project. A release of 6.4 million fish occurred on April 12. An additional release of 2.3 million subyearling Chinook were released from Little White Salmon NFH on April 14. Numbers of subyearling Chinook have declined over the past week with the index averaging 41,000 fish per day this week.

#### **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. The only release of Chinook that was scheduled to begin this week was a release of approximately 63,000 yearling spring Chinook to the Wallowa River. This release was expected to begin on or around April 19<sup>th</sup>. The Rapid River Hatchery volitional release of over 2.5 million spring Chinook juveniles was scheduled to end this week.

There were three releases of summer steelhead that were scheduled to begin this week. In all, these releases are expected to total about 822,000 steelhead juveniles. Of these, about 68% were to be released into the Salmon River while the remaining 32% were scheduled for release into the Clearwater River. In addition to the steelhead releases that were scheduled to begin this week, several releases that began in past weeks were scheduled to end this week. These ongoing steelhead were spread throughout this river zone; including releases into the Clearwater, Snake (below Little Goose Dam), and Tucannon.

There are several releases of juvenile salmonids that are scheduled to begin over the next two weeks. Beginning May 1<sup>st</sup>, approximately 850,000 subyearling fall Chinook are scheduled to be released into the Snake River, below Hells Canyon Dam. Approximately 398,000 yearling spring Chinook are scheduled to be released into the Salmon River on or around May 2<sup>nd</sup>. The rest of the releases that are scheduled to begin over the next two weeks are of summer steelhead. In all, about 1.24 million summer steelhead are scheduled to be released in this



river zone over the next two weeks. These summer steelhead releases are scheduled to take place on the Salmon (81%), Pahsimeroi (10%), and Imnaha (9%) rivers.

**Mid-Columbia Zone:** The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. There were two releases of subyearling fall Chinook to the Yakima River scheduled to begin this week. In all, these releases are expected total about 1.3 million juveniles. All of the subyearling fall Chinook that were scheduled for release this week are unmarked. In addition, approximately 100,000 subyearling summer Chinook were scheduled to be released to the Yakima River on April 18<sup>th</sup>.

Two releases of yearling spring Chinook were scheduled to begin this week. These releases are expected to total about 1.67 million spring Chinook juveniles, all of which were being released to the Wenatchee River. In addition to these two releases, several releases of yearling spring Chinook to the Methow River that began in previous weeks were scheduled to end this week. Over 227,000 summer steelhead were scheduled for release into this zone this week. Of these, approximately 53% were scheduled for release into the Okanogan River while 47% were scheduled for release into the Methow River.

Approximately 1.12 million coho juveniles are scheduled for release into the Yakima, Wenatchee, and Mid-Columbia rivers this week. These coho releases are part of a Yakama Tribal program to reintroduce coho to the Yakima, Methow, and Wenatchee rivers. Releases for this program are expected to total nearly 2.4 million total coho juveniles in 2011. Most of the coho juveniles that are released under this program are unclipped, but have either coded-wire or blank-wire tags. Over the next two weeks, nearly 448,000 coho juveniles will also be released to this zone, as part of this program. These future releases are scheduled for the Wenatchee and Methow rivers.

In addition to the subyearling fall Chinook that were scheduled for release into the Yakima River this week, approximately 1.72 million subyearlings are scheduled for release into the Yakima River over the next two weeks. There are also about 23,000 yearling fall Chinook scheduled for release into the Yakima River, beginning next week. These yearling fall Chinook are unmarked, but are tagged with PIT-tags. Just over 1.0 million yearling summer Chinook are scheduled for release into this zone over the next

two weeks. Of these, approximately 81% are scheduled for release into the Wenatchee River while 19% will be released into the Mid-Columbia River. Finally, several release of summer steelhead to the Wenatchee River are scheduled to begin over the next two weeks. In all, these releases are expected to total about 359,000 summer steelhead juveniles.

**Lower Columbia Zone:** The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. The only release that was scheduled to begin this week was a release of approximately 44,600 yearling spring Chinook to Hood River, which was scheduled to take place on April 21<sup>st</sup>. The only other release activity in this zone was a volitional release of about 234,000 yearling spring Chinook to the Umatilla River that was scheduled to end this week.

There are several releases of juvenile salmonids scheduled for this zone over the next two weeks. Approximately 4.6 million subyearling fall Chinook tules are scheduled to be released from Spring Creek NFH on or around May 4<sup>th</sup>. The Warm Spring Tribe is planning to release about 37,500 yearling spring Chinook to Hood River on or around April 24<sup>th</sup>. Approximately 1.0 million coho juveniles are scheduled to be released into Klickitat River in early May. Finally, about 808,000 steelhead are scheduled for release into this zone over the next two weeks. Of these, approximately 98% are summer steelhead while 2% are winter steelhead. The summer steelhead releases are scheduled to take place throughout this river zone, including: the Deschutes (76%), Umatilla (18%), and Hood (6%) rivers. All of the winter steelhead that are scheduled for release over the next two weeks are scheduled for release into the White Salmon River.

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

Adult counts at Bonneville Dam have been updated through April 21<sup>st</sup>. Daily adult spring Chinook counts at Bonneville Dam ranged from 113 to 361 adult salmon per day. Between March 15<sup>th</sup> and April 21<sup>st</sup>, 2,332 adult spring Chinook have been counted at Bonneville Dam. In 2010, 68,393 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2011 adult spring Chinook count at Bonneville Dam is 3.4% of the 2010 count and only about 4.1% of the 10 year average of 56,867. At Willamette Falls Dam 154 adult spring Chinook have been counted so far this year. At The Dalles Dam the 2011 adult spring Chinook is 516 and at McNary Dam 139 adult spring Chinook have been counted. The

Dalles Dam 2011 adult spring Chinook count is only about 1.47% of the 2010 count of 35,107 and 1.56% of the 10 year average count of 33,005. The 2011 McNary Dam adult spring Chinook count is about 1.03% of the 2010 count and about 0.87% of the 10 year average count of 16,010.

The Bonneville Dam 2011 steelhead count of 1,907 is about 52.9% of the 2010 count of 3,601 and about 91.4% of the 10 year average count of 2,087. 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 101 to 215 adults per day last week. This year's Lower Granite steelhead count of 10,534 is about 1.17 times greater than the 2010 count of 8,994 and 1.23 times greater than the 10 year average of 8,558. The 2011 Lower Granite wild steelhead count as of April 21st was 4,523. At Willamette Falls Dam, the 2011 count for steelhead was 6,753, as of April 20th. This year's steelhead count is about 71.4% of the 2010 count of 9,460 at Willamette Falls Dam for the same date range.

At Bonneville Dam, daily counts of adult salmon and steelhead found on the separator and by passed are being tracked this year for the period of March 1st to April 17th. From March 15th to April 17th, daily adult steelhead by passed counts ranged from 1 to 8. A total of 98 adult steelhead have been by passed this year.

### Hatchery Releases Last Two Weeks

**Hatchery Release Summary**

From: 4/8/2011 to 04/21/11

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2011	213,000	04-12-11	04-19-11	S Fk Clearwater River	Clearwater River M F
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2011	262,000	04-20-11	04-21-11	S Fk Clearwater River	Clearwater River M F
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2011	268,000	04-12-11	04-19-11	S Fk Clearwater River	Clearwater River M F
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2011	190,000	04-11-11	04-15-11	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2011	220,000	04-11-11	04-14-11	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2011	280,000	04-18-11	04-22-11	East Fk Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2011	345,000	04-06-11	05-04-11	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2011	830,000	04-13-11	05-03-11	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2011	1,067,000	03-31-11	04-12-11	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2011	2,511,000	03-14-11	04-22-11	Rapid River Hatchery	Little Salmon River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2011	1,340,000	04-11-11	04-11-11	Salmon River (ID)	Salmon River (ID)
<b>Idaho Dept. of Fish and Game Total</b>					<b>7,526,000</b>				
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2011	85,600	04-10-11	04-20-11	Crooked River	S Fk Clearwater River
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2011	135,000	04-11-11	04-13-11	Newsome Creek	S Fk Clearwater River
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2011	153,500	04-10-11	04-20-11	Red River	S Fk Clearwater River
Nez Perce Tribe	Dworshak NFH	ST	SU	2011	60,000	04-15-11	04-15-11	Lolo Creek	Clearwater River M F
Nez Perce Tribe	Dworshak NFH	ST	SU	2011	103,700	04-10-11	04-20-11	Newsome Creek	S Fk Clearwater River
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2011	63,110	04-19-11	04-19-11	Lostine Accim Pond	Wallowa River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2011	155,000	04-10-11	04-20-11	Cpt John Acclim Pond Big Canyon (Clearwater River)	Snake River Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2011	167,000	04-10-11	04-20-11	Pittsburg Landing Acclim Pond Nez Perce Tribal Hatchery	Snake River Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2011	240,000	04-01-11	04-15-11		
<b>Nez Perce Tribe Total</b>					<b>1,326,910</b>				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2011	159,745	04-13-11	04-15-11	Big Canyon Acclim.Pd (Grande Ronde)	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2011	374,936	04-10-11	04-12-11	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2011	103,000	04-01-11	04-14-11	Lookingglass Creek	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2011	252,000	03-30-11	04-14-11	Imnaha Acclim Pond	Imnaha River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2011	7,500	04-15-11	04-15-11	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2011	12,000	04-15-11	04-15-11	Deschutes River	Deschutes River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>909,181</b>				

**Hatchery Releases Last Two Weeks - (Continued)**

U.S. Fish and Wildlife Service	Carson NFH	CH1	SP	2011	1,059,327	04-14-11	04-14-11	Carson Hatchery	Wind River
U.S. Fish and Wildlife Service	Entiat Hatchery	CH1	SU	2011	150,581	04-15-11	04-15-11	Entiat Hatchery	Entiat River
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2011	739,346	04-11-11	04-11-11	Salmon River (ID)	Salmon River (ID)
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2011	1,230,000	04-18-11	04-22-11	Leavenworth Hatchery	Wenatchee River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2011	1,700,000	04-14-11	04-14-11	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH1	SP	2011	600,000	04-14-11	04-14-11	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2011	6,434,037	04-12-11	04-12-11	Spring Creek Hatchery	L Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2011	538,388	04-04-11	04-27-11	Warm Springs Hatchery	Deschutes River
U.S. Fish and Wildlife Service	Willard Hatchery	CH1	SP	2011	400,000	04-14-11	04-14-11	Willard Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2011	461,000	04-15-11	04-20-11	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2011	43,200	04-20-11	04-30-11	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2011	64,000	04-20-11	04-30-11	Winthrop Hatchery	Methow River
<b>U.S. Fish and Wildlife Service Total</b>					<b>13,419,879</b>				
Umatilla Tribe	Carson NFH	CH1	SP	2011	247,196	04-11-11	04-12-11	Walla Walla River	Walla Walla River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2011	50,235	04-05-11	04-14-11	Catherine Cr Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2011	58,737	03-30-11	04-14-11	Catherine Cr Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2011	134,388	04-06-11	04-14-11	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2011	180,710	04-11-11	04-11-11	Umatilla River	Umatilla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2011	234,000	04-13-11	04-19-11	Thornhollow Acclim Pond	Umatilla River
<b>Umatilla Tribe Total</b>					<b>905,266</b>				
Warm Springs Tribe	Carson NFH	CH1	SP	2011	44,604	04-21-11	04-21-11	Blackberry Acclim Pond	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2011	37,500	04-09-11	04-09-11	W Fk Hood River	Hood River
<b>Warm Springs Tribe Total</b>					<b>82,104</b>				



**Hatchery Releases Last Two Weeks - (Continued)**

Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2011	440,000	04-20-11	05-16-11	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2011	520,000	04-13-11	05-13-11	Similkameen Acclim Pd Bonaparte Acclimation	Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2011	140,000	04-12-11	04-12-11	Pond	Okanogan River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2011	460,000	04-10-11	04-20-11	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2011	6,400	04-10-11	04-20-11	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2011	8,000	04-10-11	04-20-11	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2011	54,000	04-15-11	05-15-11	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2011	85,000	04-01-11	04-15-11	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2011	100,000	04-10-11	04-20-11	Walla Walla River	Walla Walla River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2011	160,000	04-10-11	04-20-11	Lyons Ferry Hatchery Cottonwood Acclim	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2011	197,000	04-01-11	04-10-11	Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2011	67,300	04-15-11	04-20-11	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2011	90,100	04-15-11	04-20-11	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2011	408,100	04-15-11	04-20-11	Methow Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2011	400,000	04-12-11	05-12-11	Carlton Acclim Pond Ringold Springs	Methow River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2011	158,000	04-14-11	04-21-11	Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2011	113,000	04-01-11	04-30-11	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2011	118,000	04-01-11	04-30-11	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2011	77,000	04-10-11	04-20-11	Tucannon Hatchery	Tucannon River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2011	420,000	04-15-11	04-25-11	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2011	120,000	04-20-11	05-15-11	Okanogan River	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2011	320,000	04-15-11	05-15-11	Methow River	Methow River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>4,461,900</b>				
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,321	04-19-11	04-19-11	Icicle Creek Jack Creek Acclim	Wenatchee River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2011	273,539	03-15-11	05-14-11	Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2011	279,639	03-15-11	05-14-11	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2011	282,335	03-15-11	05-14-11	Easton Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	37,000	04-20-11	06-01-11	Boone Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	79,015	04-15-11	06-01-11	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	88,175	04-20-11	06-01-11	Stiles Pond Lost Creek Acclim	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	88,942	04-20-11	06-01-11	Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	90,498	04-20-11	06-01-11	Easton Pond	Yakima River
Yakama Tribe	Eastbank Hatchery	CH0	SU	2011	100,000	04-20-11	04-21-11	Stiles Pond	Yakima River
Yakama Tribe	Priest Rapids Hatchery	CH0	FA	2011	500,000	04-16-11	04-16-11	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2011	800,000	04-16-11	04-16-11	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	50,000	04-20-11	06-01-11	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,000	04-20-11	06-01-11	Easton Pond Lost Creek Acclim	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,297	04-20-11	06-01-11	Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,671	04-15-11	06-01-11	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	245,455	04-15-11	06-01-11	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2011	51,854	04-21-11	04-21-11	Wells Hatchery	Mid-Columbia River
Yakama Tribe	Willard Hatchery	CO	UN	2011	229,620	04-19-11	04-20-11	Icicle Creek	Wenatchee River
<b>Yakama Tribe Total</b>					<b>3,566,361</b>				
<b>Grand Total</b>					<b>32,197,601</b>				

### Hatchery Releases Next Two Weeks

#### Hatchery Release Summary

From: 4/22/2011 to 5/5/2011

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2011	30,000	04-29-11	04-29-11	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2011	90,000	04-29-11	04-29-11	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2011	120,000	04-27-11	04-28-11	McNabb/Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2011	280,000	04-18-11	04-22-11	East Fk Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2011	280,000	04-22-11	04-27-11	Squaw Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2011	345,000	04-06-11	05-04-11	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2011	830,000	04-13-11	05-03-11	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Oxbow-Idaho	CH0	FA	2011	200,000	05-05-11	05-05-11	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2011	2,511,000	03-14-11	04-22-11	Rapid River Hatchery	Little Salmon River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2011	398,000	05-02-11	05-02-11	Yankee Fk (Salmon R)	Salmon River (ID)
<b>Idaho Dept. of Fish and Game Total</b>					<b>5,084,000</b>				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2011	650,000	05-01-11	05-01-11	Hells Canyon Dam	Snake River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2011	44,000	04-26-11	04-26-11	Little Sheep Creek	Imnaha River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2011	74,000	04-26-11	04-26-11	L Sheep Acclim Pond	Imnaha River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2012	300,000	05-01-11	05-01-11	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2012	300,000	05-01-11	05-01-11	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	ST	SU	2011	46,000	04-25-11	04-25-11	Meacham Creek	Umatilla River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>1,414,000</b>				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2011	163,830	04-29-11	04-29-11	East Fk Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2011	216,297	05-02-11	05-02-11	Yankee Fk (Salmon R)	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2011	226,125	05-02-11	05-02-11	Yankee Fk (Salmon R)	Salmon River (ID)
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2011	1,230,000	04-18-11	04-22-11	Leavenworth Hatchery	Wenatchee River
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2011	4,600,000	05-04-11	05-04-11	Spring Creek Hatchery Warm Springs	L Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2011	538,388	04-04-11	04-27-11	Hatchery	Deschutes River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2011	43,200	04-20-11	04-30-11	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2011	64,000	04-20-11	04-30-11	Winthrop Hatchery	Methow River
<b>U.S. Fish and Wildlife Service Total</b>					<b>7,081,840</b>				
Umatilla Tribe	Umatilla Hatchery	ST	SU	2011	46,000	04-25-11	04-25-11	Minthorn Acclimation Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	ST	SU	2011	46,000	04-25-11	04-25-11	Pendelton Acclim Pond	Umatilla River
<b>Umatilla Tribe Total</b>					<b>92,000</b>				
Warm Springs Tribe	Oak Springs Hatchery	ST	SU	2011	25,000	04-30-11	04-30-11	E Fk Irrig Dist Sand Trap	Hood River
Warm Springs Tribe	Oak Springs Hatchery	ST	SU	2011	25,000	04-30-11	05-14-11	Parkdale Acclim Pond	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2011	37,500	04-24-11	04-24-11	W Fk Hood River	Hood River
<b>Warm Springs Tribe Total</b>					<b>87,500</b>				

**Hatchery Releases Next Two Weeks - (Continued)**

Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2011	190,000	04-25-11	04-25-11	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chelan Hatchery	ST	SU	2011	25,000	05-02-11	05-06-11	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2011	440,000	04-20-11	05-16-11	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2011	520,000	04-13-11	05-13-11	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2011	820,000	04-26-11	05-09-11	Dryden Acclim Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2011	50,000	05-02-11	05-06-11	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2011	54,000	04-15-11	05-15-11	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2011	400,000	04-12-11	05-12-11	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2011	20,000	04-25-11	05-05-11	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2011	113,000	04-01-11	04-30-11	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2011	118,000	04-01-11	04-30-11	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2011	81,000	05-02-11	05-06-11	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2011	91,000	05-02-11	05-06-11	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2011	92,000	05-02-11	05-06-11	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2011	420,000	04-15-11	04-25-11	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2011	120,000	04-20-11	05-15-11	Okanogan River	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2011	320,000	04-15-11	05-15-11	Methow River	Methow River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>3,874,000</b>				
Yakama Tribe	Cascade Hatchery	CO	UN	2011	69,339	04-29-11	06-07-11	Beaver Creek Acclim Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2011	138,648	04-22-11	04-22-11	Icicle Creek	Wenatchee River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2011	273,539	03-15-11	05-14-11	Jack Creek Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2011	279,639	03-15-11	05-14-11	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2011	282,335	03-15-11	05-14-11	Easton Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	37,000	04-20-11	06-01-11	Boone Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	79,015	04-15-11	06-01-11	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	88,175	04-20-11	06-01-11	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	88,942	04-20-11	06-01-11	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2011	90,498	04-20-11	06-01-11	Easton Pond	Yakima River
Yakama Tribe	Eastbank Hatchery	ST	SU	2011	20,000	05-02-11	05-06-11	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Klickitat Hatchery	CO	NO	2011	1,000,000	05-01-11	05-01-11	Klickitat Hatchery	Klickitat River
Yakama Tribe	Little White Salmon NFH	CH0	FA	2011	1,700,000	04-23-11	04-23-11	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2011	23,000	04-29-11	04-29-11	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH1	FA	2011	23,000	04-29-11	04-29-11	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	50,000	04-20-11	06-01-11	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,000	04-20-11	06-01-11	Easton Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,297	04-20-11	06-01-11	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	100,671	04-15-11	06-01-11	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2011	245,455	04-15-11	06-01-11	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2011	29,279	04-29-11	06-07-11	Beaver Creek Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	49,379	04-29-11	06-14-11	Winthrop Hatchery	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2011	51,119	04-28-11	04-29-11	Nason Wetlands	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2011	77,835	04-22-11	04-22-11	Icicle Creek	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2011	248,757	04-23-11	04-23-11	Winthrop Hatchery	Methow River
<b>Yakama Tribe Total</b>					<b>5,245,922</b>				
<b>Grand Total</b>					<b>22,879,262</b>				

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

**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
04/08/2011	155.3	2.4	153.2	18.9	158.6	2.8	162.5	5.3	165.8	0.0	179.4	64.1	180.4	66.3
04/09/2011	149.9	3.6	156.5	26.7	165.1	7.1	165.3	0.0	165.7	7.9	177.8	65.5	181.9	69.9
04/10/2011	157.7	5.5	156.7	38.8	158.1	0.0	158.5	0.0	160.0	4.9	175.8	56.2	181.7	61.4
04/11/2011	146.4	0.8	147.2	8.8	151.2	0.0	153.1	0.0	156.5	0.0	170.9	52.2	174.7	52.2
04/12/2011	154.7	0.0	158.6	0.0	157.5	10.0	154.7	0.0	157.5	0.0	161.2	44.1	167.2	24.2
04/13/2011	140.0	0.0	151.0	0.0	155.5	10.7	155.1	0.0	158.1	0.0	169.0	37.2	168.2	30.6
04/14/2011	139.4	0.0	141.5	0.0	145.2	10.0	145.7	0.0	150.4	0.0	156.9	20.5	154.0	14.4
04/15/2011	145.6	0.0	147.7	0.0	147.6	10.0	143.2	0.0	147.6	0.0	149.4	0.0	144.4	0.0
04/16/2011	120.1	0.0	116.8	0.0	128.1	10.0	131.3	0.0	136.3	0.0	152.4	0.0	154.6	0.0
04/17/2011	119.5	0.0	123.9	0.0	130.7	10.0	129.3	0.0	133.7	14.3	146.9	0.0	147.3	0.0
04/18/2011	121.4	0.0	122.7	0.0	133.5	9.9	133.6	0.0	136.7	13.2	143.9	0.0	148.3	0.0
04/19/2011	140.5	0.0	143.8	0.0	145.4	10.0	140.6	0.0	144.2	14.0	139.3	0.0	136.7	0.0
04/20/2011	137.9	0.0	146.0	0.0	144.0	10.0	142.9	0.0	149.0	13.9	151.9	13.8	145.4	0.0
04/21/2011	137.9	0.0	136.5	0.0	141.0	9.7	137.8	0.0	139.3	13.8	145.8	8.5	144.8	0.0

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/08/2011	23.5	12.8	43.2	45.6	117.0	44.5	111.4	33.5	116.9	28.9	120.6	67.6		
04/09/2011	24.0	13.4	42.9	45.8	113.2	42.4	108.5	35.0	113.4	27.9	113.9	71.1		
04/10/2011	24.1	13.4	42.4	45.7	108.9	40.3	107.0	35.5	112.1	26.1	116.1	68.4		
04/11/2011	24.4	13.8	42.1	45.8	105.3	33.2	99.4	29.9	100.5	25.0	103.5	64.4		
04/12/2011	24.9	14.1	45.0	45.9	106.7	34.5	104.2	31.1	108.6	26.2	110.0	67.0		
04/13/2011	19.7	9.0	44.5	45.8	101.0	29.0	98.3	29.4	100.5	27.9	104.4	65.7		
04/14/2011	18.8	8.2	41.8	45.4	98.8	26.9	95.6	28.6	98.3	27.0	100.1	66.6		
04/15/2011	10.4	0.6	42.0	45.1	89.9	21.5	88.3	26.5	91.7	26.9	94.1	60.8		
04/16/2011	5.2	0.0	42.4	45.7	82.6	20.1	79.1	23.8	82.2	27.9	84.2	59.8		
04/17/2011	5.0	0.0	44.8	46.0	89.4	21.1	87.5	26.3	89.3	27.9	90.4	61.4		
04/18/2011	5.0	0.0	51.6	49.8	96.6	25.0	92.9	27.8	96.1	27.9	98.0	65.5		
04/19/2011	4.9	0.0	52.4	60.3	104.8	33.0	102.6	30.7	106.1	28.2	108.3	70.5		
04/20/2011	8.1	0.8	54.8	60.4	106.8	35.9	102.0	30.6	104.7	29.7	106.2	66.5		
04/21/2011	11.9	1.5	---	---	109.8	37.7	105.6	31.7	110.2	30.6	113.0	67.4		

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
04/08/2011	282.1	132.9	285.0	60.6	278.6	59.6	307.8	75.2	92.9	127.4
04/09/2011	298.7	150.3	327.1	101.5	314.1	107.4	319.9	87.3	93.0	127.2
04/10/2011	308.4	159.6	329.8	103.8	319.3	126.6	331.4	99.6	92.1	127.2
04/11/2011	296.1	151.3	300.4	89.9	289.1	115.6	323.4	99.6	91.3	120.2
04/12/2011	283.4	145.2	310.4	93.0	299.6	119.4	315.7	99.5	89.3	114.5
04/13/2011	290.2	154.8	285.3	85.5	278.7	111.4	303.3	99.6	90.2	101.0
04/14/2011	270.4	139.8	273.2	82.0	261.0	104.4	283.2	99.5	77.9	93.4
04/15/2011	262.1	124.2	283.0	84.8	275.7	109.5	280.8	99.8	82.0	86.6
04/16/2011	224.3	90.0	215.1	64.4	202.9	80.8	250.7	99.6	52.8	85.9
04/17/2011	248.4	100.1	253.4	76.1	242.9	97.3	259.2	99.6	59.3	87.8
04/18/2011	260.7	114.7	278.8	83.7	267.9	107.1	279.1	99.6	81.3	85.8
04/19/2011	252.7	103.7	257.7	77.4	251.2	100.5	286.2	99.5	81.6	92.7
04/20/2011	275.1	125.9	281.5	84.2	270.8	108.5	294.0	99.6	83.7	98.3
04/21/2011	277.7	127.4	282.9	85.0	270.2	108.1	284.2	99.8	79.1	92.9

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

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

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>							
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/8	107.6	112.0	112.3	24	115.5	116.9	117.8	22	105.3	105.6	106.1	24	109.0	110.2	111.8	22	106.8	108.9	109.2	24
4/9	112.0	112.1	112.2	24	113.3	114.5	115.0	24	106.4	106.9	107.7	24	109.4	110.8	112.6	24	106.7	107.9	108.9	24
4/10	111.8	111.9	112.0	23	111.8	112.7	114.0	20	105.5	105.6	105.9	24	108.7	110.3	114.5	20	107.3	108.6	109.4	24
4/11	111.8	111.9	111.9	24	112.9	113.3	113.5	23	105.2	105.5	105.5	24	107.2	108.7	111.3	23	107.4	108.0	108.8	24
4/12	111.8	111.9	112.0	24	111.5	112.3	112.6	24	105.4	106.2	106.6	24	105.5	105.9	106.1	24	107.3	108.5	109.0	24
4/13	111.9	112.0	112.3	21	111.2	111.9	113.4	18	105.8	106.0	106.2	24	105.9	106.1	106.5	18	105.1	106.0	106.9	24
4/14	111.7	111.8	111.9	23	110.0	110.4	111.0	19	105.2	105.3	105.7	24	105.4	105.6	106.0	19	103.2	103.3	103.3	24
4/15	111.8	111.9	112.0	24	109.3	110.0	110.3	24	105.6	106.2	106.3	24	105.5	105.8	106.2	24	103.1	103.4	103.5	24
4/16	111.9	112.1	112.3	24	110.1	111.3	111.8	24	107.0	107.6	108.2	24	107.0	107.9	108.6	24	104.1	104.4	104.6	24
4/17	111.8	111.9	112.1	23	108.5	109.2	110.2	22	106.4	106.6	106.8	24	106.5	106.7	106.8	22	104.3	104.7	105.0	24
4/18	111.9	112.0	112.1	24	109.0	110.4	111.5	23	106.3	106.4	106.6	24	106.4	106.6	106.8	23	104.4	104.6	105.0	24
4/19	111.7	111.8	112.0	23	109.7	110.3	110.7	22	106.5	107.1	108.3	24	104.7	105.6	106.1	22	104.3	104.5	104.7	24
4/20	108.3	111.7	112.0	24	110.4	111.1	111.7	23	107.5	108.3	109.0	24	105.1	105.7	106.2	23	104.7	105.1	105.2	24
4/21	99.5	102.2	104.7	22	111.6	112.6	113.0	21	107.4	107.7	107.9	24	105.4	105.7	106.0	21	105.0	105.2	105.4	24

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

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/8	110.7	112.0	113.9	24	109.2	111.8	113.0	22	105.9	107.0	110.6	22	109.6	111.2	111.8	24	109.9	110.6	111.9	24
4/9	111.0	113.8	116.2	24	108.0	108.7	109.1	24	108.9	110.2	110.5	24	108.3	109.3	109.9	24	107.9	108.6	108.8	24
4/10	110.7	115.0	116.3	24	107.7	109.2	112.0	24	107.6	108.6	110.7	24	107.1	108.1	108.9	24	106.2	106.8	107.3	24
4/11	108.8	110.5	115.6	24	106.9	108.3	111.7	24	107.4	108.9	111.3	24	107.5	108.3	109.1	24	106.7	107.3	107.8	24
4/12	107.2	108.6	109.5	24	106.8	107.5	108.9	24	108.7	109.3	109.9	24	107.5	108.0	108.2	24	106.7	107.1	107.4	24
4/13	104.7	105.5	106.7	24	106.6	107.5	108.9	23	109.0	110.0	111.2	23	108.3	108.9	109.2	24	107.2	107.7	108.3	24
4/14	103.5	103.9	104.3	24	103.2	103.7	104.8	24	105.9	106.5	107.4	24	108.6	109.0	109.2	24	107.5	107.9	108.2	24
4/15	103.4	103.8	104.3	24	102.5	102.7	103.0	23	105.0	105.4	105.8	23	106.9	107.1	107.4	24	106.3	106.4	106.8	24
4/16	104.7	105.2	105.7	24	103.7	104.3	104.8	24	106.3	107.0	107.5	24	106.2	106.5	106.6	24	105.6	105.8	106.0	24
4/17	105.1	105.8	106.7	24	103.9	104.4	105.0	24	106.2	107.0	107.6	24	106.0	106.2	106.4	24	105.3	105.5	105.7	24
4/18	105.0	105.5	106.1	24	103.7	104.1	104.7	22	105.8	106.3	106.9	22	105.8	105.9	106.1	24	105.1	105.2	105.3	24
4/19	104.5	105.0	105.5	23	103.3	103.8	104.0	22	105.5	106.2	106.6	22	105.4	105.7	105.9	24	104.7	104.9	105.2	24
4/20	104.6	105.5	106.2	24	104.4	104.8	105.2	24	106.6	107.3	107.8	24	106.1	106.6	106.9	24	105.3	105.7	106.1	24
4/21	104.9	105.5	106.3	24	104.1	104.4	104.7	23	106.2	106.7	107.2	23	106.2	106.4	106.6	24	105.4	105.5	105.6	24

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

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/8	108.5	110.7	112.1	24	108.6	111.0	112.4	24	107.5	108.1	108.6	24	111.6	112.6	113.4	24	111.1	112.6	113.2	24
4/9	107.9	108.8	110.1	24	109.1	110.2	112.0	24	106.7	106.9	107.1	24	111.4	112.4	113.2	24	110.2	110.8	111.4	24
4/10	105.3	105.9	106.8	24	106.4	107.8	111.4	24	107.8	108.5	108.9	24	110.8	111.5	112.8	24	110.4	110.8	111.3	24
4/11	106.9	107.3	107.5	24	107.1	107.4	107.6	24	107.0	107.3	107.7	24	110.3	111.5	112.8	24	109.7	110.4	110.6	24
4/12	106.5	107.9	108.4	24	106.7	108.0	108.6	24	106.2	107.3	107.7	24	109.6	110.8	112.9	24	109.2	109.5	110.0	24
4/13	106.7	107.4	107.7	24	106.8	107.5	107.9	24	107.2	107.5	107.6	24	110.1	111.2	114.4	24	110.5	111.2	112.3	24
4/14	107.5	108.2	108.8	24	107.6	108.3	108.8	24	106.3	106.6	106.8	24	108.3	109.2	110.8	24	108.4	109.1	109.7	24
4/15	106.4	106.8	107.7	24	106.6	107.0	108.0	24	105.8	106.2	106.5	24	105.9	106.3	106.6	24	107.3	107.8	108.2	24
4/16	105.8	106.0	106.3	24	105.9	106.1	106.4	24	107.5	108.1	108.8	24	107.6	108.2	108.5	24	106.8	107.2	107.8	24
4/17	105.0	105.3	105.5	24	107.8	108.6	110.1	24	106.6	106.9	107.5	24	106.7	107.0	107.8	24	106.7	107.0	107.4	24
4/18	104.8	105.0	105.2	24	106.6	107.2	108.6	24	105.5	105.9	106.1	24	105.7	105.9	106.2	24	105.4	105.7	106.1	24
4/19	104.5	104.9	105.3	24	106.8	107.5	107.8	24	105.2	105.8	106.5	24	104.9	105.2	105.5	24	104.3	104.6	105.1	24
4/20	105.1	105.6	105.9	24	107.2	108.0	108.9	24	106.4	106.9	107.6	24	107.0	107.9	109.5	24	105.8	106.5	106.9	24
4/21	105.1	105.3	105.7	24	107.4	108.3	109.7	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	Priest R. Dnst			#	Pasco			#	Dworshak			#	Clwrtr-Peck			#	Anatone			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
4/8	116.1	117.1	117.8	24	108.3	109.2	110.5	24	119.1	119.5	119.6	24	108.8	109.5	109.8	24	104.5	105.1	105.6	24
4/9	116.3	116.6	117.0	24	111.1	111.8	112.4	24	119.5	119.7	119.9	24	109.9	110.4	110.7	24	105.0	105.7	106.3	24
4/10	115.3	115.9	116.4	24	109.9	110.3	110.5	24	119.1	119.2	119.5	24	110.0	110.3	110.5	24	104.8	105.2	105.4	24
4/11	113.4	114.7	115.9	24	109.1	109.9	110.5	24	120.4	121.2	122.1	18	110.9	111.7	112.0	24	105.1	105.4	106.1	24
4/12	109.5	110.2	111.7	24	108.5	109.2	109.7	24	121.7	121.9	122.1	24	112.1	112.9	113.2	24	105.6	106.5	107.2	24
4/13	112.6	114.8	117.4	24	106.8	107.3	108.8	24	117.1	117.3	117.5	24	108.7	109.0	111.5	24	105.3	105.6	105.8	24
4/14	108.6	109.6	113.7	24	106.4	106.8	106.9	24	116.6	117.9	118.1	24	108.7	109.5	110.0	24	105.1	105.8	106.3	24
4/15	106.6	107.2	107.6	24	105.0	105.5	105.8	24	99.2	100.8	106.9	24	100.8	101.7	106.0	24	105.7	106.2	106.5	24
4/16	106.3	106.8	107.1	24	104.5	104.8	105.0	24	100.1	100.7	105.0	24	101.5	102.0	102.4	24	106.0	106.5	107.0	24
4/17	106.3	106.5	106.8	24	103.9	104.7	105.1	24	100.2	100.8	105.0	24	101.2	101.5	101.6	24	104.7	105.2	105.7	24
4/18	105.1	105.4	106.0	24	103.6	103.9	104.5	24	99.1	100.3	105.1	24	100.5	100.7	101.1	23	104.1	104.4	104.7	24
4/19	104.0	104.2	104.4	24	102.2	102.8	103.1	24	98.4	99.3	102.6	24	100.7	101.3	102.0	21	105.7	106.8	107.2	24
4/20	105.3	106.0	106.2	24	102.8	103.4	103.6	24	100.5	101.8	105.2	24	101.2	101.8	102.2	23	106.7	107.3	108.0	24
4/21	---	---	---	0	102.4	102.7	103.3	24	101.6	101.6	101.7	10	101.0	101.3	101.6	24	106.5	106.9	107.5	24

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

Date	Clwrtr-Lewiston			#	Lower Granite			#	L. Granite Tlwr			#	Little Goose			#	L. Goose Tlwr			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
4/8	105.2	105.9	106.5	24	105.0	105.3	105.5	24	117.6	118.1	118.4	24	117.3	117.7	117.9	24	116.2	116.4	116.5	24
4/9	106.3	107.1	108.2	24	105.5	105.7	105.8	24	117.2	117.7	118.2	24	117.3	117.5	117.7	24	116.1	116.6	118.2	24
4/10	105.9	106.3	106.5	24	105.3	105.5	105.8	24	116.5	117.4	118.1	24	114.6	115.1	116.0	24	115.5	116.3	117.3	24
4/11	106.2	106.7	107.3	24	105.5	105.7	105.9	24	115.0	115.9	116.4	24	112.8	113.2	113.5	24	113.9	114.5	115.1	24
4/12	107.5	108.7	109.4	24	105.7	106.2	106.5	24	115.5	116.4	116.9	24	112.5	112.9	113.1	24	114.3	114.5	114.9	24
4/13	105.3	106.2	107.1	24	106.7	106.9	107.0	24	114.0	115.1	116.1	24	112.5	112.7	113.0	24	113.5	113.9	114.1	24
4/14	105.0	106.0	106.6	24	106.4	106.6	106.7	24	113.1	114.0	115.0	24	111.4	111.7	111.9	24	113.1	113.3	113.5	24
4/15	102.1	103.2	104.9	24	105.3	105.5	105.9	24	110.7	111.4	115.1	24	110.9	111.1	111.3	24	112.4	112.6	113.0	24
4/16	101.2	102.4	103.2	23	106.3	106.9	107.2	24	110.4	110.7	111.1	24	110.8	111.0	111.3	24	112.7	112.9	113.2	24
4/17	100.5	101.4	102.3	22	106.4	106.6	106.9	24	110.5	111.1	111.7	24	110.6	110.7	110.9	24	112.7	112.9	113.1	24
4/18	99.8	100.3	101.0	23	105.3	105.6	106.1	24	112.2	113.2	113.6	24	108.9	109.6	110.3	24	112.0	112.3	112.6	24
4/19	100.1	101.4	102.3	24	103.8	104.0	104.3	24	114.7	116.2	116.3	24	107.6	107.9	108.3	24	112.6	113.1	113.4	24
4/20	100.7	101.7	102.3	23	104.1	104.5	105.0	24	115.7	116.4	116.8	24	108.7	109.4	109.8	24	113.4	113.9	115.6	24
4/21	100.7	101.2	102.1	20	105.7	105.9	106.1	24	116.4	116.8	116.9	24	110.4	111.1	111.5	24	114.2	114.6	114.9	24

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

Date	Lower Mon.			#	L. Mon. Tlwr			#	Ice Harbor			#	Ice Harbor Tlwr			#	McNary-Oregon			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
4/8	115.9	116.6	116.9	24	120.0	120.4	120.7	24	114.3	114.9	115.4	24	118.2	118.8	119.1	24	---	---	---	0
4/9	116.7	116.9	117.1	24	119.3	119.5	119.9	24	116.1	116.4	116.8	24	118.2	118.9	119.3	24	---	---	---	0
4/10	115.4	115.8	116.4	24	117.0	118.5	119.0	24	115.1	115.3	115.9	24	117.9	118.8	119.4	24	---	---	---	0
4/11	115.0	115.3	115.6	24	114.8	115.3	116.2	24	113.9	114.6	115.1	24	117.1	118.1	118.8	24	---	---	---	0
4/12	113.7	114.1	114.4	24	116.9	118.3	119.1	24	113.5	114.0	114.7	24	117.9	119.2	120.4	24	---	---	---	0
4/13	114.9	115.2	115.6	24	118.9	119.1	119.5	24	115.3	115.6	115.7	24	117.6	118.9	120.5	24	---	---	---	0
4/14	113.1	113.5	114.5	24	118.3	119.1	119.4	24	113.9	114.1	114.6	24	117.5	119.0	119.5	24	---	---	---	0
4/15	112.4	112.9	113.5	24	118.2	118.7	119.1	24	113.8	114.1	114.3	24	116.8	117.8	119.7	24	---	---	---	0
4/16	113.9	114.1	114.3	24	118.7	118.9	119.1	24	114.3	114.4	114.6	24	115.8	116.2	116.7	24	---	---	---	0
4/17	112.9	113.2	113.8	24	118.7	118.9	119.1	24	114.3	114.6	114.8	24	116.5	117.2	118.7	24	---	---	---	0
4/18	111.9	112.1	112.5	24	118.2	118.4	118.6	24	114.3	114.4	114.7	24	117.3	118.4	119.9	24	---	---	---	0
4/19	111.4	111.7	112.0	24	118.2	118.4	118.8	24	113.2	113.5	113.8	24	118.3	119.0	119.9	24	---	---	---	0
4/20	112.5	113.2	114.1	24	119.0	119.9	120.8	24	114.2	114.6	114.8	24	117.8	119.1	120.0	24	---	---	---	0
4/21	113.0	113.5	114.1	24	120.4	120.6	120.9	24	113.9	114.3	114.7	24	117.8	119.5	120.2	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>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
4/8	109.3	110.6	111.7	24	119.9	120.0	120.2	24	111.7	112.0	112.3	24	116.1	116.3	116.7	24	110.3	110.6	110.9	24
4/9	111.7	112.0	112.1	24	120.2	121.1	121.4	24	111.8	112.0	112.1	24	119.4	120.7	121.2	24	110.0	110.7	111.4	24
4/10	110.7	111.5	112.1	24	117.9	118.1	118.3	24	112.0	112.6	113.0	24	118.5	119.8	120.3	24	112.8	113.6	114.6	24
4/11	110.2	110.8	111.6	24	117.3	117.7	117.9	24	111.6	112.2	112.7	24	115.7	116.4	117.7	24	111.3	111.8	112.6	24
4/12	110.4	111.6	112.5	24	117.6	118.2	118.4	24	111.2	111.7	112.2	24	116.2	116.9	117.7	24	111.2	112.0	112.6	24
4/13	111.2	111.6	112.0	24	118.2	118.4	118.6	24	112.0	112.2	112.4	24	115.2	116.4	117.2	24	111.5	112.1	112.6	24
4/14	110.1	110.5	110.8	24	117.5	117.8	118.2	24	111.0	111.2	111.4	24	114.6	115.2	116.0	24	110.3	111.0	111.4	24
4/15	109.3	110.1	110.6	24	116.8	117.3	117.4	24	111.2	111.6	111.9	24	115.0	116.0	117.1	24	111.1	111.4	111.6	24
4/16	110.0	110.1	110.3	24	114.8	115.0	115.0	24	112.5	112.9	113.0	24	113.9	114.5	115.0	24	111.9	112.1	112.3	24
4/17	109.1	109.5	110.1	24	115.4	115.6	115.8	24	111.7	111.9	112.1	24	115.0	115.5	116.6	24	110.5	110.9	111.4	24
4/18	107.9	108.3	109.1	24	116.6	117.6	117.8	24	110.7	111.1	111.4	24	114.7	115.8	116.6	24	110.0	110.3	110.7	24
4/19	107.6	108.0	109.8	24	115.3	115.8	116.8	24	109.5	109.7	109.8	24	114.1	114.6	115.0	24	109.8	110.5	110.9	24
4/20	108.9	109.3	109.6	24	116.7	117.2	117.5	24	110.1	110.5	110.8	24	115.2	115.7	117.0	24	111.2	111.4	111.6	24
4/21	107.9	108.4	109.0	24	116.0	116.2	116.3	24	109.0	109.6	110.4	24	114.7	115.5	116.2	24	108.7	109.4	110.7	24

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

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>Camas\Washougal</u>			#	<u>Cascade Island</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
4/8	112.6	112.9	113.4	24	113.5	114.2	115.1	24	114.6	115.1	115.9	24	115.1	115.8	116.9	24	118.3	118.6	118.8	24
4/9	114.4	115.4	116.0	24	110.8	111.4	112.3	24	112.7	113.0	113.3	24	112.1	112.6	113.5	24	118.2	118.7	118.8	24
4/10	117.4	117.9	118.4	24	111.7	113.3	114.4	24	113.3	114.4	115.1	24	111.0	111.3	112.0	24	118.6	118.7	119.0	24
4/11	116.7	117.0	117.6	24	114.4	114.7	114.9	24	115.0	115.2	115.5	24	112.5	113.1	113.4	24	118.6	118.9	119.2	24
4/12	117.0	117.6	118.2	24	115.3	116.2	116.9	24	116.0	116.6	116.8	24	114.5	115.3	115.6	24	119.4	120.1	120.5	24
4/13	116.9	117.6	118.0	24	116.3	117.0	117.2	24	116.7	117.1	117.3	24	115.1	115.3	115.5	24	120.2	120.5	120.8	24
4/14	116.3	116.9	117.3	24	113.9	114.1	114.4	24	115.1	115.3	115.5	24	113.3	113.7	114.2	24	118.7	119.0	120.0	24
4/15	116.6	117.0	117.3	24	114.3	114.8	115.1	24	115.6	115.9	116.0	24	112.9	113.2	113.5	24	118.7	118.9	119.2	24
4/16	116.4	116.6	116.9	24	114.8	115.1	115.4	24	116.1	116.2	116.3	24	113.8	114.3	114.6	24	118.3	118.5	119.0	24
4/17	115.9	116.2	116.4	24	112.7	112.9	113.5	24	114.9	115.2	115.4	24	113.8	114.6	115.2	24	118.3	118.7	119.4	24
4/18	115.7	115.9	116.1	24	112.1	112.4	112.8	24	114.0	114.2	114.3	24	112.9	113.3	113.6	24	118.4	118.5	118.8	24
4/19	115.6	116.2	116.7	24	112.1	112.9	113.3	24	114.0	114.4	114.7	24	113.0	114.1	114.9	24	118.8	119.1	119.4	24
4/20	117.1	117.5	117.7	24	114.3	114.7	114.9	24	115.4	115.6	115.7	24	113.9	114.5	115.2	24	119.6	120.1	120.4	24
4/21	115.5	116.0	116.7	24	113.0	113.7	114.5	24	114.6	114.9	115.2	24	113.0	113.4	113.9	24	118.8	119.3	119.6	24

Two-Week Summary of Passage Indices

<b>COMBINED YEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
04/08/2011 *	849	---	236	269	38,658	---	---	7	---	2,123	1,366
04/09/2011 *	1,074	---	256	92	20,786	11,283	---	9	---	1,849	2,029
04/10/2011 *	415	321	377	153	18,282	---	124	1	---	1,804	1,937
04/11/2011 *	562	---	332	81	29,125	---	---	4	---	2,715	2,168
04/12/2011 *	398	3,382	274	35	17,638	---	---	5	---	3,543	2,111
04/13/2011 *	395	4,540	471	73	19,765	---	170	4	2,367	3,936	4,041
04/14/2011 *	296	4,855	290	106	25,734	11,964	---	6	---	3,505	1,580
04/15/2011 *	647	2,705	231	56	20,465	---	---	0	3,958	2,962	5,104
04/16/2011 *	102	646	148	70	19,468	---	676	3	---	3,725	42,898
04/17/2011 *	126	444	801	68	22,670	---	---	6	10,332	2,864	41,110
04/18/2011 *	334	784	430	116	32,440	---	---	21	---	4,008	23,374
04/19/2011 *	942	1,584	451	563	35,366	29,123	558	40	13,445	5,774	19,266
04/20/2011 *	1,298	896	424	602	36,835	---	---	132	---	8,558	18,170
04/21/2011 *	394	---	396	390	35,759	---	---	370	24,643	8,921	13,058
04/22/2011	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>7,832</b>	<b>20,157</b>	<b>5,117</b>	<b>2,674</b>	<b>372,991</b>	<b>52,370</b>	<b>1,528</b>	<b>608</b>	<b>54,745</b>	<b>56,287</b>	<b>178,212</b>
<b># Days:</b>	<b>14</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>5</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>559</b>	<b>2,016</b>	<b>366</b>	<b>191</b>	<b>26,642</b>	<b>17,457</b>	<b>382</b>	<b>43</b>	<b>10,949</b>	<b>4,021</b>	<b>12,729</b>
<b>YTD</b>	<b>27,364</b>	<b>27,569</b>	<b>6,156</b>	<b>6,489</b>	<b>497,335</b>	<b>54,046</b>	<b>1,640</b>	<b>649</b>	<b>54,745</b>	<b>63,807</b>	<b>207,421</b>

<b>COMBINED SUBYEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
04/08/2011 *	0	---	0	1	172	---	---	7	---	10	1,210
04/09/2011 *	0	---	0	0	0	0	---	12	---	64	1,519
04/10/2011 *	0	0	0	2	165	---	0	19	---	92	1,182
04/11/2011 *	0	---	0	2	302	---	---	15	---	143	918
04/12/2011 *	0	0	0	0	0	---	---	14	---	343	1,630
04/13/2011 *	0	0	0	2	147	---	0	33	632	429	933,041
04/14/2011 *	0	0	0	0	0	9	---	18	---	358	526,510
04/15/2011 *	0	0	0	2	0	---	---	10	532	286	89,616
04/16/2011 *	0	0	0	0	0	---	0	7	---	287	59,650
04/17/2011 *	0	0	0	0	0	---	---	9	1,018	115	39,753
04/18/2011 *	0	0	0	0	0	---	---	11	---	0	48,831
04/19/2011 *	0	0	0	0	0	0	0	27	713	96	25,763
04/20/2011 *	0	5	0	0	302	---	---	9	---	0	15,857
04/21/2011 *	0	---	0	0	0	---	---	4	526	172	10,637
04/22/2011	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>9</b>	<b>1,088</b>	<b>9</b>	<b>0</b>	<b>195</b>	<b>3,421</b>	<b>2,395</b>	<b>1,756,117</b>
<b># Days:</b>	<b>14</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>5</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>78</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>684</b>	<b>171</b>	<b>125,437</b>
<b>YTD</b>	<b>9</b>	<b>11</b>	<b>10</b>	<b>47</b>	<b>2,029</b>	<b>9</b>	<b>0</b>	<b>305</b>	<b>3,421</b>	<b>2,434</b>	<b>1,805,099</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)	
04/08/2011	*	0	---	0	1	344	---	---	6	---	27	8,059
04/09/2011	*	0	---	0	1	0	---	---	1	---	49	10,202
04/10/2011	*	0	0	0	0	165	---	0	3	---	0	11,601
04/11/2011	*	0	---	0	0	151	---	---	0	---	0	11,760
04/12/2011	*	0	0	0	0	0	---	---	0	---	0	13,681
04/13/2011	*	0	0	0	0	0	---	0	1	252	0	9,493
04/14/2011	*	0	0	0	2	0	143	---	3	---	0	3,907
04/15/2011	*	0	0	0	0	0	---	---	0	530	0	3,302
04/16/2011	*	0	0	0	2	0	---	0	3	---	172	2,505
04/17/2011	*	0	0	0	0	0	---	---	4	1,524	0	305
04/18/2011	*	0	0	0	1	0	---	---	3	---	96	596
04/19/2011	*	0	0	0	5	0	0	0	16	1,817	143	1,130
04/20/2011	*	0	0	0	10	0	---	---	35	---	0	2,628
04/21/2011	*	0	---	0	6	0	---	---	20	4,207	515	1,761
04/22/2011		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>660</b>	<b>143</b>	<b>0</b>	<b>95</b>	<b>8,330</b>	<b>1,002</b>	<b>80,930</b>
<b># Days:</b>		<b>14</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>5</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>47</b>	<b>48</b>	<b>0</b>	<b>7</b>	<b>1,666</b>	<b>72</b>	<b>5,781</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>2,213</b>	<b>143</b>	<b>0</b>	<b>133</b>	<b>8,330</b>	<b>1,075</b>	<b>87,557</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)	
04/08/2011	*	1	---	18	6	62,025	---	---	4	---	5,725	590
04/09/2011	*	3	---	16	5	18,707	33,353	---	4	---	10,254	887
04/10/2011	*	4	117	13	5	31,788	---	219	0	---	22,082	1,152
04/11/2011	*	12	---	5	3	17,354	---	---	3	---	23,466	995
04/12/2011	*	30	37	11	6	18,971	---	---	2	---	29,487	1,817
04/13/2011	*	20	34	57	5	13,598	---	133	3	27,273	25,332	1,379
04/14/2011	*	43	25	118	21	15,772	7,064	---	2	---	23,818	2,161
04/15/2011	*	40	26	114	28	12,415	---	---	1	15,808	20,449	1,051
04/16/2011	*	17	9	70	38	18,161	---	351	1	---	17,364	939
04/17/2011	*	34	22	417	25	33,144	---	---	2	12,873	13,860	1,413
04/18/2011	*	94	74	254	27	55,876	---	---	9	---	19,612	2,084
04/19/2011	*	59	131	238	60	34,016	22,659	452	5	5,696	19,997	1,162
04/20/2011	*	35	148	128	55	42,572	---	---	16	---	18,110	2,057
04/21/2011	*	17	---	73	101	40,911	---	---	14	13,555	16,927	1,981
04/22/2011		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>409</b>	<b>623</b>	<b>1,532</b>	<b>385</b>	<b>415,310</b>	<b>63,076</b>	<b>1,155</b>	<b>66</b>	<b>75,205</b>	<b>266,483</b>	<b>19,668</b>
<b># Days:</b>		<b>14</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>5</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>29</b>	<b>62</b>	<b>109</b>	<b>28</b>	<b>29,665</b>	<b>21,025</b>	<b>289</b>	<b>5</b>	<b>15,041</b>	<b>19,035</b>	<b>1,405</b>
<b>YTD</b>		<b>432</b>	<b>2,650</b>	<b>1,680</b>	<b>519</b>	<b>1,093,338</b>	<b>245,568</b>	<b>1,799</b>	<b>102</b>	<b>75,205</b>	<b>276,188</b>	<b>21,107</b>

Two-Week Summary of Passage Indices

<b>COMBINED SOCKEYE</b>												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
04/08/2011	*	0	---	0	0	0	---	0	---	71	93	
04/09/2011	*	0	---	0	0	799	874	---	1	96	179	
04/10/2011	*	0	0	0	0	1,153	---	62	0	275	116	
04/11/2011	*	0	---	0	0	453	---	---	0	286	153	
04/12/2011	*	0	0	0	0	593	---	---	0	104	107	
04/13/2011	*	0	0	0	0	441	---	45	3	674	247	
04/14/2011	*	0	0	0	0	968	429	---	0	429	0	
04/15/2011	*	0	0	0	0	955	---	---	0	654	343	
04/16/2011	*	0	0	0	0	915	---	37	1	802	157	
04/17/2011	*	0	0	0	0	265	---	---	0	474	172	
04/18/2011	*	0	0	0	0	794	---	---	0	286	0	
04/19/2011	*	0	0	0	0	1,620	833	28	19	643	477	
04/20/2011	*	0	0	0	0	302	---	---	4	515	210	
04/21/2011	*	0	---	0	0	303	---	---	19	1,091	286	
04/22/2011		---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9,561</b>	<b>2,136</b>	<b>172</b>	<b>47</b>	<b>3,536</b>	<b>4,571</b>	<b>1,769</b>
<b># Days:</b>		<b>14</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>5</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>683</b>	<b>712</b>	<b>43</b>	<b>3</b>	<b>707</b>	<b>327</b>	<b>126</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26,091</b>	<b>4,487</b>	<b>299</b>	<b>47</b>	<b>3,536</b>	<b>4,725</b>	<b>2,075</b>

<b>COMBINED LAMPREY JUVENILES</b>												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>†</sup> (Coll)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)	
04/08/2011	*	0	---	0	0	500	---	1	---	5,946	204	
04/09/2011	*	0	---	0	0	300	2,001	---	0	4,650	308	
04/10/2011	*	0	0	0	0	200	---	0	1	10,060	438	
04/11/2011	*	0	---	0	0	0	---	0	---	12,867	560	
04/12/2011	*	0	0	0	0	0	---	0	---	12,127	1,170	
04/13/2011	*	0	0	0	0	0	---	0	6,100	6,250	1,994	
04/14/2011	*	0	0	0	0	100	---	0	---	8,650	4,171	
04/15/2011	*	0	0	0	0	100	---	1	7,240	5,420	1,450	
04/16/2011	*	0	0	0	0	0	---	0	---	5,720	600	
04/17/2011	*	0	0	0	0	100	---	1	1,620	8,680	490	
04/18/2011	*	0	0	0	0	0	---	2	---	7,500	550	
04/19/2011	*	0	0	0	0	0	40	0	1	720	3,767	
04/20/2011	*	0	0	0	0	0	---	---	1	2,247	215	
04/21/2011	*	0	---	0	0	0	---	0	980	1,920	125	
04/22/2011		---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,200</b>	<b>2,141</b>	<b>0</b>	<b>8</b>	<b>16,660</b>	<b>95,804</b>	<b>12,703</b>
<b># Days:</b>		<b>14</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>5</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>86</b>	<b>714</b>	<b>0</b>	<b>1</b>	<b>3,332</b>	<b>6,843</b>	<b>907</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,527</b>	<b>2,691</b>	<b>0</b>	<b>32</b>	<b>16,660</b>	<b>112,315</b>	<b>16,552</b>



## Two-Week Summary of Passage Indices

\* 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, sockeye, and lamprey juveniles. Two classes of fish counts are shown in these tables:

Two classes of fish counts are shown in these tables:

Collection counts (Coll), which account for sample rates but are not adjusted for flow;

Passage indices (INDEX), 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.

Combined lamprey juvenile collection counts are provided for all sites. Combined lamprey juveniles is a combination of pacific lamprey ammocoetes, brook lamprey ammocoetes, unknown lamprey ammocoetes, and pacific lamprey macrophthalmia.

† Caution should be used with interpreting lamprey juvenile collection counts at LGR because of the possibility that lamprey may escape the sample tank before being sampled

### 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 =  $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

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

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

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

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

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

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

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

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

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

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.

RIS data collected for the FPC by Chelan Co. PUD/Washington Dept. of Fish and Wildlife.

LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.

LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.

IMN data collected for the FPC by the Nez Perce Tribe.

Cumulative Adult Passage at Mainstem Dams Through: 04/21

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2011		2010		10-Yr Avg.		2011		2010		10-Yr Avg.		2011		2010		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	04/21	2332	12	68393	303	56867	193	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/21	516	5	35107	119	33005	78	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/21	282	1	26670	179	22981	42	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/21	139	0	13556	100	16010	41	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/21	96	0	4901	33	9328	13	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/21	37	0	2620	10	6858	6	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/21	32	0	995	36	4923	31	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/21	17	0	433	12	3634	2	0	0	0	0	0	0	0	0	0	0	0	0
PRD	04/18	12	0	147	0	477	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	04/20	4	0	50	1	228	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH	04/20	0	0	7	1	7	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	04/20	154	0	7321	41	-	-	-	-	-	-	-	-	0	0	0	0	-	-

DAM	Coho						Sockeye			Steelhead			
	2011		2010		10-Yr Avg.		2011	2010	10-Yr Avg.	2011	2010	10-Yr Avg.	Wild 2011
	Adult	Jack	Adult	Jack	Adult	Jack							
BON	0	0	0	0	0	0	0	1	0	1907	3601	2087	800
TDA	0	0	0	0	0	0	0	1	0	961	1632	994	562
JDA	0	0	0	0	0	0	0	0	0	2165	1832	2062	1394
MCN	0	0	0	0	0	0	0	0	0	2066	1613	1708	1288
IHR	0	0	0	0	0	0	0	0	0	2207	2247	2145	801
LMN	0	0	0	0	0	0	0	0	0	2667	2988	2388	1338
LGS	0	0	0	0	0	0	0	0	0	4521	2053	2305	2176
LGR	0	0	0	0	0	0	0	0	0	10534	8994	8558	4523
PRD	0	0	0	0	0	0	0	0	0	2	22	5	0
RIS	0	0	0	0	0	0	0	0	0	10	41	22	0
RRH	0	0	0	0	0	0	0	0	0	55	126	80	0
WEL	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	0	0	0	0	-	-	-	-	-	6753	9460	-	-

PRD does not post 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: 04/21/11

BON counts from January 1, 2009 to March 15, 2010 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2011	49	1	1,419	600
2010	39	0	2,318	657

## 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>											
	04/12/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/21/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Little Goose Dam</b>											
	04/13/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/18/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Lower Monumental Dam</b>											
	04/16/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	04/14/11	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	04/18/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	04/09/11	Chinook + Steelhead	63	1	1	1.59%	0.00%	0	1	0	0
	04/12/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	04/16/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/19/11	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Rock Island Dam</b>											
	04/21/11	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0

### Two Week Transportation Summary

Source: Fish Passage Center

Updated:

4/22/11 11:48 AM

		Species					
		04/08/11 TO 04/22/11					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	700	255,548	400	282,652	6,700	546,000
	Sum of NumberBarged	107	30,267	0	29,210	885	60,469
	Sum of NumberBypassed	591	225,245	400	253,436	5,796	485,468
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	12	0	3	6	23
	Sum of FacilityMorts	0	24	0	3	13	40
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2	36	0	6	19	63
<b>LGS</b>	Sum of NumberCollected		36,514	100	43,856	1,487	81,957
	Sum of NumberBarged		0	0	0	0	0
	Sum of NumberBypassed		36,504	100	43,848	1,478	81,930
	Sum of Numbertrucked		0	0	0	0	0
	Sum of SampleMorts		4	0	4	2	10
	Sum of FacilityMorts		6	0	4	7	17
	Sum of ResearchMorts		0	0	0	0	0
	Sum of TotalProjectMorts		10	0	8	9	27
<b>LMN</b>	Sum of NumberCollected		998		705	92	1,795
	Sum of NumberBarged		0		0	0	0
	Sum of NumberBypassed		997		705	92	1,794
	Sum of Numbertrucked		0		0	0	0
	Sum of SampleMorts		1		0	0	1
	Sum of FacilityMorts		0		0	0	0
	Sum of ResearchMorts		0		0	0	0
	Sum of TotalProjectMorts		1		0	0	1
<b>MCN</b>	Sum of NumberCollected	1,843	29,845	4,541	38,763	1,864	76,856
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,833	29,811	4,539	38,752	1,857	76,792
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	7	12	1	2	0	22
	Sum of FacilityMorts	3	22	1	9	7	42
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	10	34	2	11	7	64
Total Sum of NumberCollected		2,543	322,905	5,041	365,976	10,143	706,608
Total Sum of NumberBarged		107	30,267	0	29,210	885	60,469
Total Sum of NumberBypassed		2,424	292,557	5,039	336,741	9,223	645,984
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		9	29	1	9	8	56
Total Sum of FacilityMorts		3	52	1	16	27	99
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		12	81	2	25	35	155

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/22/11 11:48 AM

TO: 04/22/11

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	1,275	331,103	1,359	18,189	671,001	1,022,927
	Sum of NumberBarged	155	38,489	160	1,552	53,273	93,629
	Sum of NumberBypassed	1,114	292,557	1,198	16,556	617,707	929,132
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	6	24	1	50	16	97
	Sum of FacilityMorts	0	33	0	31	5	69
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	6	57	1	81	21	166
<b>LGS</b>	Sum of NumberCollected		37,764	100	3,240	179,957	221,061
	Sum of NumberBarged		0	0	0	0	0
	Sum of NumberBypassed		37,754	100	3,227	179,948	221,029
	Sum of NumberTrucked		0	0	0	0	0
	Sum of SampleMorts		4	0	3	4	11
	Sum of FacilityMorts		6	0	10	5	21
	Sum of ResearchMorts		0	0	0	0	0
	Sum of TotalProjectMorts		10	0	13	9	32
<b>LMN</b>	Sum of NumberCollected		1,092		200	1,218	2,510
	Sum of NumberBarged		0		0	0	0
	Sum of NumberBypassed		1,091		200	1,218	2,509
	Sum of NumberTrucked		0		0	0	0
	Sum of SampleMorts		1		0	0	1
	Sum of FacilityMorts		0		0	0	0
	Sum of ResearchMorts		0		0	0	0
	Sum of TotalProjectMorts		1		0	0	1
<b>MCN</b>	Sum of NumberCollected	1,843	29,845	4,541	1,864	38,763	76,856
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,833	29,811	4,539	1,857	38,752	76,792
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	7	12	1	0	2	22
	Sum of FacilityMorts	3	22	1	7	9	42
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	10	34	2	7	11	64
Total Sum of NumberCollected		3,118	399,804	6,000	23,493	890,939	1,323,354
Total Sum of NumberBarged		155	38,489	160	1,552	53,273	93,629
Total Sum of NumberBypassed		2,947	361,213	5,837	21,840	837,625	1,229,462
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		13	41	2	53	22	131
Total Sum of FacilityMorts		3	61	1	48	19	132
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		16	102	3	101	41	263