



Fish Passage Center

Weekly Report #12 - 05

April 13, 2012

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 18% and 75% of average at individual sub-basins over the first portion of April. Precipitation above The Dalles has been 63% of average over April. Over the 2012 water year, precipitation has ranged between 81% and 115% of average.

Table 1. Summary of April precipitation and cumulative October through April 9, 2012 precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2012 April 1-9, 2012		Water Year 2012 October 1, 2011 to April 9, 2012	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.33	67	16.56	112
Snake River Above Ice Harbor	0.22	50	10.85	101
Columbia Above The Dalles	0.31	63	15.88	107
Kootenai	0.39	75	17.00	112
Clark Fork	0.24	63	10.76	115
Flathead	0.13	27	13.60	107
Pend Oreille/ Spokane	0.50	73	22.83	109
Central Washington	0.12	64	4.94	81
Snake River Plain	0.06	18	6.38	99
Salmon/Boise/ Payette	0.22	47	13.35	101
Clearwater	0.60	75	21.39	110
SW Washington Cascades/Cowlitz	0.99	62	53.68	97
Willamette Valley	1.00	69	49.05	105

Average snowpack in the Columbia River for basins above the Snake River confluence is 112% of average, for Snake River Basins the average snowpack

is 79% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 110% of average.

The NWRFC has eliminated the distribution of their Multiple Linear Regression Water Supply Forecasts as their "Official" forecast and are now producing ESP (Ensemble Streamflow Prediction) forecasts at least once per week. The "Official" March ESP forecast was produced on March 7, 2012 and the "Official" April ESP forecast was produced on April 5, 2012.

Table 2 displays the March 7th and April 5th ESP runoff volume forecasts for multiple reservoirs. The April 5th "Official" forecast at The Dalles between January and July is 114135 Kaf (106% of average).

Table 2. March and April "Official" ESP Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Location	March 7, 2012 ESP		April 5, 2012 ESP	
	% Average (1971 -2000)	Runoff Volume (Kaf)	% Average (1971 -2000)	Runoff Volume (Kaf)
The Dalles (Jan-July)	93	99564	106	114135
Grand Coulee (Jan-July)	96	60617	110	69099
Libby Res. Inflow, MT (Apr-Aug)	103	6442 5635*	117	7312 6872*
Hungry Horse Res. Inflow, MT (Jan-July)	87	1937	103	2285
Lower Granite Res. Inflow (Apr- July)	89	19085	106	22825
Brownlee Res. Inflow (Apr-July)	82	5149	103	6512
Dworshak Res. Inflow (Apr-July)	96	2528 2585*	109	2874 2966*

* Denotes COE Forecast

Grand Coulee Reservoir is at 1242.4 feet (4-12-12) and drafted 9.9 feet over the last week. Outflows at Grand Coulee have ranged between 152.8 and 168.2 Kcfs over the last week. The end of April FC Elevation at Grand Coulee is 1220.2 feet.

The Libby Reservoir is currently at elevation 2389.2 feet (4-12-12) and has drafted 7.4 feet last week. The end of April FC Elevation at Libby is 2377.3 feet. Outflows at Libby Dam have been 25.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3525.7 feet (4-12-12) and has drafted 2.3 feet last week. Outflows at Hungry Horse have ranged between 6.5 and 9.5 Kcfs last week. The end of April FC Elevation at Hungry Horse is 3521.7 feet.

Dworshak is currently at an elevation of 1515.2 feet (4-12-12) and has drafted 8.4 feet last week. The end of April System Flood Control Elevation is 1499.6 feet. Outflows from Dworshak have been 19.4 Kcfs over the past week.

The Brownlee Reservoir was at an elevation of 2028.2 feet on April 11th, 2012 drafting 7.5 feet last week. Over the last week, outflows at Brownlee have ranged between 39.8 and 44.5 Kcfs. The end of April FC Elevation at Brownlee is 2014.3 feet.

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 from April 3-12 have averaged 104.5 Kcfs.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 260 Kcfs at McNary Dam (began April 10th) and 135 Kcfs at Priest Rapids Dam (began April 10th). Flows at McNary Dam have averaged 289.0 Kcfs between April 10-12. Flows at Priest Rapids Dam have averaged 182.7 Kcfs between April 10-12.

Spill:

Spill occurred at Dworshak Dam over the past week as the project increased outflow to draft to its end of April flood control elevation. Spill for fish passage began on April 3rd at the lower Snake River projects, and on April 10th at the lower Columbia River projects.

In general, flows have remained high over the past week. At several hydro projects in the FCRPS, there are turbine units out of service limiting the

hydraulic capacities of the projects, and potentially causing additional spill. Presently, in the Snake River there is one unit out at Lower Granite, Lower Monumental and Ice Harbor dams. In the lower Columbia River there are two units out at McNary Dam; four units at John Day Dam; two to four units at The Dalles Dam and one unit at Bonneville Dam.

At Lower Granite Dam spill has met the Court Ordered 20 Kcfs, and exceeded that level during some nighttime hours. 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 112% to 114%, below the 120% TDG waiver. At Lower Monumental Dam the COE implemented 28 Kcfs spill to the gas cap volume, and then adjusted downward 26 Kcfs to address TDG at the Ice Harbor Dam forebay. Spill was increased again to 28 Kcfs on April 12th as the forebay TDG at Ice Harbor Dam decreased below 115%. At Ice Harbor Dam the Court Order calls for 45 Kcfs spill during the day and gas cap spill at night, until the “test-like” spill amounts are implemented. Spill has met the 45 Kcfs/gas cap specifications.

Project	Day/Night Spill
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 10th. Spill at McNary Dam was 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. This level will be changed to alternating 30% and 40% levels during the upcoming test period. At The Dalles Dam, spill has met the 40% objective. TDG at the Bonneville forebay exceeded the 115% criteria on two days, but given that TDG upstream was considerably below the waivers, it is unlikely that this was due to spill. At Bonneville Dam spill met, or exceeded, the 100 Kcfs in the Court Order From April 10th until April 12th, when spill was reduced to less than the 100 Kcfs. .

Project	Day/Night Spill
McNary	40%/40%
John Day	Pre-test: 30%/30% Testing: 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 and Bonneville dams. There were no fish observed with signs of GBT at the projects, with the exception of McNary Dam where three fish were observed with Rank 1 signs of GBT on April 12th.

Smolt Monitoring:

Smolt monitoring is ongoing at Bonneville Dam (BON), Lower Granite Dam (LGR), Little Goose Dam (LGS), Lower Monumental Dam (LMN), Rock Island Dam (RIS), and the four SMP traps. Smolt monitoring activities began on April 10th at McNary Dam (MCN) with the first sample available on April 11th. SMP personnel at MCN will be taking a sample every-other-day until transportation begins, which will likely be mid- to late July. All SMP sites are now sampling for the 2012 out-migration.

Compared to a week ago, the passage index for yearling Chinook at BON increased. The daily average passage index at BON for yearling Chinook this week was nearly 1,100 per day. Subyearling Chinook numbers increased substantially this week. This is due to the release of approximately 925,000 subyearling fall Chinook tules from Spring Creek NFH on Wednesday, April 11th. Spring Creek NFH is located 35 kilometers above BON. Subyearling Chinook from Spring Creek NFH were first encountered in the sample at BON at 0040 on April 12th. For the week prior to the April 12th sample, the average daily passage index for subyearling Chinook was about 3,000 per day. The daily average passage index for the April 12th and April 13th samples was 89,228 per day. Subsequent to the arrival of these Spring Creek subyearling Chinook, mortality rates increased. The daily sample mortality for subyearling Chinook on the sample ending on April 12th was 5.6%. For the April 13th sample, this daily sample mortality rate had increased to 15.2%. This high mortality is likely due to the fact that BON is currently operating

the turbines in the second powerhouse at the upper end of the 1% peak efficiency range. The typical operation during Spring Creek passage is to operate these turbines at the lower end of this efficiency range. However, due to high flows, this is not possible without increasing spill or flows through the first powerhouse. The salmon managers are currently exploring ways to operate the second powerhouse at the mid-range of the 1% peak efficiency range.

Indices of coho, steelhead, and sockeye juvenile also increased this week. Finally, there was an increase in the collection counts of juvenile lamprey this week. The daily average collection for pacific lamprey macrophthalmia this week 767 per day, compared to 155 last week.

Yearling Chinook continue to be the dominate species of salmonid, with an average daily passage index of 3,133 per day. In fact, yearling Chinook numbers this week increased over last week. Steelhead passage at JDA also increased this week, with a daily passage index of nearly 1,000 steelhead juveniles per day. The collection counts of juvenile lamprey have also increased at JDA this week, with a daily average collection of over 18,200 pacific macrophthalmia and 37 pacific ammocoetes per day. So far, data from only one of sampling are available from MCN. Yearling Chinook were the dominate species of salmonids at MCN this week, with an estimated passage index of 1,043 on April 11th. Steelhead were the second most abundant species, with an estimated passage index of 442. MCN also collected a few subyearling Chinook (fry), coho, and pacific lamprey macrophthalmia in their April 11th sample.

Yearling Chinook continue to be the dominant species at LGR. Compared to last week's samples, the passage index for yearling Chinook at LGR decreased this week, with an average daily passage index of 15,741 per day. The passage index for steelhead increased this week, with an average daily passage index of nearly 7,300 per day. LGR continued to collect relatively few subyearling Chinook (fry), coho, and sockeye/kokanee over the past week. Finally, the collection counts of juvenile lamprey at LGR have averaged about 7 per day for pacific macrophthalmia. No pacific lamprey ammocoetes were collected at LGR this week.

Sampling at LGS and LMN is limited and for condition monitoring only. During the sampling for this week, yearling Chinook and steelhead have been

the dominant salmonid species at these two projects. However, both sites have collected a few sockeye, subyearling Chinook (fry) and lamprey juveniles this week. Rock Island Dam continued to collect very few juveniles this week.

The Grande Ronde Trap continues to collect mostly yearling Chinook. Compared to last week, the collection of yearling Chinook decreased, with a daily average collection of 507 fish per day. Of the yearling Chinook collected over the past week, the proportion that are of known hatchery origin has decreased in recent samples. Collections of steelhead have increased over the past week, mostly due to a large influx of hatchery steelhead on April 11th. The first clipped steelhead was collected on April 9th. Since that time, the proportion of the steelhead collection that are clipped has been in the 0.95 to 0.98 range.

Yearling Chinook continue dominate the collection at the Salmon River Trap. However, the daily average collection for yearling Chinook this week was nearly identical to that from at last week. Of the yearling Chinook being collected at this trap this week, approximately 27% were unmarked. Daily steelhead collections at this trap remained low over the past week, with a daily average collection of 13 per day.

Collections of yearling Chinook at the Snake River Trap decreased this week. However, yearling Chinook are still the dominate species of salmonids at this site. The daily average collection for yearling Chinook was 26 fish per day this week. Of the yearling Chinook collected at this trap this week, approximately 47% were unmarked. The Snake River Trap continues to collect very few steelhead juveniles. To date, only 129 juvneile steelhead have been collected at this site.

After a period high flows and debris, the Imnaha Trap went back into operation on April 2nd. Since this time, the daily average collection of yearling Chinook is 740 fish per day. However, recent collections indicate that yearling Chinook numbers have decreased over the past nine days. The daily average collection for steelhead over the past nine days is 97 fish per day. As with yearling Chinook, it appears that steelhead numbers have also decreased this week.

Adult Fish Passage:

The historical counting schedule at Bonneville Dam began March 15th and continues through November 15th. This counting schedule allows for

comparison of current year counts with historical data. The historical counting schedule begins, April 1st, for The Dalles Dam, John Day Dam, McNary Dam, Lower Monumental Dam and Little Goose Dam. Willamette Falls Dam counts adult salmon throughout the entire year, while Lower Granite Dam started counting on March 1st.

Adult counts at Bonneville Dam have been updated through April 12th. From March 15th through April 12th, daily adult spring Chinook counts at Bonneville Dam ranged from 6 to 41 adult salmon per day. As of April 5th, using the historical counting schedule, 165 spring Chinook have been counted at Bonneville Dam. In 2011, 739 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2012 adult spring Chinook count at Bonneville Dam is 22.3% of the 2011 count and only 1.7% of the 10 year average of 9,791. At Willamette Falls Dam 12 adult spring Chinook has been counted so far this year.

The Bonneville Dam 2012 steelhead count of 1,909 is about 1.19 times greater than the 2011 count of 1,601 and 1.22 times greater than the 10 year average count of 1,562. The 2012 Bonneville wild adult steelhead count of 579 is about 83.2% of the 2011 count of 696, while being about 1.28 times greater than the 10 year average count of 451. 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 121 to 180 adults per day last week. This year's Lower Granite steelhead count of 6,761 is about 74.9% of the 2011 count of 9,027 and 84.8% of the 10 year average of 7,972. The 2012 Lower Granite wild adult steelhead count of 2,590 is about 71.2% of the 2011 count of 3,636, while being about 1.25 times greater than the 10 year average count of 2,064. At Willamette Falls Dam, the 2012 count for steelhead was 4,306, as of April 10th. This year's steelhead count is about 69.3% of the 2011 count of 6,214 and about 62.6% of the 10 year average count. At Bonneville Dam, daily counts of adult salmon and steelhead found on the separator and bypassed are being tracked this year for the period of March 1st to April 20th. Daily adult steelhead bypassed counts have ranged from 0 to 6. A total of 64 adult steelhead and 4 salmon have been bypassed so far this year.

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. Several releases of yearling fall Chinook were scheduled to begin this week. In all, these releases were expected to total about 940,000. Of these, approximately 52% were to be released below from Lyons Ferry Hatchery (below Little Goose Dam) while 48% were to be released from acclimations ponds in the Clearwater and Snake rivers, above Lower Granite Dam. In addition, a volitional release of approximately 145,000 yearling spring Chinook to the Grande Ronde River began this week. Finally, nearly 2.6 million summer steelhead were scheduled for release into this zone this week. Of these, about 80% were scheduled for release into the Salmon (52%) and Clearwater (28%) river basins. The remaining 20% were scheduled for release into the Wallowa (14%) and Grande Ronde (6%) rivers. Of the 2.6 million steelhead juveniles scheduled for release this week, about 7.2% were unmarked. All of these unmarked steelhead juveniles were to be released into the Clearwater River.

Approximately 447,000 yearling spring Chinook are scheduled for release into this zone over the next two weeks. Of these, 56% are scheduled for release into the Grande Ronde River while 44% are scheduled for release into the Salmon River. In addition to these new releases, several volitional releases of yearling spring Chinook that began weeks ago are scheduled to end this week. Over 2.74 million summer steelhead are scheduled for release to this zone over the next two weeks. Of these, about 44.5% are scheduled for release into the Salmon River and its tributaries and 44% are scheduled for release into the Clearwater River and its tributaries. The remaining 11.5% are scheduled for release into the Grande Ronde River (6.5%) and the Snake River, below Little Goose Dam (5%).

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Approximately 2.74 million yearling summer Chinook were scheduled for release into this zone this week. These summer Chinook were scheduled for release throughout this river zone, including: the Mid-Columbia River (32.5%), the Wenatchee River (32%), the Okanogan River (21%), and the Methow River (14%). In addition, nearly 450,000 coho

juveniles were scheduled for release into this zone this week. These coho juveniles were to be released into the Methow (72%) and Mid-Columbia rivers. All of these coho juveniles are unclipped but are tagged with coded-wire-tags. Finally, about 269,000 summer steelhead juveniles were scheduled for release this week. Of these, approximately 67% were to be released into the Mid-Columbia River from Ringold Springs Hatchery. The remaining 33% were scheduled for release into the Touchet River.

Several releases of yearling spring Chinook are scheduled for this zone over the next two weeks. In all, these releases are expected to total nearly 2.2 million spring Chinook juveniles. Of these, approximately 53% are scheduled for release into the Wenatchee River while 47% are scheduled for release into the Methow River. In addition, about 174,700 yearling summer Chinook are scheduled for release into the Entiat River, beginning on or around April 17th.

Approximately 1.17 million coho juveniles are scheduled for release into this zone over the next two weeks. These coho juveniles are part of the Yakama Tribal program to reintroduce coho to the Wenatchee, Methow, and Yakima rivers. The releases that are scheduled to begin over the next two weeks are scheduled to take place in the Wenatchee (51%) and Yakima (49%) rivers. All of the coho that are to be released to the Wenatchee River are unclipped but are tagged with coded-wire-tags. The Yakima River releases are of clipped and unclipped fish. However, all unclipped fish in the Yakima River releases are tagged with coded-wire-tags. Finally, nearly 642,000 summer steelhead juveniles are scheduled for release for this zone over the next two weeks. Of these, 50% are scheduled for release into the Methow River, 16% are scheduled for direct release into the Mid-Columbia River, 16% are scheduled for release into the Walla Walla River, 10% are scheduled for release into the Okanogan River, and 8% are scheduled for release into the Touchet River.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. Spring Creek NFH and Little White Salmon NFH were scheduled to release approximately 6.0 million and 1.6 million subyearling fall Chinook tules, respectively, on Wednesday, April 11th. However, due to unfavorable conditions in the Bonneville Dam forebay, these releases were delayed. The decision to delay was not made until after Spring Creek NFH had already

release about 925,000 juveniles. On Thursday, April 12th, the COE completed the removal of debris in the Bonneville forebay. With the completion of debris removal, both Spring Creek and Little White Salmon NFH plan to release their remaining fall Chinook tules on Friday, April 13th. These April 13th releases are expected to total approximately 5.25 million from Spring Creek NFH and 1.6 million from Little White Salmon NFH. These juveniles typically arrive at Bonneville Dam within 12-24 hours of release.

In addition, approximately 225,000 yearling spring Chinook were scheduled for release into this zone this week. Of these, approximately 67% were scheduled for release into the Umatilla River while 33% were scheduled for release into Hood River. Finally, about 162,000 summer steelhead were scheduled for release into the Deschutes River this week. These steelhead juveniles were to be released from Round Butte Hatchery.

Approximately 2.86 million yearling spring Chinook are scheduled for release into this zone over the next two weeks. Of these, approximately 41% are scheduled for release into the Wind River, 35% are scheduled for release into the Little White Salmon River, 23% are scheduled for release into the Umatilla River, and 1% are scheduled for release into Hood River. Finally, nearly 253,500 summer steelhead juveniles are scheduled for release into this zone over the next two weeks. These releases are scheduled to take place on the Umatilla (59%), Klickitat (36%), and Deschutes (5%) rivers.

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	3/30/2012		to		04/12/12				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2012	1,122,939	03-28-12	04-05-12	Red River	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2012	120,000	04-11-12	04-12-12	Newsome Creek	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2012	178,800	04-10-12	04-10-12	Meadow Creek - CLES Redhouse (SFK	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2012	179,000	04-12-12	04-13-12	ClearH20 R)	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2012	249,500	04-09-12	04-09-12	Meadow Creek - CLES	S Fk Clearwater River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	90,000	04-09-12	04-09-12	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	90,000	04-10-12	04-10-12	Shoup Br (Salmon R)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	90,000	04-11-12	04-11-12	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	120,000	04-12-12	04-13-12	McNabb/Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2012	830,000	03-27-12	04-13-12	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2012	180,000	04-01-12	04-22-12	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2012	853,000	04-01-12	04-22-12	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2012	2,500,000	03-12-12	04-27-12	Rapid River Hatchery	Little Salmon River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2012	179,000	04-06-12	04-06-12	Sawtooth Hatchery	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2012	1,082,000	04-06-12	04-06-12	Sawtooth Hatchery	Salmon River (ID)
Idaho Dept. of Fish and Game Total					7,864,239				
Nez Perce Tribe	Dworshak NFH	CO	UN	2012	300,000	04-01-12	04-15-12	Kooskia Hatchery	Clearwater River M F
Nez Perce Tribe	Dworshak NFH	ST	SU	2012	40,000	04-02-12	04-02-12	Lolo Creek	Clearwater River M F
Nez Perce Tribe	Dworshak NFH	ST	SU	2012	160,000	04-02-12	04-02-12	Meadow Creek - CLES	S Fk Clearwater River
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2012	265,000	03-22-12	04-01-12	Lostine Accim Pond Big Canyon (Clearwater River)	Wallowa River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2012	150,000	04-10-12	04-20-12	Cpt John Acclim Pond	Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2012	150,000	04-10-12	04-20-12	Pittsburg Landing Acclim Pond	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2012	150,000	04-10-12	04-20-12	Acclim Pond	Snake River South Fork Salmon River
Nez Perce Tribe	McCall Hatchery	CH1	SU	2012	106,000	03-12-12	04-05-12	Johnson Cr Idaho Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2012	195,058	04-01-12	04-15-12	Hatchery	Clearwater River M F
Nez Perce Tribe Total					1,516,058				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2012	160,000	04-11-12	04-11-12	Big Canyon Acclim.Pd (Grande Ronde)	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2012	165,000	03-27-12	04-29-12	Little Sheep Creek	Imnaha River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2012	360,000	04-10-12	04-10-12	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2012	332,877	03-30-12	04-06-12	Imnaha Acclim Pond	Imnaha River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2012	162,000	04-07-12	04-07-12	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife Total					1,179,877				
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2012	300,000	04-02-12	04-02-12	Clear Creek Redhouse (SFK	Clearwater River M F
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2012	400,000	04-02-12	04-02-12	ClearH20 R)	S Fk Clearwater River
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2012	925,391	04-11-12	04-11-12	Spring Creek Hatchery Warm Springs Hatchery	L Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2012	481,751	04-01-12	04-30-12	Hatchery	Deschutes River
U.S. Fish and Wildlife Service Total					2,107,142				
Umatilla Tribe	Cascade Hatchery	CO	UN	2012	1,000,000	04-05-12	04-05-12	Pendelton Acclim Pond Catherine Cr Acclim Pond	Umatilla River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	106,884	03-22-12	04-16-12	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	145,000	04-09-12	04-16-12	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	146,605	03-21-12	04-01-12	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2012	150,000	04-11-12	04-11-12	Corporation Guard Station	Umatilla River
Umatilla Tribe Total					1,548,489				
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2012	75,000	04-08-12	04-23-12	W Fk Hood River	Hood River
Warm Springs Tribe Total					75,000				
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2012	570,000	04-12-12	04-12-12	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2012	584,000	04-12-12	05-05-12	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2012	864,000	04-12-12	04-25-12	Dryden Acclim Pond	Wenatchee River

Hatchery Releases Last Two Weeks

Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2012	490,000	04-10-12	04-15-12	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2012	89,000	04-10-12	04-30-12	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2012	400,000	04-12-12	05-25-12	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2012	50,000	03-15-12	03-31-12	Twisp Acclim Pond Ringold Springs	Methow River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2012	180,000	04-12-12	04-20-12	Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2012	101,000	04-01-12	04-30-12	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2012	101,000	04-01-12	04-30-12	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2012	51,000	04-05-12	05-01-12	Tucannon Hatchery	Tucannon River
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2012	2,575,000	04-01-12	04-05-12	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2012	320,000	04-12-12	04-12-12	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					6,375,000				
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2012	264,721	03-15-12	05-15-12	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2012	265,151	03-15-12	05-15-12	Easton Pond Jack Creek Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2012	267,107	03-15-12	05-15-12	Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2012	100,000	03-02-12	07-01-12	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2012	53,019	04-11-12	04-11-12	Winthrop Hatchery	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2012	57,474	04-06-12	05-01-12	Nason Wetlands	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2012	126,629	04-11-12	04-11-12	Wells Hatchery	Mid-Columbia River
Yakama Tribe	Winthrop NFH	CO	UN	2012	267,710	04-11-12	04-11-12	Winthrop Hatchery	Methow River
Yakama Tribe Total					1,401,811				
Grand Total					22,067,616				

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From:	4/13/2012		to		4/26/2012					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	
Colville Tribe	Wells Hatchery	ST	SU	2012	15,000	04-15-12	04-18-12	Omak Creek	Okanogan River	
Colville Tribe	Wells Hatchery	ST	SU	2012	20,000	04-15-12	04-18-12	Omak Creek	Okanogan River	
Colville Tribe Total					35,000					
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2012	179,000	04-12-12	04-13-12	ClearH20 R)	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	120,000	04-12-12	04-13-12	McNabb/Salmon River	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	200,000	04-13-12	04-17-12	Little Salmon River	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	215,000	04-18-12	04-19-12	Little Salmon River	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	275,000	04-20-12	04-24-12	East Fk Salmon River	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	280,000	04-25-12	04-27-12	Squaw Creek	Salmon River (ID)	
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2012	170,000	04-16-12	04-18-12	Little Salmon River	Salmon River (ID)	
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2012	275,000	04-19-12	04-25-12	Acclim Pond	Salmon River (ID)	
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2012	830,000	03-27-12	04-13-12	Pahsimeroi River	Pahsimeroi River	
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2012	180,000	04-01-12	04-22-12	Pahsimeroi Hatchery	Pahsimeroi River	
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2012	853,000	04-01-12	04-22-12	Pahsimeroi Hatchery	Pahsimeroi River	
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2012	2,500,000	03-12-12	04-27-12	Rapid River Hatchery	Little Salmon River	
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2012	197,000	04-19-12	04-20-12	Yankee Fk (Salmon R)	Salmon River (ID)	
Idaho Dept. of Fish and Game Total					6,274,000					
Nez Perce Tribe	Dworshak NFH	CO	UN	2012	300,000	04-01-12	04-15-12	Kooskia Hatchery Big Canyon (Clearwater River)	Clearwater River M F	
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2012	150,000	04-10-12	04-20-12	Cpt John Acclim Pond	Clearwater River M F	
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2012	150,000	04-10-12	04-20-12	Pittsburg Landing	Snake River	
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2012	150,000	04-10-12	04-20-12	Acclim Pond	Snake River	
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2012	195,058	04-01-12	04-15-12	Nez Perce Tribal Hatchery	Clearwater River M F	
Nez Perce Tribe Total					945,058					
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2012	165,000	03-27-12	04-29-12	Little Sheep Creek	Imnaha River	
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2012	250,000	04-14-12	04-14-12	Lookingglass Creek	Grande Ronde River	
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2012	5,500	04-14-12	04-14-12	Wyachus Creek	Deschutes River	
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2012	8,000	04-14-12	04-14-12	Crooked River (OR)	Deschutes River	
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	ST	SU	2012	50,000	04-24-12	04-24-12	Meacham Creek	Umatilla River	
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2012	7,500	04-14-12	04-14-12	Crooked River (OR)	Deschutes River	
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2012	12,000	04-14-12	04-14-12	Metolius River	Deschutes River	
Oregon Dept. of Fish and Wildlife Total					498,000					
U.S. Fish and Wildlife Service	Carson NFH	CH1	SP	2012	1,170,000	04-19-12	04-19-12	Carson Hatchery	Wind River	
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2012	1,200,000	04-16-12	04-20-12	Dworshak Hatchery	Clearwater River M F	
U.S. Fish and Wildlife Service	Entiat Hatchery	CH1	SU	2012	174,700	04-17-12	04-17-12	Entiat Hatchery	Entiat River	
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2012	754,000	04-13-12	04-29-12	S Fk Salmon River	Salmon River (ID)	
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2012	1,160,000	04-20-12	04-20-12	Leavenworth Hatchery	Wenatchee River	
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2012	1,678,710	04-13-12	04-13-12	Little White Salmon Hatchery	Little White Salmon River	
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH1	SP	2012	759,377	04-19-12	04-19-12	Little White Salmon Hatchery	Little White Salmon River	
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2012	5,250,000	04-13-12	04-13-12	Spring Creek Hatchery	L Col R (D/s McN Dam)	
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2012	481,751	04-01-12	04-30-12	Warm Springs Hatchery	Deschutes River Little White Salmon River	
U.S. Fish and Wildlife Service	Willard Hatchery	CH1	SP	2012	250,000	04-19-12	04-19-12	Willard Hatchery	River	
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2012	551,700	04-15-12	04-30-12	Winthrop Hatchery	Methow River	
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2012	60,200	04-20-12	04-30-12	Winthrop Hatchery	Methow River	
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2012	63,300	04-20-12	04-30-12	Winthrop Hatchery	Methow River	
U.S. Fish and Wildlife Service Total					13,553,738					
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	106,884	03-22-12	04-16-12	Catherine Cr Acclim Pond	Grande Ronde River	
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	145,000	04-09-12	04-16-12	Grande Ronde Acclim Pond	Grande Ronde River	
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2012	217,500	04-23-12	04-30-12	Thornhollow Acclim Pond	Umatilla River	
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2012	442,500	04-23-12	04-30-12	Imeques Acclim Pond	Umatilla River	
Umatilla Tribe	Umatilla Hatchery	ST	SU	2012	50,000	04-23-12	04-30-12	Minthorn Acclimation Pond	Umatilla River	
Umatilla Tribe	Umatilla Hatchery	ST	SU	2012	50,000	04-23-12	04-30-12	Pendelton Acclim Pond	Umatilla River	
Umatilla Tribe Total					1,011,884					

Hatchery Releases Next Two Weeks

Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2012	75,000	04-08-12	04-23-12	W Fk Hood River	Hood River
Warm Springs Tribe Total					75,000				
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2012	584,000	04-12-12	05-05-12	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2012	864,000	04-12-12	04-25-12	Dryden Acclim Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2012	490,000	04-10-12	04-15-12	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2012	53,000	04-20-12	04-30-12	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2012	89,000	04-10-12	04-30-12	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2012	100,000	04-15-12	04-20-12	Walla Walla River	Walla Walla River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2012	140,500	04-15-12	04-20-12	Lyons Ferry Hatchery Cottonwood Acclim	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2012	176,500	04-25-12	05-01-12	Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2012	183,300	04-15-12	04-25-12	Chewuch River	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2012	183,300	04-25-12	04-30-12	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2012	400,000	04-12-12	05-25-12	Carlton Acclim Pond Ringold Springs	Methow River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2012	180,000	04-12-12	04-20-12	Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2012	90,000	04-15-12	05-15-12	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2012	101,000	04-01-12	04-30-12	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2012	101,000	04-01-12	04-30-12	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2012	51,000	04-05-12	05-01-12	Tucannon Hatchery	Tucannon River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2012	30,000	04-25-12	05-10-12	Omak Creek	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2012	100,000	04-25-12	05-10-12	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2012	200,000	04-20-12	05-20-12	Methow River	Methow River
Washington Dept. of Fish and Wildlife Total					4,116,600				
Yakama Tribe	Cascade Hatchery	CO	UN	2012	197,989	04-16-12	04-16-12	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2012	268,671	04-17-12	04-17-12	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2012	264,721	03-15-12	05-15-12	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2012	265,151	03-15-12	05-15-12	Easton Pond Jack Creek Acclim	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2012	267,107	03-15-12	05-15-12	Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2012	64,114	04-16-12	07-01-12	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2012	67,858	04-16-12	07-01-12	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2012	78,892	04-16-12	07-01-12	Easton Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2012	82,621	04-16-12	07-01-12	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2012	93,312	04-16-12	07-01-12	Easton Pond	Yakima River
Yakama Tribe	Methow Hatchery	CH1	SP	2012	60,000	04-19-12	05-02-12	Biddle Pond	Methow River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2012	91,112	04-20-12	07-01-12	Easton Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2012	97,073	04-20-12	07-01-12	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2012	100,000	03-02-12	07-01-12	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CH1	SP	2012	50,000	04-15-12	04-26-12	Winthrop Hatchery	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2012	57,474	04-06-12	05-01-12	Nason Wetlands	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2012	122,063	04-17-12	04-17-12	Leavenworth Hatchery	Wenatchee River
Yakama Tribe Total					2,228,158				
Grand Total					28,737,438				

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

Date	<u>Hungry H. Dnst</u>			#	<u>Boundary</u>			#	<u>Grand Coulee</u>			#	<u>Grand C. Tlwr</u>			#	<u>Chief Joseph</u>			#
	<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
3/30	97.9	98.1	98.1	24	108.1	108.4	108.8	21	104.2	104.3	104.5	24	102.0	102.1	102.2	21	102.2	102.5	102.6	24
3/31	98.0	98.3	98.4	24	111.7	113.8	114.6	23	104.2	104.4	104.6	24	101.9	102.2	102.5	23	102.1	102.3	102.4	24
4/1	97.5	97.9	97.9	24	110.9	112.8	114.1	23	103.3	103.8	104.0	24	100.6	101.2	102.0	23	101.5	101.9	102.0	24
4/2	96.1	96.3	96.5	24	106.9	107.7	109.0	21	102.0	102.3	102.6	24	99.7	99.9	100.3	21	100.4	100.5	100.8	24
4/3	96.7	97.2	97.3	23	109.5	111.3	111.6	23	103.2	103.6	103.9	24	101.7	103.0	113.6	23	101.7	102.1	102.3	24
4/4	97.3	97.6	98.1	24	110.6	111.5	111.8	21	103.5	103.7	103.9	24	117.8	122.1	128.7	21	101.7	101.9	102.2	24
4/5	102.9	107.5	108.8	24	108.7	109.2	110.2	20	103.1	103.3	103.8	24	111.9	112.8	113.8	20	103.3	105.1	114.6	22
4/6	106.3	106.7	107.0	24	107.0	107.6	108.1	22	102.9	103.2	103.8	24	107.2	109.6	110.9	22	114.7	114.7	118.0	11
4/7	105.9	106.0	106.1	24	106.7	107.7	108.9	21	103.6	104.8	105.9	24	104.0	106.0	108.3	21	111.3	112.2	112.5	24
4/8	105.8	106.0	106.2	24	105.6	106.3	107.1	22	104.0	105.0	106.1	24	103.7	105.4	108.1	22	107.4	109.9	111.4	24
4/9	105.9	106.1	106.3	24	106.2	106.8	107.7	18	104.9	105.6	106.9	24	108.0	110.5	113.7	18	105.5	106.7	108.1	24
4/10	104.6	104.9	106.2	24	106.8	107.4	108.2	18	106.7	107.6	108.3	24	104.2	104.5	104.9	18	106.8	108.3	112.1	24
4/11	104.6	104.9	105.1	24	108.0	109.1	109.8	20	107.6	108.1	111.5	24	106.5	107.6	116.0	20	108.9	111.6	112.6	24
4/12	102.8	104.7	104.8	24	109.6	110.5	112.9	21	107.1	107.4	108.0	23	105.0	105.2	105.6	21	104.8	105.1	107.7	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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
3/30	111.6	114.5	116.1	24	---	---	---	0	---	---	---	0	114.0	114.0	114.8	10	114.0	114.0	114.6	10
3/31	111.5	114.0	115.9	24	---	---	---	0	---	---	---	0	113.3	115.7	117.4	24	113.8	115.0	116.7	24
4/1	102.9	104.3	115.8	24	---	---	---	0	---	---	---	0	110.3	111.1	111.6	24	108.3	109.2	110.5	24
4/2	115.2	116.2	117.3	24	---	---	---	0	---	---	---	0	105.4	106.1	108.2	23	105.0	105.4	106.3	23
4/3	117.5	118.4	119.2	24	---	---	---	0	---	---	---	0	104.1	104.4	104.8	24	105.5	106.2	107.0	24
4/4	115.4	118.3	118.8	24	---	---	---	0	---	---	---	0	107.9	109.8	110.3	24	104.7	106.2	107.0	24
4/5	115.8	118.7	119.1	24	---	---	---	0	---	---	---	0	109.4	109.7	109.8	24	106.5	106.7	107.1	24
4/6	116.6	118.2	119.1	18	116.2	116.2	117.3	8	116.3	116.3	119.8	8	108.7	109.2	109.8	24	107.1	107.4	107.9	24
4/7	113.8	115.5	118.7	24	114.1	115.1	116.3	24	115.8	116.7	120.5	24	108.5	109.5	112.0	24	106.9	107.9	109.1	24
4/8	113.3	115.8	118.5	24	111.5	112.6	113.4	24	112.8	113.6	114.6	24	115.1	115.6	115.8	24	109.2	110.2	111.1	24
4/9	111.2	113.1	114.3	24	110.7	112.4	113.1	24	113.0	114.7	116.5	24	115.0	115.3	115.4	24	113.1	113.6	114.2	24
4/10	112.1	113.4	113.7	24	108.3	109.2	109.6	23	110.5	111.4	112.0	23	114.0	114.6	115.0	24	111.1	112.0	113.4	24
4/11	112.6	114.2	115.2	24	109.8	111.1	112.2	24	111.8	112.7	114.4	24	112.1	112.4	113.2	24	109.8	110.2	111.2	24
4/12	112.6	113.7	114.6	24	108.3	109.7	111.6	24	111.4	112.5	113.2	24	110.8	111.0	111.3	23	110.1	111.0	111.6	23

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			#	<u>Rock I. Tlwr</u>			#	<u>Wanapum</u>			#	<u>Wanapum Tlwr</u>			#	<u>Priest Rapids</u>			#
	<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
3/30	114.8	114.8	115.2	10	115.1	115.1	115.6	10	107.7	108.0	108.5	24	112.6	114.3	116.7	24	110.1	111.8	113.4	24
3/31	115.3	116.3	117.3	24	115.8	116.8	117.7	24	109.1	109.9	110.5	24	111.8	112.6	114.1	24	111.1	111.8	114.5	24
4/1	108.7	109.2	111.0	24	109.0	109.5	111.3	24	110.7	111.1	111.4	24	111.6	111.8	113.2	24	110.6	111.2	111.7	24
4/2	105.7	106.7	108.1	24	106.1	107.2	108.5	24	111.3	111.8	112.5	24	111.7	112.1	112.4	24	110.2	111.2	111.8	24
4/3	105.1	106.4	108.1	24	105.8	107.3	108.5	24	110.1	110.6	111.3	24	111.8	112.2	113.1	24	112.7	113.4	114.0	24
4/4	105.3	108.2	109.7	24	103.1	103.4	103.5	24	107.0	108.0	109.0	24	110.5	111.4	111.9	24	110.0	110.4	110.8	24
4/5	108.5	109.1	109.6	24	104.9	108.3	109.9	24	105.0	105.5	105.9	24	108.5	108.7	108.9	24	108.2	108.5	109.1	24
4/6	108.3	109.1	109.7	24	109.1	109.8	110.1	24	105.1	106.2	106.5	24	108.4	108.6	108.7	24	107.7	108.2	108.6	24
4/7	108.4	108.9	109.1	24	109.3	109.7	110.2	24	107.3	107.9	108.3	24	109.8	110.7	112.3	24	109.0	109.9	110.3	24
4/8	113.4	115.9	116.3	24	114.0	116.4	117.1	24	108.2	108.6	108.9	24	112.7	114.2	115.4	24	110.6	111.4	112.1	24
4/9	115.9	117.0	122.1	24	116.4	117.2	122.2	24	110.0	110.8	111.1	24	114.1	115.5	117.7	24	114.1	114.8	115.5	24
4/10	113.9	114.9	116.1	24	114.5	115.3	116.4	24	114.3	115.6	116.0	24	114.5	115.3	116.7	24	113.8	115.2	117.5	24
4/11	111.2	112.5	113.8	24	112.5	113.2	114.2	24	116.1	116.4	116.6	24	116.9	118.5	120.3	24	114.3	114.8	116.2	24
4/12	110.7	111.1	111.6	24	112.2	112.9	113.4	24	112.9	113.4	114.8	24	113.4	113.8	116.4	24	114.7	116.0	116.9	24

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

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

Date	<u>Priest R. Dnst</u>			#	<u>Pasco</u>			#	<u>Dworshak</u>			#	<u>Clrwr-Peck</u>			#	<u>Anatone</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		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
3/30	111.3	113.7	115.9	24	108.1	108.4	108.7	24	105.1	105.7	106.5	17	102.7	103.1	103.8	24	102.8	103.2	103.5	24
3/31	115.7	116.4	118.0	24	108.4	110.1	110.9	24	106.3	106.7	107.4	24	102.8	103.3	103.9	24	102.7	103.1	103.9	24
4/1	110.9	112.2	115.3	24	108.5	109.4	110.7	24	105.2	105.5	105.7	24	101.1	101.8	103.1	24	103.5	104.3	104.7	24
4/2	109.9	110.8	111.5	24	106.5	107.3	107.8	24	105.6	106.1	108.2	24	101.1	102.0	102.7	23	104.9	105.7	106.1	24
4/3	116.2	117.3	117.6	24	108.8	110.0	110.6	24	106.0	106.1	106.4	24	102.4	102.7	103.0	24	106.0	106.7	107.4	24
4/4	115.6	116.1	116.7	24	111.2	111.8	112.3	24	107.2	108.2	108.5	24	102.4	103.0	103.5	24	105.3	105.7	106.2	24
4/5	113.8	114.3	114.5	24	109.8	110.8	111.5	24	111.9	112.6	112.9	24	105.0	106.7	107.4	24	106.0	106.6	107.0	24
4/6	113.6	114.1	114.5	24	109.4	109.8	110.2	24	112.1	112.3	112.4	24	106.4	106.6	106.8	24	105.9	106.3	106.6	24
4/7	113.7	114.6	115.5	24	109.7	110.6	111.1	24	111.8	112.1	112.6	24	106.9	107.6	108.2	24	106.1	106.7	107.4	24
4/8	116.0	116.6	117.0	24	110.5	111.4	112.1	24	112.2	112.6	112.9	24	107.6	108.3	108.7	24	106.2	107.0	107.5	24
4/9	118.6	119.4	120.4	24	112.4	113.2	113.6	24	112.9	113.6	113.8	24	108.1	108.5	108.9	24	106.7	107.3	107.8	24
4/10	119.2	119.7	120.2	24	114.6	115.4	115.9	24	114.5	115.1	115.4	24	108.8	109.6	110.1	24	106.6	107.1	107.6	24
4/11	118.4	119.4	120.9	24	113.9	114.5	115.1	24	115.8	116.3	116.8	24	109.4	109.8	110.6	24	106.0	106.5	107.3	24
4/12	117.9	118.9	120.0	24	111.6	112.5	112.8	24	115.2	115.5	115.7	24	107.6	108.1	108.3	24	105.2	105.8	106.5	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwr-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>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		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
3/30	91.7	91.7	91.7	1	102.7	103.1	103.4	24	112.5	115.7	118.8	24	105.1	105.3	105.4	24	111.4	114.6	119.6	24
3/31	88.4	88.4	88.4	1	103.2	103.6	104.0	24	112.4	115.6	118.8	24	103.4	103.9	104.2	24	113.0	115.1	118.1	24
4/1	87.6	87.6	87.6	1	101.7	102.4	103.1	24	110.9	115.8	118.6	24	105.4	107.0	107.5	24	110.1	113.3	119.5	24
4/2	91.9	91.9	91.9	1	100.3	100.6	101.0	24	108.3	111.4	117.1	24	104.9	105.6	106.8	24	107.7	111.8	119.5	24
4/3	92.6	92.6	92.6	1	103.4	104.5	104.9	23	111.7	114.3	117.5	24	106.6	108.2	109.1	24	115.9	117.7	119.7	24
4/4	100.9	100.9	101.4	13	104.8	105.2	105.5	24	109.6	109.9	110.3	24	107.6	109.0	110.0	24	113.1	113.5	113.9	24
4/5	102.2	103.2	103.8	24	103.8	103.9	104.0	24	109.5	109.6	109.9	24	106.3	106.7	107.0	24	112.6	113.0	113.2	24
4/6	103.3	103.7	104.0	24	103.1	103.2	103.4	24	109.0	109.1	109.4	24	105.8	106.0	106.4	24	112.7	113.1	113.3	24
4/7	104.2	105.4	106.3	24	104.1	104.6	105.4	24	110.5	111.8	116.4	24	105.9	106.2	106.4	24	112.4	113.0	114.8	24
4/8	104.7	105.8	106.8	24	105.3	105.9	106.4	24	109.9	110.2	110.5	24	106.6	106.9	107.3	24	112.1	112.4	112.6	24
4/9	105.0	105.9	106.6	24	106.9	107.5	108.1	24	110.6	111.0	111.4	24	108.0	108.5	109.2	24	112.4	113.0	113.4	24
4/10	105.2	106.0	106.8	24	107.8	108.1	108.5	24	110.4	110.7	110.9	24	110.9	111.1	111.4	24	113.6	114.1	114.9	24
4/11	105.8	106.8	107.6	24	108.1	108.3	108.6	24	110.9	111.1	111.5	24	111.6	111.9	112.3	24	113.8	114.2	114.6	24
4/12	105.2	106.0	107.1	24	106.7	106.9	107.1	24	111.9	113.0	116.8	24	110.5	110.7	110.9	24	113.7	114.4	116.0	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>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		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
3/30	104.6	104.8	105.0	24	110.6	112.3	114.5	24	104.2	104.9	105.3	24	112.6	114.0	114.1	24	---	---	---	0
3/31	106.9	108.4	112.4	24	117.1	119.9	121.5	24	105.2	106.2	107.3	24	116.7	118.3	118.6	24	---	---	---	0
4/1	107.9	109.0	110.5	24	118.3	118.8	119.7	24	107.5	107.9	108.4	24	118.5	119.2	120.0	24	---	---	---	0
4/2	104.9	106.9	109.3	24	119.5	120.7	121.2	24	109.3	110.3	111.3	24	118.6	119.1	120.1	24	---	---	---	0
4/3	110.3	112.0	114.6	24	118.7	119.9	120.7	24	112.0	112.4	112.5	24	118.8	119.4	119.6	24	---	---	---	0
4/4	108.1	109.6	111.3	24	118.5	119.1	119.5	24	112.8	113.2	113.4	24	117.9	118.9	119.3	24	---	---	---	0
4/5	111.5	112.0	113.0	24	118.6	118.8	119.0	24	110.5	110.9	111.6	24	117.4	118.6	119.4	24	---	---	---	0
4/6	110.4	110.5	110.7	24	118.2	118.4	118.8	24	111.4	112.0	112.2	24	117.4	118.8	119.2	24	---	---	---	0
4/7	110.9	111.3	111.5	24	118.6	118.8	119.3	24	112.1	112.6	112.8	24	117.1	118.4	119.1	24	---	---	---	0
4/8	112.2	112.5	112.7	24	118.8	119.2	119.3	24	113.1	113.7	114.3	24	117.2	118.4	119.0	24	---	---	---	0
4/9	113.1	113.3	113.7	24	119.0	119.2	119.6	24	114.5	115.0	115.8	24	117.4	118.8	119.4	24	---	---	---	0
4/10	113.4	113.4	113.6	24	119.4	119.6	120.0	24	116.2	116.5	116.9	24	117.6	119.0	119.3	24	---	---	---	0
4/11	114.1	114.3	114.5	24	119.1	119.5	119.9	24	116.6	116.8	117.0	24	118.0	119.4	120.1	24	---	---	---	0
4/12	113.0	113.2	113.9	24	119.1	119.7	120.9	24	114.5	114.8	115.5	24	118.0	119.6	120.0	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	
3/30	107.5	107.7	107.8	24	115.6	115.9	116.4	24	107.9	108.5	108.9	24	120.0	120.3	120.6	24	112.5	113.6	115.6	24
3/31	108.3	108.5	108.7	24	121.2	122.1	122.5	24	108.4	108.7	108.9	24	120.4	120.7	121.1	24	113.7	114.3	114.8	24
4/1	105.8	106.7	108.1	24	121.6	122.4	122.6	24	107.1	107.5	108.6	24	120.5	120.7	120.8	24	110.6	112.3	113.4	24
4/2	106.2	107.1	107.7	24	120.6	121.0	121.4	24	106.5	106.9	107.4	24	121.6	121.8	122.1	24	116.3	119.0	120.6	24
4/3	107.9	108.3	108.9	24	120.2	120.5	120.7	24	107.9	108.1	108.3	24	122.0	122.2	122.4	24	120.1	121.1	121.7	24
4/4	107.8	108.2	108.7	24	119.4	119.9	120.2	24	108.8	109.3	109.9	24	121.9	122.4	122.8	22	117.7	118.2	119.0	24
4/5	108.1	109.2	109.8	24	118.6	118.7	118.8	24	110.8	111.2	111.4	24	120.5	120.7	120.9	24	118.1	118.7	119.6	24
4/6	109.3	109.6	109.9	24	119.9	120.2	120.4	24	110.7	111.0	111.5	24	120.5	120.7	121.0	24	115.3	115.6	116.2	24
4/7	109.5	109.9	110.2	24	120.3	120.7	120.9	24	109.5	109.7	109.9	24	120.1	120.7	120.9	24	114.2	114.9	115.6	24
4/8	110.6	112.0	113.3	24	119.1	119.3	119.8	24	109.9	110.6	111.3	24	120.3	120.9	121.3	24	114.1	115.0	118.1	24
4/9	113.0	113.9	114.6	24	119.4	119.9	120.6	24	112.1	112.8	113.7	24	119.8	119.9	120.1	24	115.3	116.6	118.8	24
4/10	114.0	114.9	115.8	24	117.6	117.9	119.0	24	114.7	115.4	115.8	24	118.1	120.1	120.6	24	114.2	114.6	115.2	24
4/11	115.0	115.3	115.7	24	118.1	118.4	118.6	24	116.3	116.6	116.9	24	116.3	116.8	118.4	24	113.2	113.4	113.6	24
4/12	113.7	114.0	114.1	24	117.5	117.6	117.8	24	115.5	115.5	115.6	24	116.3	116.9	118.9	24	113.3	113.8	114.0	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	
3/30	114.0	115.1	116.1	24	111.3	111.6	112.4	24	111.5	112.2	113.3	24	108.5	109.2	110.4	24	117.8	119.8	120.6	24
3/31	114.7	115.2	115.6	24	113.6	114.0	114.3	24	114.3	114.7	115.4	24	112.2	113.1	114.1	24	120.7	121.3	121.9	24
4/1	113.4	116.0	118.2	24	111.2	112.0	113.5	24	113.8	114.0	114.3	24	111.0	111.5	111.9	24	119.9	120.1	120.4	24
4/2	119.1	120.9	122.0	24	112.4	115.4	118.7	24	115.3	116.9	118.6	24	112.5	113.2	113.7	24	120.7	121.5	122.4	24
4/3	122.5	123.3	123.7	24	118.7	119.6	120.0	24	119.6	119.9	120.2	24	115.7	117.0	117.7	24	121.3	121.4	121.6	24
4/4	119.8	120.2	120.4	24	119.3	120.0	120.4	24	119.9	120.6	121.1	24	117.8	118.0	118.3	24	120.6	123.6	138.5	24
4/5	120.1	120.6	121.3	24	116.2	116.5	116.9	24	116.4	116.7	117.5	24	116.2	116.8	117.2	24	116.9	117.6	117.9	24
4/6	117.7	118.1	118.7	24	116.6	116.7	116.7	24	116.9	117.3	117.4	24	114.5	115.3	115.6	24	117.9	118.8	120.2	24
4/7	117.3	117.6	118.2	24	116.3	116.7	117.0	24	117.5	117.8	118.2	24	115.0	115.3	115.6	24	120.1	121.3	123.4	24
4/8	118.8	120.3	121.6	24	116.6	116.8	117.0	24	117.4	117.5	118.7	24	114.3	114.7	115.1	24	118.9	119.3	123.0	24
4/9	117.4	119.0	120.9	24	118.7	119.9	120.5	24	118.0	118.9	119.3	24	115.9	116.6	117.0	24	117.8	118.0	118.2	24
4/10	118.4	119.2	119.7	24	118.0	119.6	120.5	24	118.6	119.1	119.7	24	117.7	118.0	118.4	24	118.2	118.7	119.1	24
4/11	117.7	118.0	118.2	24	115.8	116.4	116.6	24	117.0	117.8	118.1	24	116.1	116.8	117.5	24	120.1	121.1	122.8	24
4/12	117.7	118.0	118.2	24	115.3	115.8	116.3	24	116.3	116.6	117.0	24	115.4	116.1	116.6	24	120.4	121.2	121.8	24

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
03/30/2012	*	524	26	573	13	9,447	---	---	---	---	512	
03/31/2012	*	2,244	---	154	45	21,761	---	---	---	---	659	
04/01/2012	*	683	---	210	332	32,165	---	---	3	1,006	962	
04/02/2012	*	658	---	895	258	23,336	600	---	3	655	509	
04/03/2012	*	534	2,075	1,292	155	25,059	3,097	71	2	814	651	
04/04/2012	*	1,351	1,199	1,850	69	13,283	6,867	---	0	1,267	516	
04/05/2012	*	1,032	1,119	517	47	17,203	---	---	3	483	538	
04/06/2012	*	1,434	440	816	70	18,203	---	59	0	853	434	
04/07/2012	*	1,617	508	896	42	11,828	---	---	0	1,346	529	
04/08/2012	*	1,274	775	609	8	10,243	---	---	3	2,227	818	
04/09/2012	*	462	224	330	16	13,443	---	120	0	5,268	872	
04/10/2012	*	553	---	260	10	13,964	2,840	---	0	5,714	1,185	
04/11/2012	*	460	105	264	16	24,242	---	---	0	1,044	3,388	
04/12/2012	*	1,263	211	371	23	18,265	---	217	2	---	2,267	
04/13/2012	*	---	---	---	---	---	---	---	4	---	---	
Total:		14,089	6,682	9,037	1,104	252,442	13,404	467	20	1,044	23,021	12,040
# Days:		14	10	14	14	14	4	4	13	1	11	14
Average:		1,006	668	646	79	18,032	3,351	117	2	1,044	2,093	860
YTD		30,318	9,217	15,208	1,672	279,949	13,409	467	20	1,044	23,021	34,418

COMBINED SUBYEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
03/30/2012	*	0	0	0	0	0	---	---	---	---	4,251	
03/31/2012	*	0	---	1	0	143	---	---	---	---	9,363	
04/01/2012	*	0	---	0	0	0	---	---	0	0	9,155	
04/02/2012	*	0	---	0	1	0	50	---	0	0	6,322	
04/03/2012	*	0	2	0	0	0	0	0	0	0	15,505	
04/04/2012	*	0	0	0	0	0	0	---	3	---	11,203	
04/05/2012	*	0	0	0	0	246	---	---	0	---	4,969	
04/06/2012	*	0	0	0	0	123	---	3	2	---	3,117	
04/07/2012	*	0	0	0	2	62	---	---	0	---	3,375	
04/08/2012	*	0	0	0	0	0	---	---	0	---	2,700	
04/09/2012	*	0	0	0	0	0	---	1	2	---	1,219	
04/10/2012	*	0	---	0	0	0	72	---	2	---	2,170	
04/11/2012	*	0	0	0	2	0	---	---	2	120	3,446	
04/12/2012	*	0	0	0	0	0	---	0	0	---	104,842	
04/13/2012	*	---	---	---	---	---	---	---	4	---	---	
Total:		0	2	1	5	574	122	4	15	120	219	181,637
# Days:		14	10	14	14	14	4	4	13	1	11	14
Average:		0	0	0	0	41	31	1	1	120	20	12,974
YTD		0	2	31	7	607	122	4	15	120	219	223,555

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)	
03/30/2012	*	0	0	0	0	0	---	---	---	---	20	
03/31/2012	*	0	---	0	0	0	---	---	---	---	99	
04/01/2012	*	0	---	0	7	0	---	---	0	---	23	
04/02/2012	*	0	---	0	0	0	---	0	---	0	0	
04/03/2012	*	0	0	0	4	0	---	2	---	0	48	
04/04/2012	*	0	0	0	0	64	0	---	0	---	126	
04/05/2012	*	0	0	0	0	0	---	0	---	0	514	
04/06/2012	*	0	0	0	2	0	---	0	---	0	1,392	
04/07/2012	*	0	0	0	0	0	---	2	---	0	1,809	
04/08/2012	*	0	0	0	1	0	---	0	---	14	2,104	
04/09/2012	*	0	0	0	0	0	---	0	---	0	2,364	
04/10/2012	*	0	---	0	1	0	---	0	---	0	2,458	
04/11/2012	*	0	0	0	0	64	---	0	40	20	3,544	
04/12/2012	*	0	0	0	0	0	---	0	---	---	4,742	
04/13/2012	*	---	---	---	---	---	---	2	---	---	---	
Total:		0	0	0	15	128	0	0	6	40	34	19,243
# Days:		14	10	14	14	14	4	4	13	1	11	14
Average:		0	0	0	1	9	0	0	0	40	3	1,375
YTD		0	0	0	34	164	0	0	6	40	34	19,548

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)	
03/30/2012	*	1	807	2	3	3,569	---	---	---	---	30	
03/31/2012	*	2	---	0	6	1,575	---	---	---	---	33	
04/01/2012	*	0	---	0	27	2,018	---	---	0	70	11	
04/02/2012	*	6	---	3	7	4,110	1,399	---	0	181	24	
04/03/2012	*	11	129	4	10	4,916	2,033	93	0	355	0	
04/04/2012	*	73	134	1	5	3,658	2,743	---	0	530	76	
04/05/2012	*	30	200	0	4	5,898	---	---	2	342	61	
04/06/2012	*	11	139	6	8	4,690	---	83	0	698	111	
04/07/2012	*	27	40	0	7	4,273	---	---	0	1,022	121	
04/08/2012	*	16	99	1	2	4,071	---	---	0	1,008	74	
04/09/2012	*	10	51	3	1	5,033	---	83	0	816	158	
04/10/2012	*	4	---	42	2	7,464	1,827	---	0	1,159	210	
04/11/2012	*	1	25	338	7	17,990	---	---	0	442	160	
04/12/2012	*	19	56	96	2	7,558	---	76	4	---	249	
04/13/2012	*	---	---	---	---	---	---	---	2	---	---	
Total:		211	1,680	496	91	76,823	8,002	335	8	442	7,438	1,318
# Days:		14	10	14	14	14	4	4	13	1	11	14
Average:		15	168	35	7	5,487	2,001	84	1	442	676	94
YTD		220	1,887	528	129	84,583	8,002	335	8	442	7,438	1,523

Two-Week Summary of Passage Indices

COMBINED SOCKEYE												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
03/30/2012	*	0	0	0	0	105	---	---	---	---	---	0
03/31/2012	*	0	---	0	0	143	---	---	---	---	---	0
04/01/2012	*	0	---	0	0	0	---	---	2	---	0	0
04/02/2012	*	0	---	0	0	0	2	---	0	---	0	0
04/03/2012	*	0	0	0	0	120	1	3	0	---	0	0
04/04/2012	*	0	0	0	0	64	60	---	0	---	0	0
04/05/2012	*	0	0	0	0	0	---	---	0	---	0	0
04/06/2012	*	0	0	0	0	0	---	3	0	---	8	0
04/07/2012	*	0	0	0	0	0	---	---	0	---	0	11
04/08/2012	*	0	0	0	0	0	---	---	0	---	8	0
04/09/2012	*	0	0	0	0	0	---	1	0	---	0	0
04/10/2012	*	0	---	0	0	0	72	---	0	---	0	22
04/11/2012	*	0	0	0	0	64	---	---	0	0	0	0
04/12/2012	*	0	0	0	0	126	---	0	0	---	---	0
04/13/2012	*	---	---	---	---	---	---	---	0	---	---	---
Total:		0	0	0	0	622	135	7	2	0	16	33
# Days:		14	10	14	14	14	4	4	13	1	11	14
Average:		0	0	0	0	44	34	2	0	0	1	2
YTD		0	0	0	0	838	135	7	2	0	16	33

COMBINED LAMPREY JUVENILES												
	WTB	IMN	GRN	LEW	LGR [†]	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	
03/30/2012	*	0	0	0	0	100	---	---	---	---	---	176
03/31/2012	*	0	---	0	0	100	---	---	---	---	---	152
04/01/2012	*	0	---	0	0	0	---	---	1	---	724	300
04/02/2012	*	0	---	0	0	150	60	---	0	---	1,292	88
04/03/2012	*	0	0	0	0	150	20	0	0	---	4,028	144
04/04/2012	*	0	0	0	0	50	60	---	0	---	2,536	108
04/05/2012	*	0	0	0	0	950	---	---	0	---	5,328	140
04/06/2012	*	0	0	0	0	0	---	1	2	---	6,164	128
04/07/2012	*	0	0	0	0	0	---	---	1	---	10,500	144
04/08/2012	*	0	0	0	0	50	---	---	3	---	32,611	360
04/09/2012	*	0	0	0	0	0	---	2	5	---	11,300	184
04/10/2012	*	0	---	0	0	0	---	1	---	---	3,906	312
04/11/2012	*	0	0	0	0	0	---	---	0	20	1,547	1,760
04/12/2012	*	0	0	0	0	0	---	1	2	---	---	2,497
04/13/2012	*	---	---	---	---	---	---	---	1	---	---	---
Total:		0	0	0	0	1,550	140	4	16	20	79,936	6,493
# Days:		14	10	14	14	14	4	4	13	1	11	14
Average:		0	0	0	0	111	35	1	1	20	7,267	464
YTD		6	0	0	0	2,315	140	4	16	20	79,936	12,384

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, pacific lamprey macrophthalmia, and unidentified lamprey species.

† 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 = 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.

Cumulative Adult Passage at Mainstem Dams Through: 04/12

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2012		2011		10-Yr Avg.		2012		2011		10-Yr Avg.		2012		2011		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	04/12	165	1	739	0	9,791	24	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/12	37	0	132	0	4,124	3	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/12	8	0	87	0	2,233	1	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/12	4	0	63	0	1,335	2	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/12	7	0	31	0	694	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/12	0	0	4	0	343	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/12	1	1	2	0	181	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/12	0	0	7	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0
PRD	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH	-	0	0	0	0	0	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	04/10	12	3	42	0	692	0	0	0	0	0	0	0	0	0	0	0	0	0

DAM	Coho						Sockeye			Steelhead					
	2012		2011		10-Yr Avg.		2012	2011	10-Yr Avg.	2012	2011	10-Yr Avg.	Wild 2012	Wild 2011	10-Yr Avg.
	Adult	Jack	Adult	Jack	Adult	Jack									
BON	0	0	0	0	0	0	0	0	0	1,909	1,601	1,562	579	696	451
TDA	0	0	0	0	0	0	0	0	0	395	812	706	217	477	289
JDA	0	0	0	0	0	0	0	0	0	810	1,737	1,483	522	1,086	649
MCN	-1	0	0	0	0	0	0	0	0	700	1,607	1,248	371	965	498
IHR	0	0	0	0	0	0	0	0	0	822	1,458	1,580	315	450	512
LMN	0	0	0	0	0	0	0	0	0	1,613	1,419	1,633	712	574	657
LGS	0	0	0	0	0	0	0	0	0	1,655	2,724	1,693	911	1,119	628
LGR	0	0	0	0	0	0	0	0	0	6,761	9,027	7,972	2,590	3,636	2,064
PRD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH	0	0	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
WFA	0	0	0	0	0	0	0	0	0	4,306	6,214	6,879	0	0	0

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: 04/13/12

BON counts from January 1, 2012 to March 13, 2012 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2012	12	1	1,471	497
2011	47	0	1,370	580

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

4/13/12 11:16 AM

03/30/12 TO 04/13/12

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
LGR	Sum of NumberCollected	450	201,150		100	61,250	500	263,450
	Sum of NumberBarged	0	15,296		16	9,144	34	24,490
	Sum of NumberBypassed	450	185,582		83	52,101	465	238,681
	Sum of Numbertrucked	0	0		0	0	0	0
	Sum of SampleMorts	0	57		0	1	0	58
	Sum of FacilityMorts	0	215		1	4	1	221
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	0	272		1	5	1	279
LGS	Sum of NumberCollected	90	9,767			6,004	93	15,954
	Sum of NumberBarged	0	0			0	0	0
	Sum of NumberBypassed	90	9,711			5,993	89	15,883
	Sum of Numbertrucked	0	0			0	0	0
	Sum of SampleMorts	0	8			2	1	11
	Sum of FacilityMorts	0	48			9	3	60
	Sum of ResearchMorts	0	0			0	0	0
	Sum of TotalProjectMorts	0	56			11	4	71
LMN	Sum of NumberCollected	3	339			244	5	591
	Sum of NumberBarged	0	0			0	0	0
	Sum of NumberBypassed	3	331			244	4	582
	Sum of Numbertrucked	0	0			0	0	0
	Sum of SampleMorts	0	8			0	1	9
	Sum of FacilityMorts	0	0			0	0	0
	Sum of ResearchMorts	0	0			0	0	0
	Sum of TotalProjectMorts	0	8			0	1	9
MCN	Sum of NumberCollected	60	520		20	220		820
	Sum of NumberBarged	0	0		0	0		0
	Sum of NumberBypassed	60	520		20	220		820
	Sum of Numbertrucked	0	0		0	0		0
	Sum of SampleMorts	0	0		0	0		0
	Sum of FacilityMorts	0	0		0	0		0
	Sum of ResearchMorts	0	0		0	0		0
	Sum of TotalProjectMorts	0	0		0	0		0
Total Sum of NumberCollected		603	211,776		120	67,718	598	280,815
Total Sum of NumberBarged		0	15,296		16	9,144	34	24,490
Total Sum of NumberBypassed		603	196,144		103	58,558	558	255,966
Total Sum of Numbertrucked		0	0		0	0	0	0
Total Sum of SampleMorts		0	73		0	3	2	78
Total Sum of FacilityMorts		0	263		1	13	4	281
Total Sum of ResearchMorts		0	0		0	0	0	0
Total Sum of TotalProjectMorts		0	336		1	16	6	359

YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/13/12 11:16 AM

TO: 04/13/12

		Species						
Site	Data	CH0	CH1	CO	SO	ST	Grand Total	
LGR	Sum of NumberCollected	480	227,020		135	695	68,630	296,960
	Sum of NumberBarged	0	15,296		16	34	9,144	24,490
	Sum of NumberBypassed	480	211,441		118	658	59,481	272,178
	Sum of NumberTrucked	0	0		0	0	0	0
	Sum of SampleMorts	0	68		0	2	1	71
	Sum of FacilityMorts	0	215		1	1	4	221
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	0	283		1	3	5	292
LGS	Sum of NumberCollected	90	9,767			93	6,004	15,954
	Sum of NumberBarged	0	0			0	0	0
	Sum of NumberBypassed	90	9,711			89	5,993	15,883
	Sum of NumberTrucked	0	0			0	0	0
	Sum of SampleMorts	0	8			1	2	11
	Sum of FacilityMorts	0	48			3	9	60
	Sum of ResearchMorts	0	0			0	0	0
	Sum of TotalProjectMorts	0	56			4	11	71
LMN	Sum of NumberCollected	3	339			5	244	591
	Sum of NumberBarged	0	0			0	0	0
	Sum of NumberBypassed	3	331			4	244	582
	Sum of NumberTrucked	0	0			0	0	0
	Sum of SampleMorts	0	8			1	0	9
	Sum of FacilityMorts	0	0			0	0	0
	Sum of ResearchMorts	0	0			0	0	0
	Sum of TotalProjectMorts	0	8			1	0	9
MCN	Sum of NumberCollected	60	520		20		220	820
	Sum of NumberBarged	0	0		0		0	0
	Sum of NumberBypassed	60	520		20		220	820
	Sum of NumberTrucked	0	0		0		0	0
	Sum of SampleMorts	0	0		0		0	0
	Sum of FacilityMorts	0	0		0		0	0
	Sum of ResearchMorts	0	0		0		0	0
	Sum of TotalProjectMorts	0	0		0		0	0
Total Sum of NumberCollected		633	237,646		155	793	75,098	314,325
Total Sum of NumberBarged		0	15,296		16	34	9,144	24,490
Total Sum of NumberBypassed		633	222,003		138	751	65,938	289,463
Total Sum of NumberTrucked		0	0		0	0	0	0
Total Sum of SampleMorts		0	84		0	4	3	91
Total Sum of FacilityMorts		0	263		1	4	13	281
Total Sum of ResearchMorts		0	0		0	0	0	0
Total Sum of TotalProjectMorts		0	347		1	8	16	372

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
Lower Granite Dam											
Little Goose Dam											
	06/25/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/02/12	Chinook + Steelhead	36	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	06/27/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/04/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	06/25/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/29/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/01/12	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	07/05/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam											
	06/23/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/26/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/30/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/03/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	06/25/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/29/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/01/12	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	07/05/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0