



Fish Passage Center

Weekly Report #12 - 04

April 4, 2012

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 104% and 225% of average at individual sub-basins over March. Precipitation above The Dalles has been 169% of average over March. Over the 2012 water year, precipitation has ranged between 65% and 114% of average.

Table 1. Summary of March precipitation and cumulative October through March 26, 2012 precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2012 March 1-26, 2012		Water Year 2012 October 1, 2011 to March 26, 2012	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	2.93	195	14.74	106
Snake River Above Ice Harbor	2.14	155	9.99	100
Columbia Above The Dalles	2.73	169	14.42	103
Kootenai	3.36	225	14.67	103
Clark Fork	1.76	175	10.06	114
Flathead	2.51	184	12.78	107
Pend Oreille/ Spokane	4.83	208	20.12	102
Central Washington	0.72	104	3.78	65
Snake River Plain	1.20	126	6.11	103
Salmon/Boise/ Payette	2.98	183	12.32	99
Clearwater	4.24	181	19.75	109
SW Washington Cascades/Cowlitz	8.37	141	48.91	93
Willamette Valley	8.99	168	43.24	98

Snowpack within the Columbia Basin has seen

increases with recent storms that have resulted in slightly better than average snowpack in most basins. Average snowpack in the Columbia River for basins above the Snake River confluence is 114% of average, for Snake River Basins the average snowpack is 84% 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). At the current time, new April Flood Control elevations are only available at Libby and Dworshak dams.

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 1253.6 feet (4-5-12) and drafted 4.7 feet over the last week. Outflows at Grand Coulee have ranged between 111.8 and 170.4 Kcfs over the last week.

The end of April FC Elevation at Grand Coulee is projected to be between 1220-1230 feet.

The Libby Reservoir is currently at elevation 2397.9 feet (4-5-12) and has drafted 4.6 feet last week. The end of April FC Elevation at Libby is 2377.3 feet. Outflows at Libby Dam have been 17.0-25.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3528.2 feet (4-5-12) and has drafted 0.5 feet last week. Outflows at Hungry Horse have ranged between 5.5 and 6.1 Kcfs last week.

Dworshak is currently at an elevation of 1525.3 feet (4-5-12) and has refilled 1.8 feet last week. The end of April System Flood Control Elevation is 1499.6 feet. Outflows from Dworshak have ranged from 14.0 to 19.5 Kcfs over the past week.

The Brownlee Reservoir was at an elevation of 2039.2 feet on April 4th, 2012 drafting 3.0 feet last week. Over the last week, outflows at Brownlee have ranged between 31.2 and 46.3 Kcfs.

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 3-5 have averaged 108.5 Kcfs.

Spill:

Both planned fish spill and involuntary spill (either excess hydraulic capacity or excess generation) have occurred in the hydro system over past week. Prior to the implementation of fish spill in the Snake River the spill that occurred was due to high flows, unit outages and the necessary drafting of reservoirs to meet flood control elevations.

At several hydro projects in the FCRPS, there are turbine units out of service limiting the hydraulic capacities of the projects, and potentially causing spill. Presently, in the Snake River there is one unit out at both 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

Spill has occurred at Dworshak Dam over the past week as the project drafted to its end of April

flood control elevation. Spill for fish passage began on April 3rd at the lower Snake River projects, and will begin on April 10th at the lower Columbia River projects.

Project	Day/Night Spill
Lower Granite	20Kcfs/20Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	45 kcfs/Gas Cap

At Lower Granite Dam excess hydraulic capacity and excess generation spill occurred earlier in the week, followed by spill to the Court Order beginning April 3rd. At Little Goose Dam spill has been provided to the 30% of instantaneous flow level as specified in the Court Order on the past three days, and was excess generation prior to that date. The tailrace TDG has consistently been considerably below the 120% TDG waiver. At Lower Monumental Dam the COE has gradually decreased the level of spill over the past three days. The project did exceed the gas waiver on April 2nd, when spill averaged almost 44 Kcfs. Presently the spill has been decreased 27-28 Kcfs. 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 above the 45 Kcfs for some hours during the daytime. There has been one unit out at this project and, consequently, uncontrolled spill at times has resulted.

Spill for fish passage at the Lower Columbia projects is scheduled to begin on April 10th. However, spill has occurred at all the lower river projects over the past week as a result of unit outages and flow in excess of hydraulic capacity, or generation needs. There have been TDG measurements that exceed the waiver limits at these projects during this past week.

Smolt Monitoring:

Smolt monitoring is ongoing at Bonneville Dam (BON), Lower Granite Dam (LGR), and the four SMP traps. Smolt monitoring activities began on March 31st at Rock Island (RIS) and John Day (JDA) dams, with the first sample available on April 1st. Sampling began at Little Goose (LGS) and Lower Monumental (LMN) dams on April 1st and 2nd, respectively. However,

LGS and LMN dams are doing limited sampling for condition monitoring only. This limited sampling will continue until the start of transportation. McNary Dam (MCN) is not scheduled to begin sampling until April 9th, with the first sample available on April 10th.

Compared to a week ago, the passage index for yearling Chinook at BON increased slightly. The daily average passage index at BON for yearling Chinook this week was 325 per day. Subyearling Chinook numbers (fry) increased this week, with an average daily passage index of over 4,600 per day. BON collected its first clipped coho juvenile in the sample from April 4th. These clipped coho were likely from the release of coho juveniles from Washougal Hatchery into the Klickitat River, which was scheduled to begin on or around April 1st. Up to this point, the majority of coho juveniles collected at BON were coho fry. The daily average passage index at BON for coho this week was 63 per day. Samples of steelhead juveniles at BON remained low this week. The collection counts of juvenile lamprey have decreased over the past week, with a daily average collection of about 155 pacific macrophthalmia per day and very few pacific ammocoetes. Lamprey juvenile mortality increased again on March 31st and April 1st, with mortality in the 11-24% range. However, since April 1st, lamprey mortality at BON has been below 10%.

As mentioned above, JDA began sampling on March 31st, with the first sample available April 1st. Since sampling began, yearling Chinook have been the dominant salmonid species, with an average daily passage index of 845 per day. The daily average passage index for steelhead at JDA is 296 per day. JDA has collected only a few subyearling Chinook, all of which have been fry. The collection counts of juvenile lamprey have been high at JDA, with a daily average collection of over 2,750 pacific macrophthalmia and 30 pacific ammocoetes per day.

Yearling Chinook continue to be the dominant species at LGR. Compared to last week's samples, the passage index for yearling Chinook at LGR increased this week, with an average daily passage index of over 20,322 per day. The passage index for steelhead also increased this week, with an average daily passage index of nearly 3,700 per day. LGR continued to collect relatively few subyearling Chinook (fry), coho, and sockeye/kokanee passing LGR over the past week. Finally, the collection counts of juvenile lamprey at LGR have averaged

about 164 per day for pacific macrophthalmia and 50 per day for pacific ammocoetes.

As mentioned above, LGS and LMN began condition sampling this week. During these samples, yearling Chinook and steelhead have been the dominant salmonid species at these two projects. However, both sites have collected a few sockeye juveniles and LGS has collected a few subyearling Chinook (fry) and lamprey juveniles. Very few juveniles have been collected at RIS since sampling began on March 31st. The Grande Ronde Trap continues to collect mostly yearling Chinook. Compared to last week, the collection of yearling Chinook remained the same, with a daily average collection of 784 fish per day. The majority of the yearling Chinook collected over the past week are of hatchery origin and are likely from the releases from the Grande Ronde or Catherine Creek acclimation ponds. The Grande Ronde Trap continues to collect only a small number of subyearling Chinook and steelhead juveniles.

Yearling Chinook continue dominate the collection at the Salmon River Trap. This week's daily average collection for yearling Chinook was 1,004 fish per day, which is only slightly lower than that for last week. Of the yearling Chinook being collected at this trap this week, approximately 48% were unmarked. While still relatively low, steelhead collections at this trap have increased over the past week. The daily average collection for steelhead this week was 18 per day.

Collections of yearling Chinook continued to increase at the Snake River Trap this week. Yearling Chinook continue to dominate the collections at the Snake River Trap. The daily average collection for yearling Chinook was 131 fish per day this week. Of the yearling Chinook collected at this trap this week, approximately 48% were unmarked. Although low, the collection counts of steelhead increased this week. To date, the Snake River Trap has collected 100 steelhead juveniles, of which approximately 62% were collected this week.

The Imnaha Trap has been out of operation over the past few days due to high flows and repairs. For days where sample data are available, yearling Chinook typically dominated the collections. However, on March 30th, steelhead were the dominate species, with 807 collected. Over 98% of the steelhead juveniles that were collected on March 30th were clipped.

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 5th. From March 15th through April 5th, daily adult spring Chinook counts at Bonneville Dam ranged from 1 to 17 adult salmon per day. As of April 5th, using the historical counting schedule, 52 spring Chinook have been counted at Bonneville Dam. In 2011, 289 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2012 adult spring Chinook count at Bonneville Dam is 18% of the 2011 count and only 1.4% of the 10 year average of 3,580. At Willamette Falls Dam 2 adult spring Chinook has been counted so far this year.

The Bonneville Dam 2012 steelhead count of 1,670 is about 1.27 times greater than the 2011 count of 1,316 and 1.49 times greater than the 10 year average count of 1,123. The 2012 Bonneville wild adult steelhead count of 520 is about 90.3% of the 2011 count of 576, while being about 1.8 times greater than the 10 year average count of 286. At upriver sites, adult steelhead continue to move through the hydro system to reach their tributaries and spawning sites. The majority of these fish overwintered 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 216 to 328 adults per day last week. This year's Lower Granite steelhead count of 5,549 is about 81.6% of the 2011 count of 6,801 and 86% of the 10 year average of 6,451. The 2012 Lower Granite wild adult steelhead count of 1,977 is about 92.9% of the 2011 count of 2,129, while being about 1.35 times greater than the 10 year average count of 1,461. At Willamette Falls Dam, the 2012 count for steelhead was 2,923, as of April 4th. This year's steelhead count is about 50% of the 2011 count of 5,841 and about 48.3% 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 53 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 spring Chinook were scheduled to begin this week. In all, these releases were expected to total approximately 1.8 million juveniles. Of the 1.8 million yearling spring Chinook that were scheduled for release this week, about 70% were scheduled to be released into the Salmon River. The remaining 30% were scheduled for release throughout this river zone, including: the Tucannon River (11%), the Clearwater River (11%), and the Grande Ronde River (8%). In addition, about 1.03 million yearling summer Chinook were scheduled to be released into the Pahsimeroi River this week. Of these, approximately 17% were unclipped but were tagged with coded-wire-tags.

Approximately 300,000 coho juveniles were scheduled to be released into the Clearwater River this week. These coho juveniles were to be released from Kooskia NFH and were 100% unmarked. Finally, about 951,000 summer steelhead were scheduled for release into this zone this week. Of these, about 900,000 were scheduled for release into the Clearwater River and 51,000 were scheduled for release into the Tucannon River. Of the 900,000 summer steelhead juveniles that were scheduled for release into the Clearwater River this week, about 22% were unmarked.

Several releases of yearling fall Chinook juveniles are scheduled for this zone over the next two weeks. In all, these yearling fall Chinook releases are expected to total about 940,000 juveniles. Of these, approximately 52% are to be released below Little Goose Dam while 48% are to be released above Lower Granite Dam. In addition, about 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. Finally, nearly 4.6 million summer steelhead are scheduled for release to this zone over the next two weeks. Of these, about 44% are scheduled for release into the Salmon River and its tributaries and 42% are scheduled for

release into the Clearwater River and its tributaries. The remaining 14% are scheduled for release throughout this river zone, including: the Wallowa River (8%), the Grande Ronde River (3%), and the Snake River, below Hells Canyon Dam (3%).

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Several volitional releases of juvenile salmonids that began in past weeks continued this week. Many of these releases are expected to run April and even into May. There was only one release of juvenile salmonids scheduled to begin this week in this zone. On or around April 6th, approximately 58,000 coho juveniles were scheduled for release into Nason Creek, a tributary of the Wenatchee River. These coho juveniles are unclipped but are tagged with coded-wire-tags.

Approximately 845,000 yearling spring Chinook are scheduled for release into this zone over the next two weeks. All of these spring Chinook juveniles are scheduled for release into the Methow River and its tributaries. In addition, over 2.9 million yearling summer Chinook are scheduled for release into this zone over the next two weeks. These summer Chinook are scheduled for release throughout this river zone, including: the Mid-Columbia River (31%), the Wenatchee River (30%), the Okanogan River (20%), the Methow River (14%), and the Entiat River (6%).

Over 1.4 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 Methow River (23%), Wenatchee River (41%), Yakima River (27%), and a direct release into the Mid-Columbia River (9%). All of the coho that are to be released to the Methow and Wenatchee Rivers are unclipped but are tagged with coded-wire-tags. The Yakima River releases are of clipped and unclipped fish. However, all unclipped fish are tagged with coded-wire-tags. Finally, approximately 404,000 summer steelhead are scheduled for release for this zone over the next two weeks. Of these, 45% are scheduled for direct release into the Mid-Columbia River, 25% are scheduled for release into the Walla Walla River, 22% are scheduled for release into the Touchet River, and 9% are

scheduled for release into the Okanogan River.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. Just over 480,000 yearling spring Chinook were scheduled for release into the Deschutes River this week. These spring Chinook juveniles were to be released from Warm Springs NFH. In addition, about 3.58 million coho juveniles were scheduled for release into this zone this week. Of these, approximately 72% were scheduled for release into the Klickitat River and 28% were scheduled for release into the Umatilla River.

Approximately 7.93 million subyearling fall Chinook tules are scheduled for release from Spring Creek NFH and Little White Salmon NFH on April 11th. In addition, over 2.4 million yearling spring Chinook juveniles are scheduled for release into this zone over the next two weeks. Of these, approximately 48% are scheduled for release into the Wind River and 42% are scheduled for release into the Little White Salmon River. The remaining 10% are scheduled for release throughout this river zone, including: the Umatilla River (6%), Hood River (3%), and the Deschutes River (1%). All of the spring Chinook juveniles that are scheduled for release into the Umatilla River are 100% unclipped but are tagged with coded-wire-tags. Finally, about 265,500 summer steelhead juveniles are scheduled for release into this zone over the next two weeks. Of these, approximately 66% are to be release into the Deschutes River and its tributaries and 34% are to be released to into the Klickitat River.

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:									
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2012	408,000	03-28-12	03-29-12	Powell Acclim Pond	Lochsa River
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2012	1,123,000	03-28-12	04-06-12	Red River	S Fk Clearwater River
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2012	241,000	03-22-12	03-25-12	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2012	788,000	03-22-12	03-25-12	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2012	525,000	03-19-12	03-27-12	Hells Canyon Dam	Snake River
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 Total					7,448,000				
Nez Perce Tribe	Clearwater Hatchery	CH1	SU	2012	206,000	03-26-12	03-27-12	Crooked River	S Fk Clearwater River
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	Kooskia NFH	CH1	SP	2012	620,000	03-26-12	03-26-12	Clear Creek	Clearwater River M F
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2012	265,000	03-22-12	04-01-12	Lostine Accim Pond	Wallowa River
Nez Perce Tribe	McCall Hatchery	CH1	SU	2012	106,000	03-14-12	04-05-12	Johnson Cr Idaho Nez Perce Tribal	South Fork Salmon River
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					1,892,058				
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2012	420,000	03-30-12	03-30-12	Imnaha Acclim Pond	Imnaha River
Oregon Dept. of Fish and Wildlife Total					420,000				
U.S. Fish and Wildlife Service	Dworshak NFH	CH1	SP	2012	1,045,000	03-26-12	03-29-12	Dworshak Hatchery	Clearwater River M F
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) Warm Springs	S Fk Clearwater River
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					2,226,751				
Umatilla Tribe	Cascade Hatchery	CO	UN	2012	1,000,000	04-05-12	04-05-12	Pendelton Acclim Pond Catherine Cr Acclim	Umatilla River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	106,884	03-22-12	04-16-12	Pond Grande Ronde Acclim	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	146,605	03-21-12	04-01-12	Pond	Grande Ronde River
Umatilla Tribe Total					1,253,489				
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2012	50,000	03-15-12	03-31-12	Twisp Acclim Pond	Methow 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 Total					2,878,000				
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	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 Total					896,979				
Grand Total					17,015,277				

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From:	4/6/2012	to	4/19/2012						
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	CH1	SP	2012	1,123,000	03-28-12	04-06-12	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	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	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	Little 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	197,000	04-19-12	04-20-12	Yankee Fk (Salmon R)	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					8,921,300				
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	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 Pittsburg Landing	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2012	150,000	04-10-12	04-20-12	Acclim Pond Nez Perce Tribal	Snake River
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					945,058				
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	360,000	04-10-12	04-10-12	Wallowa Acclim Pond	Wallowa 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	Wychus 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	Round Butte Hatchery	ST	SU	2012	162,000	04-07-12	04-07-12	Deschutes River	Deschutes 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					965,000				
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 Little White Salmon	Salmon River (ID)
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2012	1,678,710	04-11-12	04-11-12	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	6,250,000	04-11-12	04-11-12	Spring Creek Hatchery Warm Springs	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 Little White Salmon
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 Total					13,270,238				
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	106,884	03-22-12	04-16-12	Catherine Cr Acclim Pond	Grande Ronde River

Hatchery Releases Next Two Weeks

Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2012	145,000	04-06-12	04-16-12	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					401,884				
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
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	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	Snake 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	SU	2012	400,000	04-12-12	05-25-12	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2012	180,000	04-15-12	04-20-12	Ringold Springs 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	CH1	SU	2012	320,000	04-12-12	04-12-12	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					4,263,800				
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	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2012	267,107	03-15-12	05-15-12	Jack Creek Acclim 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	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	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	122,063	04-17-12	04-17-12	Leavenworth Hatchery	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					2,487,331				
Grand Total					31,364,611				

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
03/23/2012	138.0	0.0	136.4	0.0	141.0	11.3	141.9	2.8	142.6	0.0	153.3	35.3	151.3	3.2
03/24/2012	139.2	0.0	142.9	0.0	145.7	7.6	144.2	12.0	142.5	4.5	153.3	33.7	150.5	13.8
03/25/2012	132.6	0.0	129.8	0.0	140.1	6.9	144.1	16.6	144.9	0.0	158.9	26.7	162.4	5.9
03/26/2012	142.5	0.0	139.3	4.0	147.1	15.7	143.6	21.1	144.2	0.0	157.2	32.0	147.1	15.9
03/27/2012	161.4	0.0	159.6	44.3	158.3	4.9	151.8	11.3	150.5	1.6	157.0	31.7	152.6	9.9
03/28/2012	161.7	0.0	160.6	62.0	164.2	10.2	165.9	43.8	162.3	15.0	182.8	54.8	180.7	34.4
03/29/2012	159.1	0.0	151.7	34.1	155.1	7.2	155.0	15.2	156.5	8.8	168.6	47.2	174.6	28.7
03/30/2012	165.8	0.0	166.3	36.7	167.9	27.9	168.1	35.4	166.6	0.0	175.3	61.1	162.8	31.4
03/31/2012	170.4	0.0	166.0	35.9	175.5	16.1	175.1	22.3	177.2	2.2	194.9	63.2	194.7	63.4
04/01/2012	111.8	0.0	111.7	4.5	114.9	0.0	118.9	0.0	126.2	0.0	143.5	20.6	155.8	5.8
04/02/2012	156.4	0.0	157.6	55.2	155.2	3.3	144.7	1.1	145.2	0.0	143.2	21.7	133.6	0.3
04/03/2012	155.4	5.5	156.7	59.9	162.5	14.9	161.5	6.7	162.1	3.2	177.0	47.5	175.6	54.6
04/04/2012	150.5	23.1	144.4	49.8	150.8	4.4	151.1	0.0	153.8	0.0	164.1	45.3	161.3	61.8
04/05/2012	167.5	14.0	163.5	52.1	168.3	15.8	161.5	1.6	162.3	0.3	171.7	45.3	167.6	60.0

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
03/23/2012	10.6	0.0	25.6	34.0	73.9	0.0	71.6	0.0	79.1	0.0	77.5	1.4
03/24/2012	10.6	0.0	28.3	34.0	75.0	0.0	69.6	0.0	75.8	0.0	79.6	5.9
03/25/2012	10.6	0.0	27.8	33.5	76.1	0.9	71.1	0.0	78.8	0.0	76.5	1.2
03/26/2012	10.6	0.0	30.0	31.8	86.8	12.8	79.0	10.0	82.6	8.2	79.4	12.9
03/27/2012	10.6	0.4	32.0	33.7	94.2	7.5	91.6	5.1	104.6	9.5	107.7	44.0
03/28/2012	11.6	1.5	32.0	33.7	88.3	5.3	87.8	6.6	97.0	8.0	100.1	38.0
03/29/2012	13.9	3.3	32.9	33.7	88.4	0.0	86.6	0.0	97.3	0.0	104.0	28.9
03/30/2012	14.0	3.5	33.8	33.8	96.8	25.8	91.3	23.4	99.2	17.0	99.6	27.9
03/31/2012	14.3	3.6	35.2	36.1	114.7	24.5	116.1	26.4	127.0	32.4	129.6	52.3
04/01/2012	14.4	3.7	41.9	46.2	127.9	24.1	119.6	16.3	140.5	43.7	143.1	79.6
04/02/2012	14.4	3.8	42.2	46.2	126.0	21.0	112.3	12.0	133.6	38.5	137.5	71.6
04/03/2012	14.4	3.8	38.2	46.3	111.3	27.8	104.5	36.9	116.9	31.0	118.3	74.4
04/04/2012	15.0	4.4	---	46.5	106.1	20.1	102.2	30.7	111.0	28.2	112.0	67.6
04/05/2012	17.7	7.0	---	---	108.2	20.2	102.2	30.7	108.9	27.2	116.0	65.1

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		
03/23/2012	245.2	76.2	222.7	0.0	224.0	0.0	232.5	1.2	109.0	109.9
03/24/2012	248.7	74.8	234.2	0.0	231.4	0.0	255.1	1.2	120.4	121.0
03/25/2012	249.5	72.6	237.0	0.0	235.1	0.0	259.8	1.3	128.9	117.2
03/26/2012	233.9	52.2	220.1	25.5	217.9	11.8	254.8	17.5	110.7	114.2
03/27/2012	257.9	62.7	241.6	53.5	238.6	13.2	241.4	40.0	92.3	96.7
03/28/2012	277.4	83.0	273.8	88.2	264.3	25.5	287.9	26.8	118.8	129.9
03/29/2012	290.3	96.2	287.3	112.8	275.9	45.1	293.9	34.8	126.6	120.0
03/30/2012	288.2	91.7	300.8	117.6	287.3	55.7	335.9	69.2	125.2	129.1
03/31/2012	321.9	124.9	287.7	105.0	280.9	42.0	365.2	97.3	131.6	123.9
04/01/2012	341.7	192.0	325.3	143.9	314.6	89.8	344.0	126.9	90.6	114.2
04/02/2012	297.0	147.8	317.0	168.6	306.5	121.2	346.9	133.9	90.0	110.6
04/03/2012	284.9	142.2	327.0	169.3	318.2	133.5	346.1	136.5	89.4	107.8
04/04/2012	291.1	142.1	302.8	164.3	292.9	110.3	327.5	123.4	88.5	103.2
04/05/2012	273.8	125.3	281.0	137.2	270.3	103.2	283.4	74.6	90.5	105.9

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>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>24 h</u>	<u>12 h</u>	<u>High</u>
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>	
3/23	99.1	99.3	99.7	23	104.4	104.7	105.6	16	102.1	102.2	102.3	24	100.5	100.7	100.9	21	100.9	101.0	101.2	24			
3/24	99.1	99.4	99.7	24	104.2	104.7	105.2	24	102.1	102.4	102.6	24	100.3	100.7	101.0	24	101.0	101.3	101.4	24			
3/25	99.4	99.7	100.0	24	105.1	105.8	106.4	22	103.2	103.6	104.0	24	101.3	101.8	102.1	22	102.0	102.4	102.6	24			
3/26	98.7	98.8	99.1	18	105.1	105.2	107.1	16	103.4	103.5	103.6	18	101.6	101.6	102.1	16	102.1	102.3	102.4	24			
3/27	97.7	97.9	98.1	24	105.9	107.1	107.6	23	103.5	104.3	107.3	24	100.8	101.0	101.5	22	101.5	101.6	101.7	24			
3/28	96.9	97.1	97.2	24	107.4	107.7	108.1	24	103.5	103.7	103.9	24	101.3	101.5	101.7	24	101.6	101.8	101.9	24			
3/29	97.4	97.7	97.9	24	107.5	107.9	108.3	22	103.8	104.3	104.5	24	101.6	102.2	102.5	22	102.0	102.3	102.4	24			
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			

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>24 h</u>	<u>12 h</u>	<u>High</u>
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>	
3/23	101.3	101.7	101.8	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0			
3/24	100.7	101.1	101.5	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0			
3/25	102.2	102.8	103.0	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0			
3/26	103.4	104.7	107.7	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0			
3/27	118.5	125.1	128.0	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0			
3/28	128.7	129.3	132.2	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0			
3/29	114.3	121.0	132.8	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0			
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			

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>24 h</u>	<u>12 h</u>	<u>High</u>
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>	
3/23	---	---	---	0	---	---	---	0	101.4	101.5	101.8	24	107.6	109.5	116.3	24	106.3	106.7	107.1	24			
3/24	---	---	---	0	---	---	---	0	101.9	102.4	102.5	24	107.0	108.5	109.4	24	107.9	109.4	114.5	24			
3/25	---	---	---	0	---	---	---	0	103.8	104.3	104.4	24	107.6	109.7	109.9	24	109.9	111.2	111.6	24			
3/26	---	---	---	0	---	---	---	0	105.3	106.0	106.7	24	108.4	109.5	112.2	24	107.5	108.9	111.1	24			
3/27	---	---	---	0	---	---	---	0	107.1	107.3	107.5	24	109.4	109.7	110.1	24	108.7	109.5	110.3	24			
3/28	---	---	---	0	---	---	---	0	105.9	106.0	106.2	24	110.7	112.3	114.6	24	110.5	111.6	112.6	24			
3/29	---	---	---	0	---	---	---	0	106.1	106.5	107.1	24	109.8	110.4	113.3	24	110.3	111.6	113.4	24			
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	---	---	---	0	---	---	---	0	---	---	---	0			
4/3	105.1	106.4	108.1	24	105.8	107.3	108.5	24	---	---	---	0	---	---	---	0	---	---	---	0			
4/4	105.3	108.2	109.7	24	103.1	103.4	103.5	24	---	---	---	0	---	---	---	0	---	---	---	0			
4/5	108.5	109.1	109.6	24	104.9	108.3	109.9	24	---	---	---	0	---	---	---	0	---	---	---	0			

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

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

Date	<u>Priest R. Dnst</u>			#	<u>Pasco</u>			#	<u>Dworshak</u>			#	<u>Clwrtr-Peck</u>			#	<u>Anatone</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
3/23	105.9	106.8	108.7	24	103.8	104.5	104.9	24	95.5	95.7	96.0	24	98.7	98.9	99.0	24	102.3	102.5	102.9	22
3/24	108.4	110.4	112.3	24	104.3	104.8	105.0	24	96.1	96.3	96.5	24	99.0	99.4	99.6	24	103.0	103.6	104.0	24
3/25	109.8	110.5	111.8	24	106.9	108.1	109.1	24	96.8	97.1	97.6	24	100.2	100.8	101.2	23	103.8	104.5	105.4	24
3/26	109.0	110.4	112.1	24	106.2	106.8	108.2	24	96.8	97.6	100.5	24	99.2	99.8	100.6	23	102.7	102.9	103.6	18
3/27	108.9	109.9	110.5	24	105.0	105.4	105.9	24	97.9	99.1	101.5	24	99.0	99.8	100.4	24	102.7	103.5	104.0	24
3/28	112.3	113.2	113.8	24	105.8	106.5	106.8	24	101.9	104.6	104.9	24	99.9	100.3	100.8	24	102.7	103.0	103.5	24
3/29	112.5	113.2	114.6	24	108.3	109.3	109.7	24	105.6	106.4	109.5	21	101.3	102.2	102.6	24	102.9	103.6	103.9	24
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	---	---	---	0	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	---	---	---	0	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	---	---	---	0	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	---	---	---	0	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

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clwrtr-Lewiston</u>			#	<u>Lower Granite</u>			#	<u>L. Granite Tlwr</u>			#	<u>Little Goose</u>			#	<u>L. Goose Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
3/23	95.4	95.4	95.4	1	100.3	100.4	100.4	24	99.7	99.8	99.9	24	100.1	100.7	101.0	24	99.0	99.5	99.8	24
3/24	97.4	97.4	97.8	11	101.1	101.5	102.0	24	100.7	101.3	101.7	24	99.4	99.6	99.8	24	98.9	99.2	99.4	24
3/25	97.7	97.7	98.3	10	102.9	103.2	103.2	24	102.6	103.1	108.6	24	100.4	100.7	101.0	24	100.2	100.7	101.1	24
3/26	98.0	98.1	100.2	8	103.1	103.3	103.4	24	108.1	111.1	112.4	24	100.8	100.9	100.9	24	103.9	106.2	107.4	24
3/27	89.5	89.5	89.5	1	103.3	103.6	104.1	24	105.8	108.6	110.7	24	101.4	101.9	102.3	24	103.3	105.2	107.6	24
3/28	90.0	90.0	90.0	1	102.5	103.1	103.8	24	104.2	107.0	110.9	24	103.1	103.6	104.2	24	105.5	107.3	107.7	24
3/29	96.8	96.8	96.8	1	102.1	102.7	103.3	24	101.7	102.4	102.8	24	105.1	105.7	106.0	24	105.1	105.6	106.0	24
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

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>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
3/23	101.9	102.0	102.1	24	102.1	102.3	103.3	24	100.6	100.8	101.1	24	100.6	101.1	106.5	24	---	---	---	0
3/24	102.0	102.2	102.3	24	101.2	101.4	101.6	24	101.0	101.4	101.9	24	103.7	106.4	109.1	24	---	---	---	0
3/25	101.5	101.6	101.9	24	100.7	100.8	101.1	24	102.9	103.5	103.8	24	102.8	103.5	106.4	24	---	---	---	0
3/26	100.8	101.0	101.3	24	105.4	110.2	113.5	24	103.0	103.4	103.7	24	107.8	111.7	112.8	24	---	---	---	0
3/27	100.8	101.3	102.0	24	109.6	113.9	116.5	24	102.0	102.4	103.0	24	115.2	117.1	117.6	24	---	---	---	0
3/28	102.3	102.6	102.9	24	108.5	112.7	115.8	24	102.9	103.1	103.3	24	114.4	116.7	117.3	24	---	---	---	0
3/29	103.3	104.0	104.9	24	103.5	104.4	104.7	24	104.6	105.4	105.8	24	114.2	114.6	117.6	24	---	---	---	0
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

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			<u>McNary Tlwr</u>			<u>John Day</u>			<u>John Day Tlwr</u>			<u>The Dalles</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>	<u>hr</u>				
3/23	101.8	102.3	102.7	24	114.8	115.2	115.6	24	104.4	104.5	104.6	24	103.9	104.0	104.2	24	103.7	103.9	104.1	24
3/24	102.5	102.9	103.6	24	115.3	115.6	115.7	24	104.8	105.0	105.1	24	103.9	104.1	104.4	24	103.8	104.0	104.2	24
3/25	105.3	106.3	107.0	24	114.9	116.2	116.4	24	105.1	105.2	105.3	24	103.8	104.1	104.3	24	104.0	104.2	104.4	24
3/26	105.9	106.3	106.9	24	112.5	112.7	112.9	24	104.5	104.7	104.9	24	111.0	113.3	115.0	24	103.4	103.8	104.4	24
3/27	106.5	106.8	107.0	24	115.2	115.9	116.1	24	105.7	106.4	106.9	24	115.3	116.1	119.9	24	106.1	106.8	107.0	24
3/28	106.4	106.7	107.0	24	115.7	116.1	116.2	24	107.3	107.5	107.7	24	119.3	119.5	119.7	24	108.3	109.1	109.7	24
3/29	106.6	107.1	107.4	24	116.6	116.7	116.8	24	108.6	109.0	109.2	24	119.9	120.1	120.4	24	112.0	113.0	114.8	24
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

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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>	<u>hr</u>				
3/23	103.4	103.5	103.6	24	103.5	103.9	104.2	24	104.1	104.7	105.0	21	103.3	104.1	104.7	24	107.1	108.1	108.8	24
3/24	103.4	103.6	103.7	24	104.1	104.6	104.8	24	104.8	105.2	105.4	24	103.9	104.4	105.0	24	107.7	108.6	109.1	24
3/25	103.8	104.0	104.1	24	104.5	104.6	104.8	24	104.9	105.1	105.3	24	104.8	105.0	105.3	24	107.9	108.6	109.0	24
3/26	103.9	104.7	106.2	24	104.0	104.2	104.5	24	106.4	108.1	111.2	24	106.1	108.4	111.2	24	112.4	116.2	120.1	24
3/27	106.3	107.0	108.0	24	104.6	105.4	105.9	24	108.1	109.8	111.3	24	105.5	106.6	108.7	24	119.9	125.9	133.3	24
3/28	109.0	110.0	111.3	24	105.2	105.8	106.2	24	106.1	106.5	107.6	24	106.2	107.0	109.2	24	112.2	113.7	116.1	24
3/29	113.3	114.2	115.1	24	108.5	109.4	110.8	24	108.7	109.8	110.1	24	106.5	107.4	108.9	24	113.9	115.2	116.2	24
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

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
03/23/2012	*	697	---	107	38	---	---	---	---	---	1,135	
03/24/2012	*	605	701	422	20	---	---	---	---	---	761	
03/25/2012	*	405	485	1,694	3	---	---	---	---	---	581	
03/26/2012	*	1,046	295	1,378	14	2,876	---	---	---	---	409	
03/27/2012	*	2,166	131	749	62	6,187	---	---	---	---	385	
03/28/2012	*	1,356	109	745	101	6,669	---	---	---	---	600	
03/29/2012	*	1,497	---	441	143	11,775	---	---	---	---	524	
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	---	962	
04/02/2012	*	658	---	895	258	23,336	600	---	3	---	509	
04/03/2012	*	534	---	1,292	155	25,059	3,097	71	2	---	651	
04/04/2012	*	1,351	---	1,850	69	13,283	6,867	---	0	---	516	
04/05/2012	*	---	---	517	47	17,203	---	---	3	---	538	
04/06/2012		---	---	---	---	---	---	---	---	---	---	
Total:		13,766	1,747	11,027	1,300	169,761	10,564	71	11	0	4,225	8,742
# Days:		13	6	14	14	11	3	1	5	0	5	14
Average:		1,059	291	788	93	15,433	3,521	71	2	0	845	624
YTD		22,223	2,717	11,662	1,487	169,761	10,565	71	11	0	4,225	26,725

COMBINED SUBYEARLING CHINOOK												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
03/23/2012	*	0	---	0	0	---	---	---	---	---	2,399	
03/24/2012	*	0	0	0	0	---	---	---	---	---	3,335	
03/25/2012	*	0	0	0	0	---	---	---	---	---	2,424	
03/26/2012	*	0	0	1	0	22	---	---	---	---	3,234	
03/27/2012	*	0	0	1	0	11	---	---	---	---	2,951	
03/28/2012	*	0	0	1	0	0	---	---	---	---	4,229	
03/29/2012	*	0	---	0	0	0	---	---	---	---	3,095	
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	---	9,155	
04/02/2012	*	0	---	0	1	0	50	---	0	---	6,322	
04/03/2012	*	0	---	0	0	0	0	0	0	---	15,505	
04/04/2012	*	0	---	0	0	0	0	---	3	---	11,203	
04/05/2012	*	---	---	0	0	246	---	---	0	---	4,969	
04/06/2012		---	---	---	---	---	---	---	---	---	---	
Total:		0	0	4	1	422	50	0	3	0	26	82,435
# Days:		13	6	14	14	11	3	1	5	0	5	14
Average:		0	0	0	0	38	17	0	1	0	5	5,888
YTD		0	0	31	3	422	50	0	3	0	26	102,686

Two-Week Summary of Passage Indices

COMBINED COHO											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
03/23/2012 *	0	---	0	1	---	---	---	---	---	---	14
03/24/2012 *	0	0	0	0	---	---	---	---	---	---	25
03/25/2012 *	0	0	0	0	---	---	---	---	---	---	17
03/26/2012 *	0	0	0	0	0	---	---	---	---	---	27
03/27/2012 *	0	0	0	0	11	---	---	---	---	---	17
03/28/2012 *	0	0	0	0	0	---	---	---	---	---	10
03/29/2012 *	0	---	0	0	25	---	---	---	---	---	8
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	---	0	23
04/02/2012 *	0	---	0	0	0	0	---	0	---	0	0
04/03/2012 *	0	---	0	4	0	0	0	2	---	0	48
04/04/2012 *	0	---	0	0	64	0	---	0	---	0	126
04/05/2012 *	---	---	0	0	0	---	---	0	---	0	514
04/06/2012	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	12	100	0	0	2	0	0	948
# Days:	13	6	14	14	11	3	1	5	0	5	14
Average:	0	0	0	1	9	0	0	0	0	0	68
YTD	0	0	0	30	100	0	0	2	0	0	1,135

COMBINED STEELHEAD											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
03/23/2012 *	0	---	4	3	---	---	---	---	---	---	14
03/24/2012 *	0	7	1	3	---	---	---	---	---	---	8
03/25/2012 *	0	5	2	0	---	---	---	---	---	---	33
03/26/2012 *	0	17	7	6	1,120	---	---	---	---	---	0
03/27/2012 *	0	31	4	6	1,090	---	---	---	---	---	26
03/28/2012 *	1	70	2	9	1,550	---	---	---	---	---	19
03/29/2012 *	0	---	0	4	4,000	---	---	---	---	---	42
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	---	4	10	4,916	2,033	93	0	---	355	0
04/04/2012 *	73	---	1	5	3,658	2,743	---	0	---	530	76
04/05/2012 *	---	---	0	4	5,898	---	---	2	---	342	61
04/06/2012	---	---	---	---	---	---	---	---	---	---	---
Total:	94	937	30	93	33,504	6,175	93	2	0	1,478	377
# Days:	13	6	14	14	11	3	1	5	0	5	14
Average:	7	156	2	7	3,046	2,058	93	0	0	296	27
YTD	102	1,040	42	100	33,504	6,175	93	2	0	1,478	440

Two-Week Summary of Passage Indices

COMBINED SOCKEYE												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
03/23/2012	*	0	---	0	0	---	---	---	---	---	---	0
03/24/2012	*	0	0	0	0	---	---	---	---	---	---	0
03/25/2012	*	0	0	0	0	---	---	---	---	---	---	0
03/26/2012	*	0	0	0	0	22	---	---	---	---	---	0
03/27/2012	*	0	0	0	0	114	---	---	---	---	---	0
03/28/2012	*	0	0	0	0	55	---	---	---	---	---	0
03/29/2012	*	0	---	0	0	25	---	---	---	---	---	0
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	120	1	3	0	---	0	0
04/04/2012	*	0	---	0	0	64	60	---	0	---	0	0
04/05/2012	*	---	---	0	0	0	---	---	0	---	0	0
04/06/2012		---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	648	63	3	2	0	0	0
# Days:		13	6	14	14	11	3	1	5	0	5	14
Average:		0	0	0	0	59	21	3	0	0	0	0
YTD		0	0	0	0	648	63	3	2	0	0	0

COMBINED LAMPREY JUVENILES												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR [†] (Coll)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)	
03/23/2012	*	0	---	0	0	---	---	---	---	---	---	320
03/24/2012	*	0	0	0	0	---	---	---	---	---	---	360
03/25/2012	*	0	0	0	0	---	---	---	---	---	---	376
03/26/2012	*	0	0	0	0	20	---	---	---	---	---	556
03/27/2012	*	0	0	0	0	20	---	---	---	---	---	392
03/28/2012	*	0	0	0	0	0	---	---	---	---	---	376
03/29/2012	*	0	---	0	0	725	---	---	---	---	---	208
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	150	20	0	0	---	4,028	144
04/04/2012	*	0	---	0	0	50	60	---	0	---	2,536	108
04/05/2012	*	---	---	0	0	950	---	---	0	---	5,328	140
04/06/2012		---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	2,265	140	0	1	0	13,908	3,696
# Days:		13	6	14	14	11	3	1	5	0	5	14
Average:		0	0	0	0	206	47	0	0	0	2,782	264
YTD		6	0	0	0	2,265	140	0	1	0	13,908	6,999

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

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: 04/05

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	04/05	52	0	289	0	3,580	3	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/05	7	0	49	0	1,075	0	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/04	0	0	44	0	445	0	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/05	1	0	26	0	295	0	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/05	5	0	10	0	79	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/05	0	0	3	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/05	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/04	0	0	1	0	2	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	04/04	2	0	28	0	192	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.	10-Yr		Wild 2012	Wild 2011	10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack				2012	2011				
BON	0	0	0	0	0	0	0	0	0	1,670	1,316	1,123	520	576	286
TDA	0	0	0	0	0	0	0	0	0	226	474	343	126	270	131
JDA	0	0	0	0	0	0	0	0	0	297	989	659	185	590	282
MCN	0	0	0	0	0	0	0	0	0	349	753	557	166	483	214
IHR	0	0	0	0	0	0	0	0	0	286	1,029	716	89	299	229
LMN	0	0	0	0	0	0	0	0	0	626	781	762	195	384	301
LGS	0	0	0	0	0	0	0	0	0	747	1,193	745	404	438	259
LGR	0	0	0	0	0	0	0	0	0	5,549	6,801	6,451	1,977	2,129	1,461
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	2,923	5,841	6,050	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: 04/05/12

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:

4/6/12 9:13 AM

03/23/12 TO 04/06/12

Site	Data	Species					Grand Total	
		CH0	CH1	CO	ST	SO		
LGR	Sum of NumberCollected	330	140,020		85	28,430	545	169,410
	Sum of NumberBarged	0	0		0	0	0	0
	Sum of NumberBypassed	330	139,984		85	28,430	543	169,372
	Sum of Numbertrucked	0	0		0	0	0	0
	Sum of SampleMorts	0	36		0	0	2	38
	Sum of FacilityMorts	0	0		0	0	0	0
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	0	36		0	0	2	38
LGS	Sum of NumberCollected	40	7,782			4,729	43	12,594
	Sum of NumberBarged	0	0			0	0	0
	Sum of NumberBypassed	40	7,734			4,718	40	12,532
	Sum of Numbertrucked	0	0			0	0	0
	Sum of SampleMorts	0	6			2	0	8
	Sum of FacilityMorts	0	42			9	3	54
	Sum of ResearchMorts	0	0			0	0	0
	Sum of TotalProjectMorts	0	48			11	3	62
LMN	Sum of NumberCollected		53			69	2	124
	Sum of NumberBarged		0			0	0	0
	Sum of NumberBypassed		53			69	1	123
	Sum of Numbertrucked		0			0	0	0
	Sum of SampleMorts		0			0	1	1
	Sum of FacilityMorts		0			0	0	0
	Sum of ResearchMorts		0			0	0	0
	Sum of TotalProjectMorts		0			0	1	1
Total Sum of NumberCollected		370	147,855		85	33,228	590	182,128
Total Sum of NumberBarged		0	0		0	0	0	0
Total Sum of NumberBypassed		370	147,771		85	33,217	584	182,027
Total Sum of Numbertrucked		0	0		0	0	0	0
Total Sum of SampleMorts		0	42		0	2	3	47
Total Sum of FacilityMorts		0	42		0	9	3	54
Total Sum of ResearchMorts		0	0		0	0	0	0
Total Sum of TotalProjectMorts		0	84		0	11	6	101

YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/6/12 9:13 AM

TO: 04/06/12

Site	Data	Species					Grand Total	
		CH0	CH1	CO	SO	ST		
LGR	Sum of NumberCollected	330	140,020		85	545	28,430	169,410
	Sum of NumberBarged	0	0		0	0	0	0
	Sum of NumberBypassed	330	139,984		85	543	28,430	169,372
	Sum of NumberTrucked	0	0		0	0	0	0
	Sum of SampleMorts	0	36		0	2	0	38
	Sum of FacilityMorts	0	0		0	0	0	0
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	0	36		0	2	0	38
LGS	Sum of NumberCollected	40	7,782			43	4,729	12,594
	Sum of NumberBarged	0	0			0	0	0
	Sum of NumberBypassed	40	7,734			40	4,718	12,532
	Sum of NumberTrucked	0	0			0	0	0
	Sum of SampleMorts	0	6			0	2	8
	Sum of FacilityMorts	0	42			3	9	54
	Sum of ResearchMorts	0	0			0	0	0
	Sum of TotalProjectMorts	0	48			3	11	62
LMN	Sum of NumberCollected		53			2	69	124
	Sum of NumberBarged		0			0	0	0
	Sum of NumberBypassed		53			1	69	123
	Sum of NumberTrucked		0			0	0	0
	Sum of SampleMorts		0			1	0	1
	Sum of FacilityMorts		0			0	0	0
	Sum of ResearchMorts		0			0	0	0
	Sum of TotalProjectMorts		0			1	0	1
Total Sum of NumberCollected		370	147,855		85	590	33,228	182,128
Total Sum of NumberBarged		0	0		0	0	0	0
Total Sum of NumberBypassed		370	147,771		85	584	33,217	182,027
Total Sum of NumberTrucked		0	0		0	0	0	0
Total Sum of SampleMorts		0	42		0	3	2	47
Total Sum of FacilityMorts		0	42		0	3	9	54
Total Sum of ResearchMorts		0	0		0	0	0	0
Total Sum of TotalProjectMorts		0	84		0	6	11	101