



Fish Passage Center

Weekly Report #12 - 09

May 11, 2012

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 52% and 106% of average at individual sub-basins over April. Precipitation above The Dalles has been 86% of average over April. Over the 2012 water year, precipitation has ranged between 81% and 114% of average.

Table 1. Summary of April precipitation and cumulative October through April 23, 2012 precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2012 April 1-23, 2012		Water Year 2012 October 1, 2011 to April 23, 2012	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.10	87	17.33	112
Snake River Above Ice Harbor	0.86	77	11.49	101
Columbia Above The Dalles	1.08	86	16.65	107
Kootenai	1.11	83	17.72	111
Clark Fork	0.84	89	11.37	114
Flathead	1.16	96	14.63	109
Pend Oreille/ Spokane	1.62	94	23.96	109
Central Washington	0.40	81	5.21	81
Snake River Plain	0.42	52	6.74	98
Salmon/Boise/ Payette	0.93	76	14.06	100
Clearwater	1.77	87	22.56	109
SW Washington Cascades/Cowlitz	4.36	106	57.05	99
Willamette Valley	3.47	94	51.53	105

Average snowpack in the Columbia River for basins above the Snake River confluence is 110% of average, for Snake River Basins the average snowpack is 58% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 103% 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" April ESP forecast was produced on April 5, 2012.

Table 2 displays the April 5th (official) and May 2nd 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. April "Official" and May 2nd ESP Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Location	April 5, 2012 ESP		May 2, 2012 ESP	
	% Average (1971 -2000)	Runoff Volume (Kaf)	% Average (1971 -2000)	Runoff Volume (Kaf)
The Dalles (Jan-July)	106	114135	110	117946
Grand Coulee (Jan-July)	110	69099	113	71391
Libby Res. Inflow, MT (Apr-Aug)	117	7312 6872*	116	7219
Hungry Horse Res. Inflow, MT (Jan-July)	103	2285	100	2224
Lower Granite Res. Inflow (Apr- July)	106	22825	105	22625
Brownlee Res. Inflow (Apr-July)	103	6512	97	6122
Dworshak Res. Inflow (Apr-July)	109	2874 2966*	117	3098 3226*

* Denotes COE Forecast

Grand Coulee Reservoir is at 1238.4 feet (5-3-12) and refilled 2.5 feet over the last week. Outflows at Grand Coulee have ranged between 145.0 and 218.6 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2392.8 feet (5-3-12) and has refilled 6.4 feet last week. Outflows at Libby Dam have been 9.8-13.4 Kcfs last week.

Hungry Horse is currently at an elevation of 3532.7 feet (5-3-12) and has refilled 2.9 feet last week. Outflows at Hungry Horse have ranged between 8.1 and 9.2 Kcfs last week.

Dworshak is currently at an elevation of 1534.7 feet (5-3-12) and has refilled 6.9 feet last week. Outflows from Dworshak have been 14.3 Kcfs over the past week.

The Brownlee Reservoir was at an elevation of 2034.9 feet on May 2nd, 2012 refilling 6.2 feet last week. Over the last week, outflows at Brownlee have ranged between 28.5 and 34.2 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 have averaged 149.1 Kcfs over the last week and 120.2 Kcfs over the spring period.

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 391.8 Kcfs over the last week and 336.9 Kcfs over the spring period. Flows at Priest Rapids Dam have averaged 232.5 Kcfs over the last week and 201.5 Kcfs over the spring period.

Spill:

Spill occurred at Dworshak Dam over the past week as it continued to operate above powerhouse capacity to manage a controlled refill of the project. Spill for fish passage began on April 3rd at the lower Snake River projects, and on April 10th at the lower Columbia River projects.

Snake River flows peaked on April 27th and have decreased 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.

At Lower Granite Dam spill has exceeded the Court Ordered 20 Kcfs, and has ranged from a daily

average of 28.7 Kcfs to 92.5 Kcfs. At Little Goose Dam, spill varied widely. Most of the time spill met, or exceeded, the 30% of instantaneous flow level as specified in the Court Order when river flows increased to levels in excess of hydraulic capacity at the project. However, there were several hours when spill was less than the Court Order, ostensibly to address TDG in the Lower Monumental forebay. At Lower Monumental Dam the COE implemented a downward adjustment in hourly spill levels to as low as 24 Kcfs. The hourly adjustments are to address TDG at the Ice Harbor Dam forebay. However, daily spill levels ranged from 35.4 Kcfs to 90.4 Kcfs, and even on the day with the lowest daily average of 35.4, spill levels ranged from 24 to 50 Kcfs. Therefore, the operation for TDG management makes little sense at this project. At Ice Harbor Dam the Court Order “test-like” conditions are in place. Due to high flows spill has exceeded the “test-like” specifications.

Project	Day/Night Spill
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	“Test-Like”: 45 Kcfs/gas cap vs. 30%/30%

Spill for fish passage at the Lower Columbia projects began on April 10th. Flows have remained high in the lower Columbia River. 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 changed to the test levels of 30%/30% versus 40%/40%. Spill did not achieve the 40% objective due to TDG exceedences at the tailrace, and at The Dalles Dam forebay monitor. At The Dalles Dam, spill did not always meet the 40% objective due to TDG at the Bonneville forebay exceeding the 115% criteria. At Bonneville Dam spill was consistently been above the 100 Kcfs in the Court Order. Daily average spill levels have ranged from 177 Kcfs to 212 Kcfs.

Project	Day/Night Spill
McNary	40%/40%
John Day	Testing: 30%/30% vs. 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

During the beginning of the week the system was generally above the TDG standards due to uncontrolled spill associated with high river flows. By week's end the Snake River TDG readings were decreasing with the decreasing flows, while meeting standards in the lower Columbia continues to be problematic due to continued high flows.

Gas bubble trauma samples were taken this past week at Lower Granite, Little Goose, Lower Monumental, Rock Island, McNary and Bonneville dams. The most recent samples estimated fish with signs of GBT equal to: 1% at Lower Granite (5/3); 1% at Lower Monumental (5/2), 4% and 3% at McNary (4/30 and 5/4), 1% at Bonneville (4/28) and 1% at Rock Island (5/2). All the affected fish exhibited minor signs (Rank 1 and Rank 2) of GBT.

Smolt Monitoring:

Smolt monitoring activities are ongoing at all seven SMP dams (BON, JDA, MCN, LGR, LGS, LMN, and RIS) and all four smolt traps.

The passage index for yearling Chinook at BON increased this week. The daily average passage index at BON for yearling Chinook this week was nearly 69,000 per day compared to 30,575 per day last week. Subyearling Chinook numbers decreased substantially this week. This substantial decrease was due to the passage of subyearling fall Chinook tules that were released from Spring Creek NFH. These fall Chinook tules were released on April 30th and had mostly passed BON by May 4th. Sockeye passage at BON increased this week, with a daily average passage index of 21,121 per day. The daily average passage index for sockeye juveniles at BON last week was 975 per day. The majority of the sockeye juveniles passing BON now are unclipped and are likely from the Upper Columbia River. Mortality rates for sockeye at BON have been relatively high this week, with a range in mortality of 2.9% on May 6th to 10.3% on May 7th. The passage indices of coho and steelhead also increased this week, compared to last week. Finally, there was a slight increase in the collection counts of juvenile lamprey this week. The daily average collection for pacific lamprey macrophthalmia this week was 161 per day, compared to 126 per day last week. No Pacific lamprey ammocoetes were collected at BON this week.

Yearling Chinook continue to be the dominant species of salmonid at John Day Dam this week, with an average daily passage index of 196,567 per day over the past week. This is an increase in yearling

Chinook passage over last week, which had a daily average passage index of 159,717 per day. Steelhead numbers at JDA decreased this week. The daily average passage index for steelhead this week was 105,119, compared to 144,010 per day last week. Coho, sockeye, and juvenile lamprey numbers also increased at JDA this week. Most of the lamprey juveniles collected at JDA this week were Pacific macrophthalmia, with just a few Pacific ammocoetes being collected on May 7th. Yearling Chinook were also the dominant species of salmonid at McNary Dam this week, with an average daily passage index of 163,533 per day. This week's yearling Chinook passage is larger than last week, which had a daily passage index of only 136,533 per day. Steelhead passage decreased this week at MCN. The daily average passage index for steelhead at MCN this week was 30,687, compared to last week's daily average passage index of 54,049 per day. Sockeye passage also increased this week. The daily average passage index for sockeye at MCN this week was 97,222 per day. The daily average passage index for this week is more than double that for last week. Finally, passage of coho juveniles at MCN also increased this week. So far this year, only Pacific macrophthalmia have been collected at MCN, no Pacific ammocoetes.

Yearling Chinook and steelhead passage at LGR decreased this week. The daily average passage index for yearling Chinook at LGR this week was 54,253 per day, compared to 149,540 per day last week. This week's daily average passage index for steelhead at LGR was 41,894. The daily passage index for steelhead at LGR last week was 139,481. Subyearling Chinook and coho decreased this week, while sockeye/kokanee passage increased. LGR sampled their first sockeye juvenile of known hatchery origin this week (May 9th). Finally, no lamprey juveniles were sampled this week at LGR.

Transportation from LGS and LMN began this week, with the first barge leaving LGS on May 4th and the first barge leaving LMN on May 6th. With the initiation of transportation at these sites, sampling is no longer limited to condition monitoring only. Since transportation was initiated at LGS, yearling Chinook have been the dominant species of salmonid. Since this time, the daily average passage index for yearling Chinook was 125,392 per day. Steelhead were the second most abundant species at LGS this week, with a daily average passage index of 41,385. Yearling

Chinook and steelhead were also the most dominant species at LMN since the initiation of transportation. Since May 5th, the daily average passage indices for yearling Chinook and steelhead at LMN were 53,642 and 26,531, respectively.

Juvenile numbers at Rock Island Dam continued to increase for nearly all species this week. Based on the passage index, sockeye were the dominant salmonid species at RIS this week. The daily average passage index for sockeye at RIS this week was 2,957 fish per day, compared to a daily average passage index of 487 per day last week. The daily average passage index for yearling Chinook and coho at RIS were similar this week, with an average of nearly 950 yearling Chinook per day and 925 coho per day. Steelhead numbers also increased this week. The daily average passage index for steelhead this week was 635 per day, compared to a daily average of 541 per day last week. Very few lamprey juveniles were collected at RIS this week.

After a period of high flows and debris, collection activities at the Grande Ronde Trap resumed on May 2nd, with a sample available on May 3rd. Since this time, yearling Chinook have been the dominant species, with a daily average collection of 137, of which about 39% were of known hatchery origin. Over the same period, the daily average steelhead collection at GRN has been 17 per day. The increase in yearling Chinook and steelhead passage in the May 10th sample could be due to the fact that the trap was moved to a location where it is more efficient at collecting fish and not necessarily because of increased fish passage at this time.

After a period of high flows and debris, collection activities at the Salmon River Trap resumed on May 4th, with a sample available on May 5th. Since this time, steelhead have been the dominant species, with a daily average collection of 195 per day. Over the same period, the daily average collection of yearling Chinook at the Salmon River Trap was 33 per day. Finally, the Salmon River Trap collected its first sockeye juveniles of the 2012 season in the May 5th sample. To date, all sockeye juveniles collected at this trap were unclipped.

After a period of high flows and debris, collection activities at the Snake River Trap resumed on May 2nd, with a sample available on May 3rd. Since this time, yearling Chinook were the dominant species, with a daily average collection of 239 per day, of which about 84% were of known hatchery origin.

Over the same period, the daily average collection for steelhead was 55 per day.

Over the past week of available data, steelhead have been the dominant species of salmonid at the Imnaha River Trap. The daily average collection for steelhead at IMN since May 4th was 254 per day. The daily average collection for yearling Chinook at IMN over this same period was 30 per day.

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. Approximately 200,000 subyearling fall Chinook smolts were scheduled for release into the Snake River this week. These subyearling fall Chinook juveniles were scheduled to be released just below Hells Canyon Dam. The only other releases that were scheduled to begin this week in this zone were two releases of summer steelhead to the Salmon River. In all, 459,000 summer steelhead were to be released this week. Of these, an anticipated 50.2% were unmarked.

Several releases of subyearling fall Chinook are scheduled for this zone over the next two weeks. In all, these releases are expected to total over 2.8 million fall Chinook juveniles. Of these, about 82% are scheduled for release into the Snake River and 18% are scheduled for release into the Clearwater River. All subyearling fall Chinook Snake River releases scheduled for the Snake River are to take place above Lower Granite Dam. In addition, about 8.2% of the subyearling fall Chinook juveniles that are scheduled for release over the next two weeks are fall Chinook surrogates and are unmarked. However, these fall Chinook surrogates are 100% PIT-tagged. Finally, about 165,000 sockeye smolts are scheduled to be released into the Salmon River, beginning next week. All of these sockeye smolts are unclipped but are tagged with coded-wire tags.

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 550,000 subyearling fall Chinook juveniles were scheduled to be released into the Yakima River this week. All of these subyearling fall Chinook juveniles were to be released from the Prosser Acclimation Facility and were unmarked. In addition, about 850,000 yearling spring Chinook were scheduled to be released into the Methow River (65%) and Wenatchee River (35%) this week. All of these spring Chinook juveniles are marked with adipose fin

clips and/or coded-wire-tags. Finally, just over 95,000 coho juveniles were scheduled for release into the Methow River this week. This release was scheduled to take place from the Twisp Acclimation Pond and all coho juveniles were unclipped but tagged with coded-wire-tags.

Beginning next week, approximately 484,000 subyearling summer Chinook will be released into the Mid-Columbia River, from Wells Hatchery. In addition, approximately 345,000 yearling fall Chinook juveniles are scheduled to be released into the Yakima River next week. One release of yearling spring Chinook is scheduled for this zone next week. This release is scheduled for the Wenatchee River and is expected to total about 150,000 spring Chinook juveniles, all of which are unmarked. Several volitional releases of coho juveniles are scheduled to begin over the next two weeks. In all, these volitional releases are expected to total over 281,000 juveniles, all of which are scheduled to take place from acclimation facilities on the Wenatchee River. All of these coho juveniles are unclipped but are tagged with coded-wire tags and/or blank wire body tags. Finally, about 305,000 summer steelhead juveniles are scheduled for release into this zone over the next two weeks. Of these, about 74% are scheduled for release into the Wenatchee River and 26% 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. There were no new releases of juvenile salmonids planned for this zone this week. There is only one release of juvenile salmonids scheduled for this zone over the next two weeks. This is a release of approximately 600,000 subyearling fall Chinook juveniles to the Umatilla River, which is scheduled to begin on or around May 20th.

Adult Fish Passage:

Adult counts at Bonneville Dam have been updated through May 10th. Daily adult spring Chinook counts at Bonneville Dam ranged from 3002 to 18,346 adult salmon per day. As of May 10th, using the historical counting schedule, 89,049 spring Chinook have been counted at Bonneville Dam. In 2011, 125,545 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2012 adult spring Chinook count at Bonneville Dam is 71% of the 2011 count and 78.2% of the 10 year average of 113,835. At Willamette Falls Dam 2,467

adult spring Chinook has been counted so far this year. At The Dalles Dam, 36,532 adult spring Chinook have been counted and at McNary Dam 10,467 adult spring Chinook have been counted so far this season. The Dalles Dam 2012 adult spring Chinook count is 46.5% of the 2011 count and 49.6% of the 10 year average count. The 2012 McNary Dam adult spring Chinook count is about 27.3% of the 2011 count and 22.9% of the 10 year average count.

The Bonneville Dam 2012 steelhead count of 2,964 is about 1.07 times greater than the 2011 count of 2,758 and 1.01 times greater than the 10 year average count of 2,937. The 2012 Bonneville wild adult steelhead count of 894 is about 86.5% of the 2011 count of 1,033, while being about 1.05 times greater than the 10 year average count of 853. 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 23 to 36 adults per day last week. This year's Lower Granite steelhead count of 8,699 is about 72.4% of the 2011 count of 12,021 and 88.2% of the 10 year average of 9,861. The 2012 Lower Granite wild adult steelhead count of 3,762 is about 97.7% of the 2011 count of 3,850, while being about 1.23 times greater than the 10 year average count of 3,062. At Willamette Falls Dam, the 2012 count for steelhead was 8,902, as of May 8th. This year's steelhead count is about 96.3% of the 2011 count of 9,244 and about 78.3% of the 10 year average count of 11,373.

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	4/27/2012			to	05/10/12				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	88,704	05-01-12	05-02-12	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	98,655	05-02-12	05-03-12	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2012	281,101	04-26-12	05-01-12	Squaw Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Oxbow-Idaho	CH0	FA	2012	200,000	05-05-12	05-05-12	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game Total					668,460				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2012	257,658	04-21-12	05-03-12	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2012	327,637	04-14-12	05-07-12	Big Canyon Acclim.Pd (Grande Ronde)	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2012	211,920	04-17-12	06-01-12	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife Total					797,215				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2012	196,144	04-25-12	04-30-12	East Fk Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2012	228,000	05-06-12	05-17-12	Yankee Fk (Salmon R)	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2012	230,000	05-06-12	05-17-12	Yankee Fk (Salmon R)	Salmon River (ID)
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2012	4,806,922	04-30-12	04-30-12	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
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					6,618,017				
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					760,000				
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2012	25,000	04-29-12	04-29-12	E Fk Irrig Dist Sand Trap	Hood River
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2012	25,000	04-29-12	05-13-12	Parkdale Acclim Pond	Hood River
Warm Springs Tribe Total					50,000				
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2012	617,950	04-06-12	05-07-12	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	SP	2013	30,000	05-01-12	05-15-12	Tucannon River	Tucannon 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	176,500	04-25-12	05-01-12	Cottonwood Acclim Pond	Grande Ronde 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	Methow 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	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					1,969,750				
Yakama Tribe	Cascade Hatchery	CO	UN	2012	65,662	05-02-12	06-30-12	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Chelan Hatchery	ST	SU	2012	25,000	05-02-12	07-01-12	Rolfings Acclim Pond	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	Klickitat Hatchery	CO	NO	2012	1,080,000	05-01-12	05-01-12	Klickitat Hatchery	Klickitat River
Yakama Tribe	Little White Salmon NFH	CH0	FA	2012	1,700,000	05-04-12	05-04-12	Prosser Acclim Pond	Yakima River
Yakama Tribe	Methow Hatchery	CH1	SP	2012	60,000	04-19-12	05-02-12	Biddle Pond	Methow River
Yakama Tribe	Priest Rapids Hatchery	CH0	FA	2012	550,000	05-04-12	05-04-12	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH1	FA	2012	23,000	05-04-12	05-04-12	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2012	23,000	05-04-12	05-04-12	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2012	250,000	05-05-12	05-05-12	Prosser Acclim Pond	Yakima 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	CO	UN	2012	57,474	04-06-12	05-01-12	Nason Wetlands	Wenatchee River
Yakama Tribe Total					5,306,097				
Grand Total					16,169,539				

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:		5/11/2012	to	5/24/2012					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Oxbow-Oregon	SO	UN	2012	85,000	05-12-12	05-12-12	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery	SO	UN	2012	80,000	05-12-12	05-12-12	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game Total					165,000				
National Marine Fisheries Service	Lyons Ferry Hatchery	CH0	FA	2012	230,000	05-21-12	06-08-12	Couse Creek	Snake River
National Marine Fisheries Service Total					230,000				
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2012	400,000	05-20-12	05-31-12	Pittsburg Landing Acclim Pond	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2012	500,000	05-20-12	05-31-12	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2012	500,000	05-20-12	05-31-12	Cpt John Acclim Pond	Snake River
Nez Perce Tribe Total					1,400,000				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2012	375,000	05-24-12	05-24-12	Grande Ronde River	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2012	800,000	05-22-12	05-24-12	Hells Canyon Dam	Snake River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2012	211,920	04-17-12	06-01-12	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife Total					1,386,920				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2012	228,000	05-06-12	05-17-12	Yankee Fk (Salmon R)	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2012	230,000	05-06-12	05-17-12	Yankee Fk (Salmon R)	Salmon River (ID)
U.S. Fish and Wildlife Service Total					458,000				
Umatilla Tribe	Umatilla Hatchery	CH0	FA	2012	600,000	05-20-12	05-31-12	Umatilla River	Umatilla River
Umatilla Tribe Total					600,000				
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2012	25,000	04-29-12	05-13-12	Parkdale Acclim Pond	Hood River
Warm Springs Tribe Total					25,000				
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2012	298,000	05-11-12	05-20-12	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	ST	SU	2012	200,000	05-15-12	05-20-12	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2012	150,000	05-15-12	05-15-12	White River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2012	25,000	05-12-12	06-30-12	Blackbird Island Acc Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	SP	2013	30,000	05-01-12	05-15-12	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2012	183,300	05-11-12	05-11-12	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2012	183,300	05-11-12	05-11-12	Methow Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2012	183,300	05-11-12	05-11-12	Twisp 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	Skamania Hatchery	ST	SU	2012	90,000	04-15-12	05-15-12	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2012	484,000	05-12-12	05-25-12	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2012	80,000	05-20-12	05-20-12	Okanogan River	Okanogan 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					2,506,900				
Yakama Tribe	Cascade Hatchery	CO	UN	2012	65,537	05-14-12	07-01-12	Rolfings Acclim Pond Beaver Creek Acclim	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2012	65,564	05-13-12	07-14-12	Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2012	65,662	05-02-12	06-30-12	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Chelan Hatchery	ST	SU	2012	25,000	05-02-12	07-01-12	Rolfings Acclim Pond	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	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	Wells Hatchery	CH1	FA	2012	345,000	05-14-12	05-14-12	Stiles Pond Beaver Creek Acclim	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2012	31,423	05-13-12	07-14-12	Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2012	31,533	05-14-12	07-01-12	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2012	86,994	05-14-12	06-02-12	Coulter Creek	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2012	95,257	05-11-12	06-11-12	Twisp Acclim Pond	Methow River
Yakama Tribe Total					2,283,931				
Grand Total					9,055,751				

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

Daily Average Flow and Spill (in kcfs) at Mid-Columbia Projects

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/27/2012	150.9	3.3	148.7	40.0	177.8	27.1	176.8	25.4	188.3	23.1	203.8	93.5	204.1	88.7
04/28/2012	145.0	0.4	142.0	23.6	162.2	18.6	152.7	18.0	160.3	21.5	175.7	57.9	178.6	58.5
04/29/2012	181.2	7.7	175.8	66.2	203.0	33.3	192.9	17.5	199.6	21.7	202.6	85.7	207.5	122.2
04/30/2012	211.4	9.6	208.7	106.9	235.9	67.2	231.9	52.4	232.2	54.6	244.8	118.9	243.4	155.9
05/01/2012	209.7	9.6	211.1	80.0	236.2	68.0	229.6	70.6	232.7	50.4	251.6	127.4	250.3	131.6
05/02/2012	213.7	8.3	220.4	104.2	246.4	90.7	245.5	63.3	242.9	54.8	263.6	140.7	270.7	165.9
05/03/2012	218.6	9.6	217.2	92.3	247.0	78.1	244.4	54.9	240.5	51.8	259.1	133.8	272.9	176.1
05/04/2012	205.8	3.1	216.8	101.1	249.3	89.0	237.4	73.7	239.1	45.4	259.5	138.2	262.1	155.9
05/05/2012	204.0	0.0	202.7	73.0	226.2	75.2	221.6	68.0	224.7	31.0	238.7	125.7	247.1	131.6
05/06/2012	202.5	0.0	209.7	67.3	236.5	66.9	227.1	55.6	228.4	36.4	247.2	120.7	243.2	140.6
05/07/2012	199.8	0.0	200.8	70.6	225.3	59.9	217.6	48.8	217.9	38.0	229.5	112.2	226.5	102.3
05/08/2012	197.6	5.0	202.9	90.1	229.4	63.1	220.0	48.3	218.8	46.5	234.5	114.1	237.4	134.0
05/09/2012	209.6	0.0	213.0	111.0	239.9	77.8	232.0	67.7	228.8	56.2	247.5	126.4	255.2	156.3
05/10/2012	207.7	0.0	213.3	96.2	246.6	79.3	239.9	67.3	237.6	58.8	256.6	131.5	259.9	141.3

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/27/2012	14.4	4.1	39.8	30.9	186.3	92.5	178.4	72.0	192.6	90.4	192.2	123.5		
04/28/2012	14.4	4.3	43.1	30.9	178.4	84.4	168.3	63.3	180.1	67.3	184.3	116.8		
04/29/2012	14.5	4.4	38.5	30.9	154.3	60.9	144.5	44.5	153.6	42.7	156.3	88.6		
04/30/2012	14.3	4.2	35.0	33.0	135.1	43.2	127.2	42.3	133.8	36.6	134.9	78.0		
05/01/2012	14.4	4.2	35.6	35.3	137.8	46.9	129.6	41.9	136.3	43.2	141.8	76.8		
05/02/2012	14.3	4.1	33.5	35.7	130.4	37.8	122.7	38.9	129.3	38.5	132.6	73.3		
05/03/2012	14.3	3.9	33.9	35.4	121.4	28.7	114.9	34.4	119.7	35.4	123.4	71.5		
05/04/2012	10.5	0.7	36.3	33.3	113.7	42.2	109.6	44.7	115.4	43.0	117.9	74.4		
05/05/2012	2.7	0.0	39.6	33.3	103.9	43.9	98.6	37.6	102.4	32.4	104.1	62.7		
05/06/2012	2.7	0.0	36.3	33.5	97.4	23.5	93.8	28.0	96.9	23.6	98.5	58.7		
05/07/2012	8.1	0.0	33.6	32.5	98.9	22.7	95.2	29.0	100.2	27.6	100.0	64.7		
05/08/2012	8.0	0.0	33.0	30.4	93.6	30.1	88.9	30.4	92.2	29.6	95.4	55.7		
05/09/2012	8.0	0.5	30.6	30.0	93.4	42.6	90.3	39.1	92.7	34.5	93.4	66.7		
05/10/2012	8.0	0.0	---	---	96.8	25.3	94.7	29.8	97.1	26.1	97.6	36.6		

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
04/27/2012	394.7	240.0	420.1	154.4	393.8	150.0	418.2	211.9	90.8	103.0
04/28/2012	394.9	221.7	420.9	159.2	411.0	166.2	425.0	219.8	90.1	102.7
04/29/2012	381.0	206.3	389.2	147.7	378.6	140.3	418.5	210.2	90.0	105.9
04/30/2012	382.6	210.4	384.7	145.5	365.7	174.6	398.6	180.5	98.9	106.7
05/01/2012	393.1	221.3	401.2	175.4	385.4	204.2	406.9	167.6	125.7	101.1
05/02/2012	397.6	224.2	410.9	176.8	390.6	201.2	421.4	186.3	117.8	104.9
05/03/2012	398.8	225.3	407.1	173.8	392.5	196.4	404.0	176.5	100.9	114.2
05/04/2012	393.2	219.5	405.1	166.0	388.7	167.4	419.2	191.4	92.1	123.3
05/05/2012	379.9	206.9	388.0	161.3	368.8	161.2	389.0	168.2	93.4	114.9
05/06/2012	355.5	181.1	378.6	152.4	361.5	145.3	394.9	173.4	93.7	115.4
05/07/2012	347.6	173.8	359.2	144.3	342.3	145.6	369.3	154.3	84.8	117.8
05/08/2012	344.7	170.8	338.3	131.8	318.8	104.7	350.7	127.0	84.3	127.0
05/09/2012	340.3	183.1	338.5	140.5	323.4	163.5	336.7	114.0	84.8	125.5
05/10/2012	334.2	164.5	344.7	137.4	323.7	139.1	357.9	129.2	89.7	126.6

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			#	<u>Boundary</u>			#	<u>Grand Coulee</u>			#	<u>Grand C. Tlwr</u>			#	<u>Chief Joseph</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
4/27	100.1	100.6	100.9	24	122.9	123.6	124.7	22	110.1	110.3	110.7	24	112.7	115.4	118.3	22	108.3	108.5	108.7	24
4/28	99.4	99.7	100.4	24	124.7	125.3	127.3	21	110.2	110.5	111.5	24	108.1	108.3	108.9	21	111.6	115.0	117.4	24
4/29	100.1	100.4	100.9	24	124.8	125.7	126.5	24	111.4	112.1	112.6	24	114.9	117.9	119.0	24	113.5	115.9	117.3	24
4/30	100.8	101.2	101.3	24	125.3	126.2	127.4	24	112.5	112.7	113.4	24	119.2	119.5	119.8	24	111.9	113.4	114.7	24
5/1	99.3	99.6	100.1	24	125.5	126.0	126.6	22	112.0	112.3	112.6	24	118.9	119.2	119.4	23	116.5	117.2	117.5	24
5/2	98.7	99.0	99.1	22	125.2	125.7	126.1	19	112.6	112.9	113.2	23	118.7	120.0	121.3	23	117.3	117.6	118.0	24
5/3	98.4	98.6	98.7	24	125.0	125.2	125.3	24	113.3	113.5	113.7	24	120.8	121.0	121.3	22	117.9	118.3	118.4	24
5/4	98.1	98.4	98.7	24	124.1	124.5	124.9	23	112.9	113.2	113.9	24	113.9	116.8	120.8	21	118.4	118.9	119.3	24
5/5	98.2	98.4	98.8	23	125.0	125.5	126.1	21	112.1	112.2	112.4	24	109.6	109.7	109.9	21	117.8	118.6	119.0	24
5/6	97.8	97.9	98.1	24	124.1	124.9	125.2	22	111.9	112.2	112.6	24	109.5	109.7	109.9	22	110.1	110.7	112.9	24
5/7	97.5	97.7	98.0	21	124.5	124.7	125.6	17	112.8	113.4	113.8	24	110.2	110.5	110.9	17	110.2	110.7	110.9	24
5/8	98.1	98.4	98.8	24	124.0	124.6	126.1	22	114.5	115.3	116.4	24	114.7	118.1	121.0	22	111.3	111.9	112.2	24
5/9	98.6	98.8	99.0	24	125.1	126.8	128.2	24	115.0	115.1	115.4	23	112.3	112.6	112.8	24	112.7	114.0	116.8	24
5/10	97.5	97.9	98.4	24	122.0	123.6	125.5	24	114.3	114.6	114.9	24	111.6	111.8	112.1	24	113.4	115.4	117.9	24

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			#	<u>Wells</u>			#	<u>Wells Dwnstrm</u>			#	<u>Rocky Reach</u>			#	<u>Rocky R. Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
4/27	113.2	116.5	117.0	24	109.7	110.1	111.1	24	113.2	114.1	114.6	24	114.9	115.8	116.4	24	112.4	113.2	114.1	24
4/28	110.6	113.3	115.1	24	109.6	110.2	110.8	24	112.1	112.9	113.4	24	113.2	113.5	113.9	24	110.9	112.5	113.9	24
4/29	114.3	115.9	117.5	24	113.6	116.0	116.9	24	116.2	118.8	122.2	24	112.9	113.6	114.0	24	112.3	113.1	113.8	24
4/30	119.0	122.1	122.9	24	113.1	113.8	115.1	24	121.0	122.1	122.8	24	116.6	118.3	119.6	24	114.0	115.0	116.6	24
5/1	117.5	120.3	122.0	24	113.8	114.6	116.0	24	121.0	121.8	122.7	24	118.7	120.0	120.8	24	117.4	121.1	122.7	24
5/2	116.3	116.6	117.4	24	115.7	116.3	116.7	24	124.6	126.3	129.0	24	119.7	120.3	121.3	24	123.6	123.9	124.3	24
5/3	115.9	116.2	116.4	24	115.6	115.7	116.1	24	122.6	123.3	124.0	24	123.1	124.2	125.2	24	125.5	126.2	126.6	24
5/4	116.9	117.2	117.6	24	115.6	116.2	116.6	23	123.5	124.0	124.4	23	120.6	120.9	121.3	24	124.4	124.8	125.3	24
5/5	117.2	117.4	117.7	24	115.6	115.9	116.3	24	122.8	124.2	124.9	24	120.5	121.1	121.7	24	123.6	124.0	124.4	24
5/6	115.2	116.1	117.1	24	113.4	114.3	115.5	24	120.3	121.5	122.6	24	121.1	121.5	121.8	24	124.2	124.3	124.5	24
5/7	114.5	115.1	115.3	24	111.0	111.7	112.0	24	118.3	118.8	119.8	24	120.4	121.2	121.8	24	123.8	124.1	124.8	24
5/8	115.5	116.4	117.1	24	112.6	113.2	113.3	24	119.6	120.5	122.5	24	118.7	118.9	119.1	24	122.8	123.0	123.4	24
5/9	116.4	116.8	117.3	24	113.1	113.6	114.0	24	121.4	122.7	125.6	24	117.4	118.0	118.6	24	122.9	123.3	123.5	24
5/10	116.4	117.5	118.3	24	113.6	115.3	115.8	24	121.4	123.0	123.6	24	118.1	118.8	119.3	24	122.4	123.4	124.0	24

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			#	<u>Rock I. Tlwr</u>			#	<u>Wanapum</u>			#	<u>Wanapum Tlwr</u>			#	<u>Priest Rapids</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
4/27	114.1	115.2	115.6	24	116.3	117.5	117.7	24	113.8	114.1	114.8	24	118.1	119.4	122.5	24	116.7	118.2	119.6	24
4/28	112.0	112.8	113.4	24	114.6	115.7	116.2	24	114.3	115.1	115.6	24	114.9	116.6	120.5	24	115.5	116.8	117.8	24
4/29	113.7	114.2	114.7	24	115.7	116.3	116.8	24	116.0	116.8	117.1	24	118.7	120.2	121.7	24	116.9	119.5	120.5	24
4/30	115.5	117.0	117.3	24	119.7	121.6	123.2	24	116.2	116.5	116.8	24	121.4	122.8	125.7	24	117.9	119.1	120.3	24
5/1	118.8	119.5	119.7	24	122.5	123.5	124.5	24	114.5	114.9	115.5	24	122.3	124.1	125.5	24	121.1	123.4	124.2	24
5/2	119.7	120.1	120.4	24	122.4	122.9	123.1	24	117.6	119.0	119.4	24	125.4	125.7	126.7	15	120.0	122.2	123.7	24
5/3	121.9	122.9	123.9	24	123.6	124.4	125.1	24	120.4	121.2	121.6	24	124.9	125.7	126.4	24	122.1	122.6	123.3	24
5/4	120.8	121.3	121.6	24	122.7	123.2	124.3	24	118.9	119.3	119.8	24	125.5	126.2	127.1	24	121.0	121.6	122.4	24
5/5	119.8	120.0	120.4	24	121.4	121.9	123.2	24	116.7	116.9	117.3	24	123.9	125.5	127.3	24	120.3	120.8	121.2	24
5/6	120.6	121.4	121.9	24	122.1	122.6	123.0	24	118.9	120.3	120.9	24	122.6	123.0	124.4	24	119.1	120.2	120.7	24
5/7	120.5	121.3	122.0	24	122.0	122.7	123.2	24	121.8	123.2	123.9	24	122.6	123.5	124.4	24	121.4	122.0	122.9	24
5/8	119.1	119.7	120.2	24	121.3	121.7	122.0	24	122.7	123.2	123.8	24	123.3	124.9	125.7	24	121.6	123.1	124.4	24
5/9	118.0	118.2	118.4	24	122.1	123.0	123.7	24	118.8	120.5	121.9	24	124.1	125.2	126.7	24	118.7	119.4	120.6	24
5/10	118.1	119.8	120.7	24	122.0	123.5	124.4	24	116.3	117.2	117.7	24	123.9	125.0	125.9	24	120.1	121.8	123.1	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>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>	
4/27	118.9	119.3	119.6	24	111.2	112.6	113.6	24	107.3	108.3	108.9	24	104.0	104.6	105.1	24	105.9	107.2	107.6	24
4/28	117.5	118.3	119.4	24	115.0	116.0	116.6	24	107.0	108.0	108.6	24	104.2	104.9	105.2	24	107.0	107.3	107.6	24
4/29	120.2	121.2	122.0	24	115.1	116.1	116.9	24	108.2	108.9	109.5	24	104.4	104.9	105.6	24	106.4	106.9	107.4	24
4/30	121.2	121.5	121.7	24	114.8	116.0	117.5	24	108.6	109.3	110.0	24	104.3	104.8	105.4	24	105.4	105.8	106.0	24
5/1	122.4	122.8	123.4	24	114.0	115.7	116.3	24	108.1	108.9	109.2	24	103.6	103.9	104.5	24	105.0	105.8	106.4	24
5/2	122.6	123.7	124.2	24	116.3	117.1	117.4	24	108.1	108.6	109.0	24	103.8	104.2	104.6	24	105.4	105.8	106.2	24
5/3	123.2	123.6	123.9	24	117.9	118.7	119.5	24	107.7	107.9	108.1	24	103.8	104.1	104.6	24	105.0	105.3	105.7	24
5/4	122.3	122.7	123.3	24	115.4	116.1	116.5	24	101.0	102.1	107.3	24	101.2	101.6	103.3	24	104.0	104.2	104.4	24
5/5	121.4	122.0	122.8	24	115.9	117.0	117.6	24	98.3	98.5	99.6	24	100.9	101.5	101.8	23	104.2	104.8	105.4	24
5/6	121.0	121.9	122.6	24	116.2	117.0	117.7	24	97.5	97.9	98.2	24	101.7	102.7	103.5	24	104.5	105.1	105.8	24
5/7	121.9	122.4	122.8	24	117.7	119.3	120.0	24	97.7	98.3	98.6	24	101.4	102.2	102.8	22	104.5	105.3	105.9	24
5/8	122.4	122.9	123.2	24	118.5	119.6	120.3	24	99.1	99.7	100.0	24	101.8	102.7	103.3	24	104.3	105.0	105.5	24
5/9	121.1	121.6	122.1	24	117.0	117.9	119.0	24	100.6	101.7	104.4	24	101.8	102.5	103.2	24	103.7	104.2	104.7	24
5/10	121.5	122.0	122.5	24	114.3	116.7	117.4	24	98.5	98.7	98.9	24	101.0	101.9	102.6	24	103.6	104.4	105.2	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>	
4/27	103.3	103.3	103.6	13	102.8	103.2	104.1	24	128.7	130.6	132.0	24	112.9	113.6	115.4	24	124.0	126.2	127.1	24
4/28	103.0	103.5	103.8	24	104.4	105.5	106.0	24	127.4	128.8	129.5	24	115.8	118.1	119.4	24	122.3	123.8	124.4	24
4/29	103.5	104.4	105.2	24	107.0	107.7	108.1	24	121.9	122.7	125.3	24	120.7	121.4	121.6	24	118.8	119.9	120.9	24
4/30	103.2	103.6	103.9	24	107.7	107.9	108.0	24	118.1	118.5	119.1	24	119.1	120.4	121.2	24	118.2	119.4	120.5	24
5/1	102.2	102.9	103.3	24	105.2	105.7	106.8	24	118.5	119.0	120.2	24	112.7	113.9	115.4	24	116.8	117.7	119.1	24
5/2	102.7	103.5	104.1	24	103.6	104.1	104.6	24	116.5	117.2	118.2	24	109.4	109.8	110.1	24	116.2	117.0	118.9	24
5/3	102.4	102.7	103.3	24	104.9	105.0	105.1	24	113.5	115.4	115.9	24	111.0	111.2	111.4	24	115.6	116.0	116.1	24
5/4	101.0	101.4	101.6	24	104.0	104.5	104.9	24	116.6	117.8	118.0	24	108.4	109.2	110.0	24	117.3	118.4	118.8	24
5/5	100.5	101.2	101.8	23	102.3	102.6	103.0	24	117.2	117.9	118.1	24	105.1	105.6	106.6	24	114.9	116.8	118.3	24
5/6	101.5	102.9	103.9	23	102.2	102.5	102.9	24	110.7	111.8	117.2	24	106.2	107.7	108.9	24	112.9	113.2	113.7	24
5/7	101.8	102.9	103.8	22	103.8	104.5	104.7	24	110.5	111.3	117.0	24	110.9	112.5	113.5	24	114.8	115.4	116.3	24
5/8	102.1	103.2	104.2	22	105.7	106.3	106.6	24	113.1	115.9	118.5	24	114.5	115.1	116.1	24	115.0	115.7	118.5	24
5/9	101.5	102.6	103.9	24	105.4	105.7	106.0	24	117.1	118.2	118.4	24	111.3	112.1	113.7	24	116.1	118.2	118.8	24
5/10	100.7	101.8	102.6	23	103.2	103.5	104.1	24	112.5	114.1	118.0	24	109.0	109.4	110.3	24	113.4	114.1	116.2	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>	
4/27	117.9	118.5	119.0	24	125.1	126.2	127.2	24	116.4	117.0	117.8	24	126.1	127.9	128.5	24	---	---	---	0
4/28	122.8	124.1	124.7	24	122.8	123.4	124.9	24	119.7	120.8	121.0	24	125.4	126.1	128.5	24	---	---	---	0
4/29	123.4	124.1	124.7	24	119.6	121.2	121.6	24	121.7	121.9	122.1	24	121.9	122.6	123.1	24	---	---	---	0
4/30	121.8	123.2	124.0	24	117.2	119.9	121.3	24	120.5	121.6	122.0	24	119.5	120.3	121.9	24	---	---	---	0
5/1	116.7	117.4	118.5	24	119.2	120.5	120.7	24	115.3	115.9	117.3	24	119.3	119.8	120.3	24	---	---	---	0
5/2	116.3	116.8	117.4	24	117.0	119.3	120.5	24	114.5	114.8	115.3	24	119.5	119.8	120.4	24	---	---	---	0
5/3	116.2	116.6	117.0	24	116.4	118.7	120.3	24	116.0	116.5	116.8	24	118.9	119.2	119.5	24	---	---	---	0
5/4	113.6	113.9	114.7	24	117.8	119.2	119.6	24	113.4	113.7	114.3	24	118.3	118.9	120.2	24	---	---	---	0
5/5	112.6	113.2	114.0	24	114.8	116.8	118.8	24	111.9	112.2	112.6	24	116.9	117.9	118.3	24	---	---	---	0
5/6	115.0	115.5	116.0	24	112.5	112.9	113.3	24	113.1	113.4	113.7	24	116.5	117.1	118.1	24	---	---	---	0
5/7	114.3	114.6	115.2	24	116.7	120.6	121.9	24	114.5	115.1	116.1	24	117.2	118.0	119.2	24	---	---	---	0
5/8	115.4	116.3	116.6	24	120.8	121.8	122.1	24	116.1	116.5	116.8	24	117.4	118.6	119.2	24	---	---	---	0
5/9	116.5	116.7	117.0	24	118.1	119.4	119.9	24	116.7	116.9	117.2	23	117.5	118.3	121.4	24	---	---	---	0
5/10	114.5	115.0	115.4	24	118.9	119.2	119.5	24	115.5	115.8	116.3	24	116.1	116.4	116.7	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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24h</u>	<u>12h</u>	<u>High</u>		<u>24h</u>	<u>12h</u>	<u>High</u>		<u>24h</u>	<u>12h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>AVG</u>	<u>High</u>	
4/27	111.7	112.4	113.6	24	122.2	122.8	123.1	24	113.0	113.3	113.9	24	120.6	121.4	122.4	24	113.1	113.5	113.9	24
4/28	113.5	115.7	117.3	24	121.5	122.4	123.1	24	114.1	114.3	114.5	24	121.5	122.1	122.4	24	115.2	116.1	116.8	24
4/29	118.5	119.5	120.2	24	120.7	121.1	121.2	24	113.2	113.7	114.4	24	120.2	120.4	120.6	24	114.3	115.1	115.4	24
4/30	117.0	118.8	119.8	24	121.0	121.4	122.4	24	115.6	116.0	116.2	24	119.8	120.3	120.8	24	114.4	114.8	114.9	24
5/1	111.2	111.8	113.1	24	121.4	122.0	122.5	24	114.7	115.0	115.5	24	121.8	122.4	123.9	24	114.4	116.1	117.1	24
5/2	110.8	112.1	113.4	24	122.0	122.2	122.3	24	112.5	112.9	113.7	24	122.2	122.5	123.0	24	115.3	116.0	116.5	24
5/3	114.8	115.7	116.4	24	122.3	122.4	122.6	24	111.1	111.4	111.8	24	122.4	123.0	123.4	24	115.2	115.8	116.4	24
5/4	114.0	114.5	114.7	24	121.5	121.9	122.0	24	110.1	110.2	110.3	24	121.1	121.7	122.3	24	112.5	112.7	113.1	24
5/5	111.5	112.1	112.6	24	120.6	121.6	121.8	24	110.9	111.2	111.4	24	120.7	121.8	122.0	24	111.8	112.3	113.0	24
5/6	113.6	114.9	116.3	24	119.2	119.5	119.9	24	111.1	111.5	112.1	24	120.0	120.5	122.0	24	114.2	115.1	115.2	24
5/7	116.6	117.5	118.1	24	119.1	119.3	119.4	24	112.9	113.8	114.5	24	119.5	119.8	120.0	24	114.6	115.4	115.9	24
5/8	118.1	119.2	120.0	24	119.0	119.6	120.2	24	116.8	118.1	118.5	24	118.8	119.2	119.7	24	115.8	116.2	116.4	24
5/9	117.5	118.4	119.1	24	119.7	119.9	120.2	24	116.6	117.3	118.0	24	118.6	118.7	119.1	24	113.7	114.3	115.8	24
5/10	114.6	114.9	115.2	24	118.6	119.5	120.3	24	114.0	114.4	114.7	24	118.6	118.8	119.1	24	113.6	114.9	115.6	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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24h</u>	<u>12h</u>	<u>High</u>		<u>24h</u>	<u>12h</u>	<u>High</u>		<u>24h</u>	<u>12h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
4/27	117.3	118.4	119.0	24	116.4	117.6	118.9	24	121.6	122.0	123.0	24	120.7	121.2	121.6	24	---	---	---	0
4/28	119.0	119.8	120.7	24	117.5	118.5	118.8	24	122.8	123.4	123.8	24	121.5	122.5	122.8	24	---	---	---	0
4/29	118.0	118.7	120.4	24	119.2	119.5	119.9	24	123.3	123.5	123.8	24	123.3	124.0	124.4	24	---	---	---	0
4/30	120.8	121.3	121.7	24	116.7	117.3	118.3	24	119.9	121.4	122.3	24	119.8	121.3	123.0	24	---	---	---	0
5/1	120.6	121.6	122.4	24	115.9	117.5	118.6	24	117.6	118.6	120.0	24	116.1	116.7	117.2	24	---	---	---	0
5/2	121.3	122.4	123.2	24	119.7	121.3	122.0	24	121.5	122.4	123.4	24	119.5	121.0	121.5	24	---	---	---	0
5/3	121.2	122.5	123.3	24	121.4	122.1	122.2	24	122.7	123.4	124.2	24	119.8	121.3	121.8	24	---	---	---	0
5/4	118.4	118.9	119.5	24	117.5	118.3	118.8	24	120.9	121.7	122.0	24	119.1	119.5	119.8	24	---	---	---	0
5/5	118.1	118.6	119.2	24	115.0	115.4	116.1	24	118.1	118.7	119.3	24	117.5	117.9	118.1	24	---	---	---	0
5/6	119.0	119.4	120.3	24	117.5	118.8	120.2	24	120.1	120.7	121.3	24	118.3	119.7	120.2	24	---	---	---	0
5/7	120.0	122.1	122.6	24	119.7	119.9	120.1	24	120.8	121.0	121.1	24	119.5	120.1	120.6	24	---	---	---	0
5/8	118.3	119.0	122.2	24	120.4	121.5	122.1	24	120.4	121.0	121.5	24	119.3	119.9	120.6	24	---	---	---	0
5/9	121.3	121.9	122.7	24	113.8	115.1	119.0	24	116.0	117.1	119.6	24	115.9	116.8	117.6	24	---	---	---	0
5/10	119.5	120.7	122.4	24	116.4	117.6	118.5	24	117.4	118.1	118.4	24	114.5	116.9	118.0	24	---	---	---	0

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)	
04/27/2012	*	---	---	---	---	283,243	---	302	500	60,719	66,862	28,094
04/28/2012	*	---	---	---	---	273,901	---	359	632	---	137,447	22,265
04/29/2012	*	---	27	---	---	167,585	---	525	479	119,079	116,206	24,107
04/30/2012	*	---	26	---	---	136,456	371,390	897	491	---	157,423	34,236
05/01/2012	*	---	18	---	---	48,466	---	1,133	607	184,870	223,392	45,317
05/02/2012	*	---	22	---	---	67,421	---	2,076	433	---	228,031	31,953
05/03/2012	*	---	25	104	457	69,706	---	903	1,204	181,461	188,654	28,052
05/04/2012	*	---	14	169	365	57,092	166,780	1,153	850	---	231,060	38,562
05/05/2012	*	54	28	79	320	113,213	148,849	45,220	824	155,085	269,132	27,243
05/06/2012	*	43	29	112	305	47,364	121,200	96,972	978	---	223,087	41,071
05/07/2012	*	34	50	43	161	31,925	120,097	57,230	856	180,832	138,951	68,283
05/08/2012	*	25	27	46	156	37,923	112,643	50,136	1,027	---	167,336	66,807
05/09/2012	*	19	---	95	86	37,798	82,784	34,199	1,038	123,134	183,351	109,478
05/10/2012	*	20	---	445	62	54,458	---	38,097	1,049	---	163,049	131,269
05/11/2012		---	---	---	---	---	---	---	---	---	---	---
Total:		195	266	1,093	1,912	1,426,551	1,123,743	329,202	10,968	1,005,180	2,493,981	696,737
# Days:		6	10	8	8	14	7	14	14	7	14	14
Average:		33	27	137	239	101,897	160,535	23,514	783	143,597	178,142	49,767
YTD		58,000	10,280	24,486	9,026	3,273,995	1,358,848	330,879	16,015	1,125,600	2,864,985	1,038,157

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)	
04/27/2012	*	---	---	---	---	367	---	0	14	8,796	0	797
04/28/2012	*	---	---	---	---	1,221	---	0	26	---	0	3,209
04/29/2012	*	---	0	---	---	725	---	0	16	9,143	230	1,172
04/30/2012	*	---	0	---	---	6,680	0	1	11	---	0	759
05/01/2012	*	---	0	---	---	1,478	---	0	17	7,677	702	359,100
05/02/2012	*	---	0	---	---	1,209	---	0	10	---	513	100,995
05/03/2012	*	---	0	0	0	551	---	0	6	29,854	502	8,716
05/04/2012	*	---	0	0	1	546	608	0	2	---	980	3,907
05/05/2012	*	0	0	1	2	1,636	0	0	10	20,710	725	1,486
05/06/2012	*	0	0	1	0	0	601	0	4	---	501	4,033
05/07/2012	*	0	0	0	3	262	0	0	11	14,747	953	990
05/08/2012	*	0	0	2	1	0	0	0	11	---	1,885	1,339
05/09/2012	*	0	---	2	2	630	0	0	4	3,808	1,428	1,506
05/10/2012	*	0	---	0	1	0	---	0	7	---	1,216	384
05/11/2012		---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	6	10	15,305	1,209	1	149	94,735	9,635	488,393
# Days:		6	10	8	8	14	7	14	14	7	14	14
Average:		0	0	1	1	1,093	173	0	11	13,534	688	34,885
YTD		0	2	37	17	23,757	1,334	10	293	99,626	9,987	2,276,297

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)
04/27/2012	*	---	---	---	---	2,568	---	0	36	1,552	923	8,169
04/28/2012	*	---	---	---	---	3,256	---	0	49	---	1,370	4,613
04/29/2012	*	---	0	---	---	2,176	---	0	34	2,899	1,378	4,610
04/30/2012	*	---	0	---	---	2,545	2,346	0	45	---	2,316	4,647
05/01/2012	*	---	0	---	---	1,182	---	1	61	1,806	3,038	7,830
05/02/2012	*	---	0	---	---	302	---	5	98	---	3,843	5,136
05/03/2012	*	---	0	0	0	1,653	---	8	248	1,866	3,508	4,966
05/04/2012	*	---	0	0	1	273	2,432	13	360	---	2,697	5,946
05/05/2012	*	0	0	0	3	654	6,143	248	523	4,502	5,310	5,118
05/06/2012	*	0	0	0	6	973	1,503	685	644	---	6,509	5,882
05/07/2012	*	0	0	0	2	523	1,444	405	734	2,867	5,721	5,773
05/08/2012	*	0	0	0	4	0	583	522	1,178	---	6,456	9,076
05/09/2012	*	0	---	0	0	315	673	411	1,423	4,231	3,095	17,489
05/10/2012	*	0	---	0	0	532	---	843	1,611	---	3,163	13,818
05/11/2012	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	16	16,952	15,124	3,141	7,044	19,723	49,327	103,073
# Days:		6	10	8	8	14	7	14	14	7	14	14
Average:		0	0	0	2	1,211	2,161	224	503	2,818	3,523	7,362
YTD		0	0	0	53	20,090	15,124	3,141	7,480	21,946	52,142	180,771

		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)
04/27/2012	*	---	---	---	---	237,052	---	470	270	26,437	113,437	4,981
04/28/2012	*	---	---	---	---	188,434	---	585	369	---	126,945	2,006
04/29/2012	*	---	216	---	---	178,830	---	324	420	73,365	106,330	3,774
04/30/2012	*	---	161	---	---	164,447	195,978	714	544	---	153,255	4,457
05/01/2012	*	---	122	---	---	96,932	---	421	738	65,541	176,423	9,430
05/02/2012	*	---	207	---	---	67,421	---	986	582	---	168,076	13,696
05/03/2012	*	---	200	4	79	43,256	---	534	867	50,850	163,602	10,481
05/04/2012	*	---	194	16	38	34,160	34,724	655	575	---	154,530	11,891
05/05/2012	*	255	235	7	54	52,680	46,413	12,668	531	47,308	124,792	13,209
05/06/2012	*	279	226	6	90	45,093	45,993	31,923	568	---	131,198	1,781
05/07/2012	*	217	296	5	13	32,710	33,759	39,662	580	29,522	117,740	5,938
05/08/2012	*	164	318	6	47	35,006	31,232	26,933	747	---	80,452	9,820
05/09/2012	*	147	---	28	23	48,192	56,190	23,736	676	15,232	73,579	24,110
05/10/2012	*	109	---	65	96	45,411	---	24,263	768	---	53,539	18,039
05/11/2012	*	---	---	---	---	---	---	---	---	---	---	---
Total:		1,171	2,175	137	440	1,269,624	444,289	163,874	8,235	308,255	1,743,898	133,613
# Days:		6	10	8	8	14	7	14	14	7	14	14
Average:		195	218	17	55	90,687	63,470	11,705	588	44,036	124,564	9,544
YTD		2,550	6,071	1,454	1,651	2,684,194	714,921	165,220	8,923	423,874	2,335,222	157,750

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)	
04/27/2012	*	---	---	---	---	0	---	0	291	24,053	1,154	199
04/28/2012	*	---	---	---	---	0	---	0	430	---	5,707	201
04/29/2012	*	---	0	---	---	0	---	0	1,034	49,063	9,417	0
04/30/2012	*	---	0	---	---	636	586	0	475	---	15,048	1,043
05/01/2012	*	---	0	---	---	0	---	0	328	51,932	22,200	1,972
05/02/2012	*	---	0	---	---	302	---	0	397	---	36,383	571
05/03/2012	*	---	0	0	23	551	---	1	452	59,242	34,325	2,842
05/04/2012	*	---	0	0	36	0	0	1	678	---	54,944	7,135
05/05/2012	*	3	0	0	33	1,636	0	3	811	51,787	45,137	9,081
05/06/2012	*	2	0	0	21	324	2	698	2,399	---	53,580	3,697
05/07/2012	*	0	0	0	12	262	1,154	473	4,408	117,158	36,228	14,349
05/08/2012	*	0	0	0	7	265	583	522	7,009	---	26,865	31,692
05/09/2012	*	0	---	0	5	945	336	247	3,603	122,720	29,526	51,186
05/10/2012	*	0	---	0	2	710	---	211	1,788	---	51,105	30,704
05/11/2012		---	---	---	---	---	---	---	---	---	---	---
Total:		5	0	0	139	5,631	2,661	2,156	24,103	475,955	421,619	154,672
# Days:		6	10	8	8	14	7	14	14	7	14	14
Average:		1	0	0	17	402	380	154	1,722	67,994	30,116	11,048
YTD		5	0	0	139	7,096	3,103	2,173	26,624	480,966	423,893	155,396

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)	
04/27/2012	*	---	---	---	---	800	---	0	2	1,500	5,715	100
04/28/2012	*	---	---	---	---	1,000	---	0	1	---	4,000	100
04/29/2012	*	---	0	---	---	1,600	---	18	5	1,700	3,857	324
04/30/2012	*	---	0	---	---	0	801	15	7	---	5,143	25
05/01/2012	*	---	0	---	---	0	---	2	2	6,000	9,572	50
05/02/2012	*	---	0	---	---	0	---	6	1	---	6,857	143
05/03/2012	*	---	0	0	0	0	---	0	0	24,600	2,429	143
05/04/2012	*	---	0	0	0	0	1,600	1	1	---	7,571	300
05/05/2012	*	0	0	0	0	0	400	0	0	7,800	8,571	50
05/06/2012	*	0	0	0	0	0	0	5	0	---	10,429	180
05/07/2012	*	0	0	0	0	0	0	0	0	5,000	7,429	0
05/08/2012	*	0	0	0	0	0	0	0	1	---	4,986	100
05/09/2012	*	0	---	0	0	0	0	0	1	4,600	4,143	214
05/10/2012	*	0	---	0	0	0	---	0	0	---	5,429	286
05/11/2012		---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	3,400	2,801	47	21	51,200	86,131	2,015
# Days:		6	10	8	8	14	7	14	14	7	14	14
Average:		0	0	0	0	243	400	3	2	7,314	6,152	144
YTD		6	0	0	0	6,115	3,341	53	79	53,330	196,021	23,794

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.

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

5/11/12 10:54 AM

04/27/12 TO 05/11/12

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	9,600	843,199	10,100	758,101	3,600	1,624,600
	Sum of NumberBarged	3,721	351,436	3,766	278,801	3,228	640,952
	Sum of NumberBypassed	5,875	491,047	6,330	479,210	364	982,826
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	34	0	11	0	46
	Sum of FacilityMorts	3	658	4	70	8	743
	Sum of ResearchMorts	0	24	0	9	0	33
	Sum of TotalProjectMorts	4	716	4	90	8	822
LGS	Sum of NumberCollected	800	740,600	9,601	292,530	1,801	1,045,332
	Sum of NumberBarged	798	487,016	7,999	158,861	1,399	656,073
	Sum of NumberBypassed	2	253,250	1,601	133,650	400	388,903
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	6	0	1	0	7
	Sum of FacilityMorts	0	328	1	18	2	349
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	334	1	19	2	356
LMN	Sum of NumberCollected	1	229,384	2,184	113,925	1,524	347,018
	Sum of NumberBarged	0	222,373	2,164	109,103	1,519	335,159
	Sum of NumberBypassed	1	6,761	19	4,791	2	11,574
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	22	0	16	1	39
	Sum of FacilityMorts	0	228	1	14	2	245
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	250	1	30	3	284
MCN	Sum of NumberCollected	41,901	451,942	8,900	136,581	217,916	857,240
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	41,894	451,908	8,900	136,574	217,881	857,157
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	7	8	0	3	12	30
	Sum of FacilityMorts	0	26	0	4	23	53
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	7	34	0	7	35	83
Total Sum of NumberCollected		52,302	2,265,125	30,785	1,301,137	224,841	3,874,190
Total Sum of NumberBarged		4,519	1,060,825	13,929	546,765	6,146	1,632,184
Total Sum of NumberBypassed		47,772	1,202,966	16,850	754,225	218,647	2,240,460
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		8	70	0	31	13	122
Total Sum of FacilityMorts		3	1,240	6	106	35	1,390
Total Sum of ResearchMorts		0	24	0	9	0	33
Total Sum of TotalProjectMorts		11	1,334	6	146	48	1,545

YTD Transportation Summary

Source: Fish Passage Center

Updated:

5/11/12 10:54 AM

TO: 05/11/12

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	15,180	2,120,841	12,035	4,695	1,723,809	3,876,560
	Sum of NumberBarged	3,874	423,605	3,866	3,262	339,034	773,641
	Sum of NumberBypassed	11,302	1,696,132	8,163	1,421	1,384,655	3,101,673
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	145	1	2	33	182
	Sum of FacilityMorts	3	925	5	10	76	1,019
	Sum of ResearchMorts	0	34	0	0	11	45
	Sum of TotalProjectMorts	4	1,104	6	12	120	1,246
LGS	Sum of NumberCollected	892	875,680	9,601	2,094	446,404	1,334,671
	Sum of NumberBarged	798	487,016	7,999	1,399	158,861	656,073
	Sum of NumberBypassed	92	388,249	1,601	689	287,507	678,138
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	17	0	1	3	21
	Sum of FacilityMorts	2	398	1	5	33	439
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2	415	1	6	36	460
LMN	Sum of NumberCollected	8	230,474	2,184	1,536	114,838	349,040
	Sum of NumberBarged	0	222,373	2,164	1,519	109,103	335,159
	Sum of NumberBypassed	8	7,839	19	13	5,704	13,583
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	34	0	2	16	52
	Sum of FacilityMorts	0	228	1	2	14	245
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	262	1	4	30	297
MCN	Sum of NumberCollected	44,021	505,609	9,900	220,016	188,718	968,264
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	44,012	505,551	9,900	219,980	188,705	968,148
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	9	21	0	13	8	51
	Sum of FacilityMorts	0	37	0	23	5	65
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	9	58	0	36	13	116
Total Sum of NumberCollected		60,101	3,732,604	33,720	228,341	2,473,769	6,528,535
Total Sum of NumberBarged		4,672	1,132,994	14,029	6,180	606,998	1,764,873
Total Sum of NumberBypassed		55,414	2,597,771	19,683	222,103	1,866,571	4,761,542
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		10	217	1	18	60	306
Total Sum of FacilityMorts		5	1,588	7	40	128	1,768
Total Sum of ResearchMorts		0	34	0	0	11	45
Total Sum of TotalProjectMorts		15	1,839	8	58	199	2,119

Cumulative Adult Passage at Mainstem Dams Through: 05/11

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	05/10	89049	2045	125545	12649	113835	6375	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/10	36532	1199	78496	5561	73701	3698	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/10	21154	912	56521	4029	57624	2782	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/10	10467	253	38305	1760	45692	1668	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/10	5768	121	24179	821	29333	866	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/10	4278	117	15939	372	23288	522	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/10	2321	88	10609	383	18048	369	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/10	1546	70	6178	143	16005	278	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/08	416	3	922	2	5385	5	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/09	139	1	288	8	3181	38	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/09	23	0	36	0	743	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/09	4	1	3	0	260	4	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/08	2467	45	9258	145	18920	198	-	-	-	-	-	-	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	6	0	2964	2758	2937	894	1033	853
TDA	0	0	0	0	0	0	0	0	0	675	1248	1271	357	711	563
JDA	0	0	0	0	0	0	0	0	0	1732	2600	2571	1181	1687	1253
MCN	-1	0	0	0	0	0	0	0	0	1616	2470	2103	961	1542	958
IHR	0	0	0	0	0	0	0	0	0	2224	2925	2594	1040	1154	937
LMN	0	0	0	0	0	0	0	0	0	3455	3678	3024	1850	2073	1422
LGS	0	0	0	0	0	0	0	0	0	3740	5982	3223	2180	3170	1437
LGR	0	0	0	0	0	0	0	0	0	8699	12021	9861	3762	3850	3062
PRD	0	0	0	0	0	0	0	0	0	75	25	15	0	0	0
RIS	0	0	0	0	0	0	0	0	0	121	54	56	83	36	34
RRH	0	0	0	0	0	0	0	0	0	605	387	228	510	346	161
WEL	0	0	0	0	0	0	0	0	0	57	36	27	43	95	17
WFA	0	0	0	0	0	0	0	-	-	8902	9244	11373	-	-	-

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: 05/11/12

BON counts from January 1, 2012 to March 14, 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

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											
	05/03/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/10/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	04/29/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/04/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/07/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Lower Monumental Dam											
	05/02/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/09/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	04/30/12	Chinook + Steelhead	100	4	4	4.00%	0.00%	3	1	0	0
	05/04/12	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	05/06/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/10/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam											
	04/28/12	Chinook + Steelhead	98	1	1	1.02%	0.00%	1	0	0	0
	05/05/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/08/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	05/01/12	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/02/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/08/12	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	05/10/12	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0