



Fish Passage Center

Weekly Report #10 - 07

April 30, 2010

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 80% and 136% of average at individual sub-basins over April. Precipitation above The Dalles has been 108% of average over April. Over the 2010 water year, precipitation has ranged between 71% and 87% of average.

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

Location	Water Year 2010 April 1-26		Water Year 2010 October 1, 2009 to April 26, 2010	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.26	88	12.11	77
SNAKE RIVER ABOVE ICE HARBOR	1.57	124	9.69	84
Columbia Above The Dalles	1.54	108	12.88	82
Kootenai	1.21	80	12.88	80
Clark Fork	1.00	93	7.19	71
Flathead	1.41	103	10.87	80
Pend Oreille/Spokane	1.64	84	16.66	75
Central Washington	0.74	133	5.62	87
SNAKE RIVER PLAIN	1.22	136	6.01	86
Salmon/Boise/Payette	1.49	107	12.02	85
Clearwater	2.06	89	16.04	77
SW Washington Cascades/Cowlitz	4.49	97	18.53	84
Willamette Valley	5.18	123	42.25	85

Snowpack within the Columbia Basin has been

below average. Average snowpack in the Columbia River for basins above the Snake River confluence is 70% of average, for Snake River Basins the average snowpack is 63% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 69% of average.

Table 2 displays the April Final and May Early runoff volume forecasts for multiple reservoirs. The current forecast at The Dalles between January and July is 68600 Kaf (64% of average).

Table 2. April Final and May Early Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Location	April Final		May Early	
	% Average (1971 -2000)	Probable Runoff Volume (Kaf)	% Average (1971 -2000)	Probable Runoff Volume (Kaf)
The Dalles (Jan-July)	65	69700	64	68600
Grand Coulee (Jan-July)	73	46000	72	45100
Libby Res. Inflow, MT (Apr-Aug)	68 81*	4270 5103*	67	4180
Hungry Horse Res. Inflow, MT (Jan-July)	69	1540	67	1490
Lower Granite Res. Inflow (Apr- July)	56	12000	55	11900
Brownlee Res. Inflow (Apr-July)	41	2590	42	2650
Dworshak Res. Inflow (Apr-July)	50 52*	1330 1398*	50	1330

* Denotes COE Forecast

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast, the flow objective this spring is 85 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 41.4 Kcfs from April 3-29 and 61.7 Kcfs last week.

The Biological Opinion flow period began on April 10th in the mid and lower Columbia River (Priest Rapids and McNary Dams). According to the April Final Water Supply Forecast, the flow objective this spring is 220 Kcfs at McNary and 135 Kcfs at Priest Rapids. Flows from April 10-29 have averaged 132.1 Kcfs at McNary Dam and 81.5 Kcfs at Priest Rapids Dam. Over the last week, flows have averaged 171.6 Kcfs at McNary Dam and 105.2 Kcfs at Priest Rapids Dam. Outflows from Grand Coulee have been increased in attempt to achieve flows of 100 Kcfs at Priest Rapids Dam.

Grand Coulee Reservoir is at 1269.5 feet (4-29-10) and drafted 0.3 feet over the last week. Outflows at Grand Coulee have ranged between 64.4 and 101.6 Kcfs over the last week. The end of April FC elevation at Grand Coulee is 1283.3 feet.

The Libby Reservoir is currently at elevation 2406.9 feet (4-29-10) and has refilled 0.8 feet last week. Outflows at Libby are currently 4.0 Kcfs. The end of April FC Elevation at Libby is 2447.5 feet. At the 4-28-10 TMT Meeting, a decision was made to reduce future VARQ outflows in early may to provide a higher reservoir elevation at Libby Dam in Late May/Early June. The higher reservoir elevation at Libby Dam will provide an increased likelihood that a spill test can be conducted this year for sturgeon operations. Outflows from Libby will be increased later in the spring period in effort to have no impact on the spring volume of flow augmentation from Libby Dam.

Hungry Horse is currently at an elevation of 3528.9 feet (4-29-10) and has refilled 3.9 feet last week. Outflows at Hungry Horse have been approximately 0.7 Kcfs last week. The end of April FC Elevation at Hungry Horse is 3555.1 feet.

Dworshak is currently at an elevation of 1546.9 feet (4-29-10) and has refilled approximately 6.6 feet last week. Over the last week outflows at Dworshak were 1.2 Kcfs. The end of April System FC Elevation at Dworshak is 1597.4 feet.

The Brownlee Reservoir was at an elevation of 2072.9 feet on April 29, 2010 refilling 4.8 feet last week. The end of April FC Elevation at Brownlee is 2077 feet.

Over the last week, outflows at Brownlee have ranged between 11.5-17.1 Kcfs.

Spill:

The 2010 planned spring spill program at the lower Snake River Projects began on April 3 at 0001 hours. The following table shows the planned operations for spring 2010.

Project	Day/Night Spill
Lower Granite	20Kcfs/20Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	April 3-April 28: 45 kcfs/Gas Cap April 29-June 20: 30%/30% vs. 45 kcfs/ Gas Cap

Flows have decreased over the past week in the Snake River and, while the planned spill levels were mostly achieved, there were some exceptions. Spill at Lower Granite Dam met the 20 Kcfs instantaneous level. Spill at Little Goose Dam achieved the 30% of instantaneous flow and has ranged from a daily average of 15.4 to 22.3 Kcfs. Spill to the gas cap at Lower Monumental Dam was limited based on the TDG at the downstream forebay monitor at Ice Harbor Dam until April 23rd, when it was increased to near 27 Kcfs. Spill was again reduced on April 27th based on the forebay TDG reading at Ice Harbor Dam and returned to 27 Kcfs on April 29th. Daily average spill at this project varied between 23.9 and 26.9 Kcfs over the past week. Spill at Ice Harbor Dam occurred as 45 Kcfs during daytime hours, and all flow in excess of that required to operate one turbine unit during nighttime hours, except during some hours on April 26 and 27 when spill was less than 45 Kcfs due to low flows and powerhouse minimums. The Ice Harbor simulated test of 30% spill versus 45 Kcfs during daytime hours and gas cap spill during nighttime hours began on April 29. Gas cap spill during nighttime hours is presently not achievable due to low flows.

The 2010 spill program at the lower Columbia River projects began at 0001 hours on April 10th. The following table shows the planned operations for spring 2010.

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

The planned spill levels have been met at McNary, John Day and The Dalles dams, since spill is provided as a percentage of total flow. Spill at Bonneville Dam also met the planned spill levels this past week.

At present, GBT monitoring is being implemented at Lower Granite, Little Goose, Lower Monumental, McNary, Bonneville and Rock Island dams. One fish was reported at Lower Monumental Dam with Rank 1 signs of fin GBT this past week.

All total dissolved gas levels have been below the waiver amounts over the past week at the monitoring sites, with the exception of one day at the Ice Harbor Dam forebay and one day at the Bonneville Dam forebay.

Smolt Monitoring:

Juvenile salmon collections at most dams have increased rapidly over the past week as the spring migration finally appears to be underway. Collections at Lower Granite Dam have remained high over the past eight days coinciding with a modest increase in flows out of the Snake River tributaries that reached Lower Granite April 22. At Bonneville Dam and Rock Island Dam smolt collections have been near normal for the past few weeks. At the SMP traps large numbers of smolts have been collected over the last few weeks of sampling as tributary hatchery populations emigrate toward the hydro-system.

At the Salmon River Trap, located at River km 103, and operated by Idaho Department of Fish and Game, sampling began on March 7. Over the past week collections of yearling Chinook have declined while steelhead catch has increased. This pattern of increased steelhead collection is typical of historic patterns of timing for the Salmon River Trap, and reflects the hatchery release timing of the two species. More than 90 percent of the Chinook collected at the trap were clipped—indicating hatchery origin. PIT-tag detections indicate the releases from Sawtooth, McCall

and Rapid River hatcheries were passing the trap this past week. Steelhead collections continued to increase this week with over 200 in the sample on April 29; most of the steelhead were fin clipped as well. PIT-tag detections show steelhead from Magic Valley Hatchery releases into the Pahsimeroi River as well as Hagerman Hatchery releases. Flows in the Salmon River at White Bird have decreased steadily over the past week. But flows continued to exceed historic median flows for the past week. Flows are projected to drop further over the next several days.

The Grande Ronde Trap, operated by the Oregon Department of Fish and Wildlife, located at river mile two in the Grande Ronde River, began sampling March 7. Over the past week the yearling Chinook collections have decreased, with a seasonal high collection for the year of 3,574 on April 22. Hatchery origin yearling Chinook continued to predominate in the catch over the past week, with more than 70% either adipose clipped or coded wire tagged. Flows in the Grande Ronde River have also decreased over the past week, with flows dropping below historic median values on April 24, when flows were near 6200 cfs. Similar to the Salmon River, flows are projected to drop further over the next several days.

The Imnaha River Trap, operated by the Nez Perce Tribe, provides data to the SMP, on their fish collection. The trap has been operating since mid-February. The Imnaha Trap has been collecting relatively large numbers of yearling Chinook and steelhead over the past two weeks. Steelhead collections exceeded yearling Chinook the past few days of sampling—which is typical for that site at this time of year. Based on past years, yearling Chinook collections have dropped to near zero by April 25; at the same time steelhead collections typically climb above 200 fish per day through most of May. Flows in the Imnaha have remained at or above historic median for this time of year and the trap has been collecting large amounts of debris as well as fish.

Collections at the Lewiston Trap, operated by IDFG, increased substantially on April 22, when over 1,200 yearling Chinook were sampled and over 1,000 steelhead were collected April 23. Since the trap fishes best at higher flows, it is not surprising that catch has increased with the increase in flows. Flows tapered off over the past week and so has collection at the trap. Snake River flows measured at Anatone Gage, were fluctuating between 40 and 50 kcfs over the past week and were forecast to recede over the next week.

Collections at Lower Granite Dam have increased rapidly over the past week. Passage indices averaged over 100,000 yearling Chinook per day last compared to under 10,000 fish per day the previous week. Steelhead passage indices also jumped up to over 70,000 per day last week, compared to 3,000 per day the previous week. Based on PIT-tag detections most of the yearling spring Chinook were from the Clearwater basin releases; Dworshak and Clear Creek on the Selway River, being the largest sources of detected fish. Wild origin Chinook PIT-tags were marked in both Clearwater and Snake river tributaries. And a small number of holdover fall Chinook were also detected – fish released as subyearling fall Chinook in July of 2009. Steelhead PIT-tag detections were predominantly Dworshak released fish.

At Bonneville Dam the largest collections over the past week have been yearling Chinook. The average passage index was 28,000 per day for yearling Chinook followed by an average index of nearly 12,000 coho. Based on PIT-tags these fish appear to be a combination of releases from Little White Salmon, Carson, Warm Springs, and Klickitat Hatcheries.

At John Day Dam there have been some unusual smolt mortalities in the sample the past several days. The numbers of mortalities has been low, but the dead fish have come into the sample without heads. The COE has been flushing orifices and checking the bypass channel to determine the cause of these smolt decapitations. So far the cause remains unidentified.

At Rock Island Dam, unclipped sockeye and now yearling Chinook smolts predominated in the sample the past week. Increasing numbers of steelhead were captured over the past week. Sockeye collections peaked at over 800 fish on April 20.

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 summer steelhead that began last week were scheduled to end this week. In all, these releases totaled over 1.6 million steelhead juveniles and took place in tributaries of the Clearwater and Salmon rivers. In addition to these past releases, nearly 861,500 summer steelhead were scheduled for release this week. Of these, approximately 514,000 were reared at Irrigon Hatchery and were to be released into the Wallowa (65%) and Imnaha (35%) rivers. Nearly 338,000 of the summer steelhead planned for release this week

were scheduled for release into the Salmon (72%) and Pahsimeroi (28%) rivers. The remaining 9,500 were reared at Tucannon Hatchery and were to be released into the Tucannon River.

About 1.23 million subyearling fall Chinook are scheduled for release into the Snake River Zone in the next two weeks. Of these, 1.0 million are to be released directly into the Snake River, below Hells Canyon Dam. The remaining 230,000 subyearling fall Chinook are surrogates that will be released near Captain Johns Rapids from about May 11th to May 29th. These surrogates are 100% unclipped but are PIT-tagged. Beginning May 1st, approximately 179,000 sockeye smolts will be released into the Salmon River (63%) and Redfish Lake Creek (37%). These sockeye smolts are 100% unclipped but are tagged with coded-wire-tags. There are several releases of summer steelhead scheduled to begin over the next two weeks. In all, these releases are expected to total over 604,000 summer steelhead juveniles. All of these steelhead juveniles are scheduled for release above Lower Granite Dam into the Salmon (448,270) and Grande Ronde (156,000) rivers.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Several releases of yearling spring Chinook that began last week were scheduled to end this week. In all, these releases totaled about 541,000 juveniles and took place on tributaries of the Methow River. Two releases totaling 390,000 yearling summer Chinook that began last week were also scheduled to end this week. In addition, about 1.4 million summer Chinook were scheduled for release into this zone beginning this week. Approximately 202,000 of these were subyearling summer Chinook that were to be released into the Naches River, a tributary of the Yakima River. All of these subyearling summer Chinook are unclipped but about 85% are tagged with coded-wire-tags. The remaining 1.2 million were yearling summer Chinook that were to be released into the Wenatchee (950,000) and mid-Columbia (257,000) rivers.

Several volitional releases of coho to the Yakima, Methow, Wenatchee, and Mid-Columbia rivers that began in past weeks continued this week. A few more volitional releases of coho began this week. These volitional releases include over 350,000 coho being released into the Methow River and over 577,000 coho being released into the Wenatchee River. All of the volitional coho releases for this year are expected

to run through late May or early June and total nearly 2.5 million coho juveniles. Finally, several releases of summer steelhead that began in past weeks were scheduled to end this week. In all, these releases totaled about 150,000 juveniles and took place on the Methow and Touchet rivers.

Beginning on or around May 1st, about 150,000 yearling spring Chinook will be released into Lake Wenatchee. These spring Chinook juveniles are 100% unmarked. Approximately 484,000 subyearling summer Chinook are scheduled for release from Wells Hatchery into the mid-Columbia River on May 10th. Several Yakama Tribal releases of coho to the Wenatchee and Methow rivers are scheduled to begin in early May. In all, over 424,000 coho juveniles are scheduled to be released into the Wenatchee River over the next two weeks, while nearly 58,000 are scheduled for release into the Methow River. Finally, about 415,000 summer steelhead are scheduled for release into this zone over the next two weeks. All of these steelhead juveniles are scheduled for release directly into the Wenatchee River or its tributaries.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. About 150,000 yearling spring Chinook juveniles were scheduled for release into Hood River this week. These spring Chinook juveniles were to be released from various acclimation facilities on Hood River. Two releases of summer steelhead to the Umatilla River that began last week were scheduled to end this week. In all, these two releases totaled nearly 110,000 steelhead juveniles. A release of an additional 50,000 summer steelhead juveniles to the Umatilla was scheduled to begin this week. About 24,000 summer steelhead juveniles were scheduled for release into the White Salmon River this week. Approximately 20,000 winter steelhead were also scheduled for release into the White Salmon River this week. Finally, about 37,500 winter steelhead were scheduled for release into Hood River this week.

Beginning on or around May 7th, Spring Creek NFH will release about 4.6 million subyearling fall Chinook tules into the Lower Columbia River. On or around May 1st, approximately 90,000 steelhead juveniles will be released into the Klickitat River. There are no other releases of juveniles salmonids scheduled for this zone over the next two weeks.

Adult Fish Passage:

Adult counts at Bonneville Dam have been updated through April 30th. Daily adult spring Chinook

counts at Bonneville Dam ranged from 5773 to 9073 adult salmon per day. Between March 15th and April 28th, 119118 spring Chinook have been counted at Bonneville Dam. In 2009, 16941 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2010 adult spring Chinook count at Bonneville Dam is about 7 times greater than the 2009 count. The Bonneville spring Chinook adult count is about 1.38 times greater than the 10 year average of 86440. At Willamette Falls Dam 10941 adult spring Chinook have been counted so far this year. At The Dalles Dam the 2010 adult spring Chinook count is 73279 and at McNary Dam 41299 adult spring Chinook have been counted. The Dalles Dam 2010 adult spring Chinook count is about 11.9 times greater than the 2009 count of 6135 and is about 1.42 times greater than the 10 year average of 51530. The 2010 McNary Dam adult spring Chinook count is 39 times greater than the 2009 count of 1057 and 1.36 times greater than the 10 year average count of 30270.

The Bonneville Dam 2010 steelhead count of 3993 is about 1.9 times greater than the 2009 count of 2058. The 2010 steelhead count is about 1.8 times greater than the 10-year average of 2185. 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 70 to 137 adults per day last week. This year's Lower Granite steelhead count of 9778 is about 96.4% of the 2009 count of 10137 and 1.19 times greater than the 10 year average of 8217. The 2010 Lower Granite wild steelhead count as of April 28th was 3730. At Rock Island Dam, as of April 27th, 82 adult steelhead have been counted and at Rocky Reach Dam, 247 adult steelhead have been counted so far this season. At Willamette Falls Dam, the 2010 count for steelhead was 8693, as of April 25th. This year's steelhead count is about 2.63 times greater than the 2009 count of 3305 at Willamette Falls Dam for the same date range.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: 4/16/2010 **to** 04/29/10

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Colville Tribe	Ringold Springs Hatchery	CH1	SU	2010	190,000	04-10-10	04-30-10	Bonaparte Acclimation Pond	Okanogan River
Colville Tribe Total					190,000				
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2010	144,900	04-15-10	04-26-10	Clear Creek	Clearwater River M F
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2010	176,400	04-15-10	04-26-10	S Fk Clearwater River Redhouse (SFk	Clearwater River M F
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2010	186,600	04-15-10	04-26-10	ClearH20 R)	S Fk Clearwater River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2010	95,023	04-29-10	04-29-10	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2010	117,883	04-27-10	04-28-10	McNabb/Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2010	277,619	04-21-10	04-27-10	Squaw Cr Acclim Pond	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2010	306,949	04-16-10	04-21-10	East Fk Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2010	830,000	04-12-10	05-03-10	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2010	2,500,000	03-05-10	04-23-10	Rapid River Hatchery	Little Salmon River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2010	404,000	04-19-10	04-23-10	Yankee Fk (Salmon R)	Salmon River (ID)
Idaho Dept. of Fish and Game Total					5,039,374				
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2010	85,600	04-10-10	04-20-10	Crooked River	S Fk Clearwater River
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2010	103,700	04-13-10	04-17-10	Newsome Creek	S Fk Clearwater River
Nez Perce Tribe	Clearwater Hatchery	ST	SU	2010	153,500	04-10-10	04-20-10	Red River	S Fk Clearwater River
Nez Perce Tribe	Dworshak NFH	ST	SU	2010	60,000	04-19-10	04-19-10	Lolo Creek	Clearwater River M F
Nez Perce Tribe	Dworshak NFH	ST	SU	2010	150,000	04-19-10	04-19-10	S Fk Clearwater River	Clearwater River M F
Nez Perce Tribe Total					552,800				
Oregon Dept. of Fish and	Irrigon Hatchery Complex	ST	SU	2010	182,000	04-27-10	04-27-10	L Sheep Acclim Pond	Imnaha River
Oregon Dept. of Fish and	Irrigon Hatchery Complex	ST	SU	2010	332,000	04-29-10	04-29-10	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and	Round Butte Hatchery	CH1	SP	2010	212,760	04-13-10	06-01-10	Deschutes River	Deschutes River
Oregon Dept. of Fish and	Umatilla Hatchery	ST	SU	2010	50,000	04-27-10	04-27-10	Meacham Creek	Umatilla River
Oregon Dept. of Fish and Wildlife Total					776,760				
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2010	1,030,000	04-19-10	04-19-10	Dworshak Hatchery	Clearwater River M F
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2010	125,068	04-29-10	05-04-10	East Fk Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2010	833,919	04-13-10	04-28-10	Salmon River (ID)	Salmon River (ID)
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2010	1,250,000	04-22-10	04-22-10	Leavenworth Hatchery Warm Springs	Wenatchee River
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2010	705,754	03-24-10	04-21-10	Hatchery	Deschutes River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2010	29,000	04-20-10	04-30-10	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2010	71,000	04-20-10	04-30-10	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service Total					4,044,741				
Umatilla Tribe	Cascade Hatchery	CO	UN	2010	770,000	03-29-10	04-20-10	Pendelton Acclim Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	ST	SU	2010	54,750	04-20-10	04-27-10	Pendelton Acclim Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	ST	SU	2010	54,780	04-20-10	04-27-10	Minthorn Acclimation Pond	Umatilla River
Umatilla Tribe Total					879,530				
Warm Springs Tribe	Carson NFH	CH1	SP	2010	45,000	04-26-10	04-26-10	Blackberry Acclim Pond	Hood River
Warm Springs Tribe	Parkdale Acclim. Pond	CH1	SP	2010	30,000	04-26-10	04-26-10	Parkdale Acclim Pond	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2010	37,500	04-26-10	04-26-10	Blackberry Acclim Pond	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2010	37,500	04-26-10	04-26-10	Parkdale Acclim Pond	Hood River
Warm Springs Tribe Total					150,000				

Hatchery Releases Last Two Weeks (Continued)

Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2010	200,000	04-01-10	04-30-10	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2010	610,000	04-15-10	05-15-10	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2010	350,000	04-10-10	05-05-10	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2010	950,000	04-25-10	05-05-10	Dryden Acclim Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2010	50,000	04-12-10	04-26-10	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2010	60,000	04-15-10	04-20-10	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2010	100,000	04-15-10	04-20-10	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2010	100,000	04-15-10	04-20-10	Walla Walla River	Walla Walla River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2010	79,000	04-20-10	04-30-10	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2010	202,000	04-20-10	04-30-10	Twisp River	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2010	260,000	04-20-10	04-30-10	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2010	400,000	04-20-10	05-01-10	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2010	24,000	04-25-10	05-05-10	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2010	20,000	04-25-10	05-05-10	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2010	9,500	04-29-10	04-29-10	Tucannon Hatchery	Tucannon River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH1	SU	2010	257,000	04-25-10	05-05-10	Turtle Rock Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2010	50,000	04-10-10	05-15-10	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2010	335,000	04-15-10	06-01-10	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2010	105,000	04-20-10	05-05-10	Okanogan River	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2010	180,000	04-20-10	05-05-10	Methow River	Methow River
Washington Dept. of Fish and Wildlife Total					4,341,500				
Yakama Tribe	Cascade Hatchery	CO	UN	2010	219,746	04-24-10	04-30-10	Icicle Creek	Wenatchee River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2010	280,960	03-15-10	05-14-10	Clark Flat Acclim Pond Jack Creek Acclim	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2010	282,011	03-15-10	05-14-10	Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2010	288,342	03-15-10	05-14-10	Easton Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	15,846	04-07-10	06-01-10	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	37,806	04-12-10	06-01-10	Boone Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	45,060	04-12-10	06-01-10	Prosser Acclim Pond Lost Creek Acclim	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	134,850	04-12-10	06-01-10	Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	135,086	04-12-10	06-01-10	Naches River	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	205,926	04-12-10	06-01-10	Easton Pond	Yakima River
Yakama Tribe	Entiat Hatchery	CO	UN	2010	209,754	04-24-10	04-30-10	Icicle Creek	Wenatchee River
Yakama Tribe	Little White Salmon NFH	CH0	FA	2010	1,200,000	04-23-10	04-23-10	Prosser Acclim Pond Lost Creek Acclim	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	38,159	04-12-10	06-01-10	Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	74,342	04-07-10	06-01-10	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	74,438	04-12-10	06-01-10	Naches River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	137,659	04-12-10	06-01-10	Prosser Acclim Pond	Yakima River
Yakama Tribe	Wells Hatchery	CH0	SU	2010	202,000	04-29-10	04-29-10	Naches River	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2010	131,777	04-15-10	04-25-10	Wells Hatchery	Mid-Columbia River
Yakama Tribe	Willard Hatchery	CO	UN	2010	147,604	04-24-10	04-30-10	Icicle Creek	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2010	89,213	04-24-10	04-30-10	Twisp Acclim Pond	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2010	261,180	04-24-10	04-30-10	Winthrop Hatchery	Methow River
Yakama Tribe Total					4,211,759				
Grand Total					20,186,464				

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:		4/30/2010	to	5/13/2010					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Colville Tribe	Ringold Springs Hatchery	CH1	SU	2010	190,000	04-10-10	04-30-10	Bonaparte Acclimation Pond	Okanogan River
Colville Tribe Total					190,000				
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2010	830,000	04-12-10	05-03-10	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Oxbow-Idaho	CH0	FA	2010	200,000	05-01-10	05-01-10	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Oxbow-Oregon	SO	UN	2010	66,500	05-01-10	05-01-10	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery	SO	UN	2010	112,500	05-01-10	05-01-10	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game Total					1,209,000				
National Marine Fisheries Service	Lyons Ferry Hatchery	CH0	FA	2010	230,000	05-11-10	05-29-10	Couse Creek	Snake River
National Marine Fisheries Service Total					230,000				
								Big Canyon Acclim.Pd	
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2010	156,000	05-10-10	05-10-10	(Grande Ronde)	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2010	212,760	04-13-10	06-01-10	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	CH0	FA	2010	800,000	05-01-10	05-01-10	Hells Canyon Dam	Snake River
Oregon Dept. of Fish and Wildlife Total					1,168,760				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2010	125,068	04-29-10	05-04-10	East Fk Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2010	216,749	05-05-10	05-13-10	Yankee Fk (Salmon R)	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2010	231,521	05-05-10	05-13-10	Yankee Fk (Salmon R)	Salmon River (ID)
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2010	4,600,000	05-07-10	05-11-10	Spring Creek Hatchery	L Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2010	29,000	04-20-10	04-30-10	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2010	71,000	04-20-10	04-30-10	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service Total					5,273,338				
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2010	12,500	04-30-10	04-30-10	Parkdale Acclim Pond E Fk Irrig Dist Sand	Hood River
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2010	25,000	04-30-10	04-30-10	Trap	Hood River
Warm Springs Tribe Total					37,500				

Hatchery Releases Next Two Weeks (Continued)

Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2010	200,000	04-01-10	04-30-10	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2010	610,000	04-15-10	05-15-10	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SP	2010	150,000	05-01-10	05-07-10	Lake Wenatchee	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2010	350,000	04-10-10	05-05-10	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2010	950,000	04-25-10	05-05-10	Dryden Acclim Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2010	79,000	04-20-10	04-30-10	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2010	202,000	04-20-10	04-30-10	Twisp River	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2010	260,000	04-20-10	04-30-10	Chewuch Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2010	400,000	04-20-10	05-01-10	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2010	24,000	04-25-10	05-05-10	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2010	90,000	05-01-10	05-07-10	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2010	20,000	04-25-10	05-05-10	White Salmon River	White Salmon River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	CH1	SU	2010	257,000	04-25-10	05-05-10	Turtle Rock Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2010	50,000	04-10-10	05-15-10	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2010	115,000	05-01-10	05-07-10	Chiwawa River	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2010	144,000	05-01-10	05-07-10	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Turtle Rock Hatchery	ST	SU	2010	156,000	05-01-10	05-07-10	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2010	335,000	04-15-10	06-01-10	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2010	484,000	05-10-10	05-20-10	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2010	105,000	04-20-10	05-05-10	Okanogan River	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2010	180,000	04-20-10	05-05-10	Methow River	Methow River
Washington Dept. of Fish and Wildlife Total					5,161,000				
Yakama Tribe	Cascade Hatchery	CO	UN	2010	59,114	05-07-10	05-14-10	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2010	59,963	05-01-10	05-07-10	Coulter Creek	Wenatchee River
								Butcher Creek Acclim.	
Yakama Tribe	Cascade Hatchery	CO	UN	2010	118,001	05-01-10	05-07-10	Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2010	118,241	05-01-10	05-07-10	Wenatchee River	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2010	219,746	04-24-10	04-30-10	Icicle Creek	Wenatchee River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2010	280,960	03-15-10	05-14-10	Clark Flat Acclim Pond	Yakima River
								Jack Creek Acclim	
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2010	282,011	03-15-10	05-14-10	Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2010	288,342	03-15-10	05-14-10	Easton Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	15,846	04-07-10	06-01-10	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	37,806	04-12-10	06-01-10	Boone Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	45,060	04-12-10	06-01-10	Prosser Acclim Pond	Yakima River
								Lost Creek Acclim	
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	134,850	04-12-10	06-01-10	Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	135,086	04-12-10	06-01-10	Naches River	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2010	205,926	04-12-10	06-01-10	Easton Pond	Yakima River
Yakama Tribe	Entiat Hatchery	CO	UN	2010	209,754	04-24-10	04-30-10	Icicle Creek	Wenatchee River
								Lost Creek Acclim	
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	38,159	04-12-10	06-01-10	Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	74,342	04-07-10	06-01-10	Holmes Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	74,438	04-12-10	06-01-10	Naches River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2010	137,659	04-12-10	06-01-10	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2010	10,060	05-01-10	05-07-10	Coulter Creek	Wenatchee River
								Butcher Creek Acclim.	
Yakama Tribe	Willard Hatchery	CO	UN	2010	29,189	05-01-10	05-07-10	Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2010	29,446	05-07-10	05-14-10	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2010	57,870	05-01-10	05-07-10	Winthrop Hatchery	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2010	147,604	04-24-10	04-30-10	Icicle Creek	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2010	89,213	04-24-10	04-30-10	Twisp Acclim Pond	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2010	261,180	04-24-10	04-30-10	Winthrop Hatchery	Methow River
Yakama Tribe Total					3,159,866				
Grand Total					16,429,464				

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
04/16/2010	49.8	0.0	57.6	0.0	57.7	4.5	55.2	0.0	57.1	0.0	63.3	0.0	61.3	0.0
04/17/2010	48.1	0.0	48.9	0.0	53.7	4.1	48.5	0.0	51.5	5.5	60.4	0.0	61.8	0.0
04/18/2010	65.8	0.0	60.5	0.0	57.7	4.3	58.6	0.0	62.0	6.8	62.7	0.0	62.1	0.0
04/19/2010	78.8	0.0	79.6	0.0	78.5	5.8	74.4	0.0	77.8	7.4	72.8	0.0	66.8	0.0
04/20/2010	82.9	0.0	85.5	0.0	86.0	6.6	83.2	0.0	84.4	9.1	88.1	0.0	85.4	0.0
04/21/2010	81.3	0.0	82.1	0.0	91.4	7.2	93.7	0.0	98.6	9.1	94.5	0.0	90.3	0.0
04/22/2010	80.5	0.0	81.0	0.0	89.8	6.6	87.0	0.0	92.4	9.1	99.5	8.4	97.3	0.0
04/23/2010	82.8	0.0	79.6	0.0	94.4	7.3	95.7	0.0	100.8	8.2	116.3	19.9	114.7	15.0
04/24/2010	64.4	0.0	68.0	0.0	76.8	6.0	76.4	0.0	79.4	8.2	86.1	19.3	84.8	24.5
04/25/2010	73.7	0.0	69.7	0.0	86.2	6.5	86.1	0.0	91.2	8.2	98.2	19.7	89.5	24.6
04/26/2010	101.6	0.0	99.7	0.0	112.5	8.1	111.2	0.0	112.0	9.4	116.1	19.6	115.0	26.7
04/27/2010	86.2	0.0	90.0	0.0	97.1	7.2	92.7	0.0	97.3	10.2	127.1	19.6	128.0	25.1
04/28/2010	74.0	0.0	82.5	0.0	95.3	7.1	95.1	0.0	99.5	11.4	106.1	18.0	99.6	24.3
04/29/2010	78.6	0.0	78.7	0.0	97.0	7.0	97.7	0.0	103.5	10.1	108.9	18.1	104.5	25.8

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
04/16/2010	1.2	0.0	13.4	12.7	34.5	20.3	31.9	9.6	32.5	20.4	33.5	23.9		
04/17/2010	1.2	0.0	14.5	16.0	33.2	20.3	32.8	10.1	32.0	19.9	32.6	22.9		
04/18/2010	1.3	0.0	15.4	15.3	39.4	20.5	37.6	11.6	38.1	24.3	39.9	30.0		
04/19/2010	1.3	0.0	16.8	16.6	45.2	20.4	43.6	13.0	44.3	22.0	46.0	36.1		
04/20/2010	1.3	0.0	17.3	12.3	48.4	20.5	46.0	13.8	45.3	16.9	46.4	36.4		
04/21/2010	1.2	0.0	20.3	12.3	51.4	20.2	50.0	15.0	50.2	16.9	54.7	42.1		
04/22/2010	1.2	0.0	24.1	16.7	62.6	20.3	62.8	18.8	60.3	19.1	61.1	47.5		
04/23/2010	1.2	0.0	22.3	18.3	76.2	20.4	74.1	22.3	73.6	24.0	75.4	49.1		
04/24/2010	1.2	0.0	21.2	16.5	69.3	20.5	66.8	20.1	68.5	26.8	71.2	49.1		
04/25/2010	1.2	0.0	19.9	15.2	61.6	20.5	60.3	18.1	60.8	26.9	64.6	47.0		
04/26/2010	1.2	0.0	18.9	16.8	55.4	20.5	53.2	15.9	54.1	26.8	55.0	44.1		
04/27/2010	1.3	0.0	18.0	12.6	53.0	20.6	51.6	15.4	52.7	25.3	53.8	43.8		
04/28/2010	1.2	0.0	18.8	14.1	55.8	20.4	55.2	16.6	53.7	23.9	55.3	45.1		
04/29/2010	1.1	0.0	---	---	60.3	20.3	58.1	17.3	58.3	25.1	59.6	49.4		

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
04/16/2010	99.4	40.0	100.1	30.2	97.8	39.4	115.0	72.2	0.0	30.4
04/17/2010	98.9	39.8	101.0	30.5	97.3	38.8	115.0	72.2	0.0	30.4
04/18/2010	104.1	41.9	102.9	31.1	94.5	37.4	116.2	73.3	0.0	30.5
04/19/2010	112.9	45.3	111.3	33.5	107.1	42.4	123.6	74.2	0.0	37.0
04/20/2010	135.4	54.4	133.2	40.3	128.8	51.6	141.0	74.3	6.0	51.9
04/21/2010	141.9	56.8	149.2	44.8	141.7	56.3	161.9	81.0	0.0	73.5
04/22/2010	169.6	68.1	171.3	51.5	162.4	64.9	166.6	95.6	0.0	62.2
04/23/2010	182.2	73.0	203.9	61.1	194.7	77.6	205.4	99.6	1.8	91.6
04/24/2010	173.9	69.7	171.9	51.6	163.4	65.6	187.2	99.5	0.5	74.7
04/25/2010	173.0	69.5	188.9	56.8	181.0	72.4	195.6	99.2	0.0	84.0
04/26/2010	168.8	68.1	176.5	52.8	168.3	67.2	178.4	99.3	0.0	68.7
04/27/2010	177.2	71.2	175.6	52.8	168.5	67.4	187.2	99.3	14.6	63.1
04/28/2010	165.8	66.6	162.0	48.7	151.7	60.8	170.5	99.4	0.0	58.7
04/29/2010	160.2	64.4	167.0	50.1	155.2	62.2	173.3	99.5	0.0	61.5

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>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
4/16	97.2	97.7	98.4	24	104.0	106.2	106.8	24	105.5	105.7	105.9	24	103.9	104.1	104.2	24	106.2	106.6	106.9	24
4/17	97.2	97.6	97.9	24	102.5	103.8	105.2	22	105.8	106.0	107.3	24	104.0	104.6	105.0	22	105.9	106.0	106.2	24
4/18	97.6	98.2	98.8	24	104.3	106.5	107.7	23	105.6	106.0	106.8	24	104.6	104.7	105.0	23	105.8	106.2	106.4	24
4/19	98.4	98.9	99.9	23	105.9	108.9	109.3	24	106.4	106.6	107.4	24	104.5	104.9	105.5	24	106.7	107.3	107.5	24
4/20	99.2	99.9	100.9	23	105.5	107.7	108.7	22	107.3	107.8	108.4	24	106.4	107.1	107.7	22	107.7	107.9	108.0	24
4/21	99.8	100.8	102.2	24	105.6	107.9	108.5	24	106.7	107.4	108.1	24	106.8	107.2	108.0	24	107.6	107.8	108.0	24
4/22	99.4	99.7	100.4	23	106.4	107.0	107.4	24	106.5	106.9	107.6	24	105.8	106.2	107.0	24	106.6	106.9	107.2	24
4/23	99.4	100.0	100.9	23	106.1	107.0	107.9	21	104.7	105.0	105.4	24	104.8	105.1	105.6	21	105.5	105.8	106.1	24
4/24	99.0	99.4	99.9	24	105.8	106.2	106.7	23	104.8	105.3	107.2	24	104.4	104.7	105.3	23	105.0	105.2	105.4	24
4/25	98.6	99.1	99.9	23	105.1	106.1	107.3	21	103.5	103.9	104.2	24	103.3	103.4	103.5	21	104.7	105.1	105.4	24
4/26	99.2	100.0	100.7	23	107.5	109.6	111.7	22	105.9	107.1	107.8	24	105.0	105.9	106.5	22	105.4	105.7	105.9	24
4/27	99.8	100.3	100.7	24	107.2	107.6	108.3	22	109.5	110.0	110.1	24	107.3	107.9	108.5	22	106.2	106.4	106.6	24
4/28	99.9	100.0	100.2	24	106.5	106.8	107.0	23	108.6	109.3	109.7	24	106.3	106.7	107.2	23	105.6	105.9	105.9	24
4/29	100.2	100.6	101.0	23	105.7	105.9	106.3	22	106.1	106.6	107.1	24	105.0	105.5	106.3	22	104.8	105.0	105.4	24

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			#	<u>Wells</u>			#	<u>Wells Dwnstrm</u>			#	<u>Rocky Reach</u>			#	<u>Rocky R. Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
4/16	105.3	106.2	106.5	24	---	---	---	0	106.7	107.6	108.3	24	107.7	108.1	108.5	24	107.4	107.7	108.0	24
4/17	104.9	105.3	105.7	24	---	---	---	0	107.3	107.8	108.3	24	108.3	108.5	108.8	24	107.7	107.8	108.0	24
4/18	105.1	106.3	107.2	24	---	---	---	0	107.8	108.9	109.5	24	108.1	108.7	110.4	24	107.4	107.8	108.3	24
4/19	106.0	107.1	107.8	24	108.2	108.2	109.3	13	108.6	109.3	109.7	24	108.9	109.4	109.7	24	108.3	108.8	109.4	24
4/20	107.8	108.1	108.6	24	108.1	108.3	108.7	24	109.3	109.6	110.0	24	109.8	110.1	110.5	24	109.2	109.4	109.7	24
4/21	107.8	108.2	108.4	24	107.9	108.3	108.7	24	109.3	109.7	110.5	24	109.9	110.2	110.4	24	109.3	109.5	109.7	24
4/22	106.5	107.1	107.5	24	107.0	107.5	108.2	24	108.4	109.0	109.7	24	109.0	109.2	109.4	24	107.9	108.5	108.8	24
4/23	105.4	105.9	106.6	24	106.0	106.4	106.6	24	107.4	107.9	108.4	24	108.0	108.5	108.8	24	107.4	107.7	108.0	24
4/24	104.7	105.5	106.8	24	104.7	105.0	105.4	24	106.1	106.5	107.0	24	107.7	107.9	108.2	24	107.1	107.3	107.6	24
4/25	104.6	105.8	106.3	24	104.4	104.9	105.5	24	106.1	106.6	107.3	24	106.9	107.2	107.4	24	106.4	106.7	107.0	24
4/26	105.0	105.9	106.5	24	105.6	106.4	106.7	24	107.0	107.7	107.9	24	107.4	107.8	108.3	24	107.0	107.3	107.8	24
4/27	106.5	107.3	107.9	24	107.0	107.2	107.5	24	108.1	108.5	109.0	24	109.0	109.1	109.2	24	108.4	108.7	108.9	24
4/28	106.7	107.2	107.6	24	105.8	106.1	106.6	23	106.9	107.2	107.7	23	108.2	108.3	108.5	24	107.6	107.9	108.1	24
4/29	105.6	106.0	106.4	24	104.6	105.0	105.3	24	105.7	106.2	106.7	24	106.5	107.2	107.8	24	106.0	106.6	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>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
4/16	107.6	108.1	108.2	24	107.6	108.1	108.2	24	109.1	110.3	112.2	24	106.8	107.4	107.7	24	106.8	107.7	108.5	24
4/17	108.6	109.0	109.4	24	110.8	111.7	113.7	24	108.0	108.5	108.8	24	107.3	107.6	108.0	24	108.1	108.8	109.5	24
4/18	108.1	108.6	109.0	24	112.4	113.4	114.5	24	109.3	111.7	113.7	24	107.2	108.0	108.2	24	108.1	108.7	109.1	24
4/19	109.1	109.7	110.1	24	112.4	114.0	115.9	24	111.5	112.5	113.8	24	108.9	109.8	110.5	24	109.7	110.4	111.0	24
4/20	109.6	109.7	109.9	24	112.6	113.8	116.1	24	110.5	111.0	112.5	24	109.8	110.2	110.6	24	109.4	109.8	110.1	24
4/21	108.6	108.8	109.2	24	111.4	112.5	114.5	24	107.7	108.6	109.6	24	107.7	108.3	109.0	24	106.9	107.3	108.2	24
4/22	107.9	108.1	108.5	24	110.8	111.8	114.2	24	106.7	107.0	107.3	24	109.1	110.8	113.4	24	105.3	105.6	106.1	19
4/23	107.7	108.2	108.6	24	110.2	111.3	113.0	24	107.3	107.8	108.1	24	111.5	112.7	114.7	24	---	---	---	0
4/24	107.0	107.4	108.2	24	111.1	112.6	114.8	24	106.9	107.4	107.6	34	112.0	112.8	113.0	34	109.6	110.1	110.4	24
4/25	106.7	107.0	107.4	24	109.9	111.2	112.8	24	106.2	107.0	107.5	34	111.4	112.9	113.6	34	109.6	110.8	112.3	24
4/26	107.7	108.1	108.3	24	110.2	111.2	112.6	24	108.9	110.1	110.6	24	111.6	112.1	112.7	24	112.9	113.6	113.9	24
4/27	108.6	109.0	109.2	24	111.6	112.2	113.9	24	110.8	111.1	111.5	34	113.1	114.0	114.7	34	112.6	113.0	113.2	34
4/28	107.6	107.8	108.2	24	110.9	111.8	114.9	24	109.0	109.4	110.3	24	111.5	112.2	113.2	24	110.0	110.3	110.6	24
4/29	106.3	106.6	107.5	24	109.8	111.3	114.8	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>Clrwrtr-Peck</u>			<u>Anatone</u>							
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/16	105.5	106.3	106.6	24	106.3	107.3	107.8	24	106.2	107.2	108.2	24	102.4	103.7	105.1	24	102.2	103.4	104.7	24
4/17	106.6	107.0	107.3	24	106.3	107.1	107.5	24	105.8	107.5	108.7	24	102.1	102.8	103.9	24	101.8	102.8	104.1	24
4/18	106.8	107.3	107.5	24	106.7	107.6	108.0	24	107.3	108.1	108.9	24	101.6	102.3	103.3	24	101.9	102.9	104.1	24
4/19	108.3	109.1	109.4	24	108.1	109.0	109.3	24	106.5	108.0	109.4	24	101.4	102.1	103.1	24	102.2	103.2	104.2	24
4/20	108.8	109.1	109.3	24	108.9	109.6	110.3	24	106.5	108.1	109.8	24	101.5	102.2	102.9	24	102.0	102.8	103.6	24
4/21	106.4	106.8	108.0	24	106.8	107.3	108.0	24	106.0	107.1	108.0	24	100.4	100.7	101.5	23	100.8	101.0	101.2	24
4/22	104.5	104.8	105.3	24	105.6	106.3	106.8	24	105.3	105.6	106.2	24	99.1	99.4	99.8	23	101.1	101.5	102.1	24
4/23	107.7	111.4	112.5	24	104.6	105.4	106.0	24	105.1	105.6	106.3	18	98.1	98.3	98.7	24	102.0	102.9	103.7	24
4/24	111.4	112.0	112.2	34	104.6	105.6	106.0	24	105.8	106.9	107.6	24	98.3	98.5	98.8	24	101.9	102.3	102.8	24
4/25	111.3	112.4	112.5	34	107.3	108.8	109.2	24	105.4	106.3	107.1	24	98.7	99.6	100.3	23	102.1	103.0	103.7	24
4/26	113.8	114.6	114.9	24	109.7	111.0	111.4	24	106.2	107.2	109.5	24	100.3	101.3	101.7	22	102.9	103.8	104.4	24
4/27	114.2	114.7	114.9	34	110.7	111.5	112.5	24	106.1	107.2	108.5	24	100.2	100.6	101.4	21	102.3	102.7	103.0	24
4/28	111.6	112.2	113.2	24	107.2	107.7	108.3	24	116.9	126.1	129.9	24	98.7	99.2	99.8	21	101.6	102.3	103.1	24
4/29	---	---	---	0	105.3	105.7	106.2	24	106.2	106.6	107.4	24	100.2	101.1	101.4	24	101.3	101.5	101.7	24

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwrtr-Lewiston</u>			<u>Lower Granite</u>			<u>L. Granite Tlwr</u>			<u>Little Goose</u>			<u>L. Goose Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/16	103.2	105.6	107.7	24	102.5	102.9	103.6	24	112.4	112.6	112.7	24	105.1	105.6	105.9	24	111.3	111.9	112.3	24
4/17	103.3	105.1	107.1	22	101.4	101.7	101.9	24	112.3	112.5	112.7	24	107.4	107.8	108.9	24	112.0	112.4	113.0	24
4/18	102.4	104.4	106.2	24	101.5	101.8	102.1	24	112.1	112.3	112.5	24	109.5	110.5	111.4	24	112.4	112.8	113.1	24
4/19	102.7	104.6	106.2	23	103.4	103.9	104.2	24	111.8	112.0	112.4	24	112.6	114.4	115.8	24	112.9	113.2	113.5	24
4/20	102.7	104.3	105.6	23	103.9	104.2	104.4	24	111.5	111.7	112.3	24	114.3	114.7	114.9	24	112.9	113.4	113.9	24
4/21	100.6	100.9	101.7	22	102.9	103.3	104.0	24	111.1	111.5	112.6	24	112.0	112.5	113.5	24	111.9	112.1	112.4	24
4/22	100.7	101.1	102.0	20	102.1	102.3	102.6	24	110.1	110.5	111.2	24	110.0	110.3	111.1	24	111.3	111.5	112.0	24
4/23	101.8	103.2	104.2	22	100.7	100.9	101.5	24	109.5	109.8	110.3	24	108.2	108.6	108.8	24	111.0	111.4	111.8	24
4/24	101.6	102.4	103.4	24	99.3	99.8	100.4	24	109.6	109.9	110.5	24	106.6	107.1	107.9	24	110.2	110.4	110.8	24
4/25	102.2	104.0	105.3	22	98.7	99.0	99.4	24	109.4	109.8	110.3	24	105.7	106.3	106.6	24	109.7	110.0	110.3	24
4/26	102.9	104.7	106.0	24	101.5	102.7	103.7	24	110.2	110.8	111.7	24	106.7	107.2	108.0	24	111.4	112.1	112.6	24
4/27	102.0	102.7	103.0	24	104.0	104.2	104.5	24	111.3	111.5	111.7	24	108.0	108.1	108.3	24	112.3	112.5	112.7	24
4/28	101.2	102.2	103.3	22	103.3	103.5	103.8	24	110.5	110.8	111.1	24	106.7	106.9	107.2	24	110.7	111.0	111.6	24
4/29	99.8	99.9	100.2	18	102.6	102.9	103.3	24	109.9	110.2	110.5	24	105.7	106.2	106.5	24	109.4	109.6	110.0	24

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>							
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/16	107.1	107.6	108.1	24	115.3	117.1	118.5	24	111.0	111.4	112.1	24	113.0	114.0	114.6	24	---	---	---	0
4/17	107.3	107.7	108.1	24	116.0	117.4	118.3	24	111.1	111.6	112.1	24	112.7	113.4	113.7	24	---	---	---	0
4/18	108.6	109.2	110.2	24	117.2	118.0	118.4	24	114.1	115.2	116.7	24	113.4	114.3	115.1	24	---	---	---	0
4/19	110.5	111.0	111.3	24	117.6	118.3	119.2	24	116.3	116.6	117.2	24	114.0	114.4	115.2	24	---	---	---	0
4/20	111.6	111.8	112.3	24	116.8	117.1	117.9	24	117.4	117.7	118.1	24	113.4	113.9	114.3	24	---	---	---	0
4/21	112.2	112.3	112.4	24	116.9	117.2	118.0	24	116.3	117.0	117.8	24	113.6	114.6	115.4	24	---	---	---	0
4/22	110.9	111.2	111.7	24	115.6	116.5	116.9	24	113.6	114.3	115.2	24	114.9	115.5	115.8	24	---	---	---	0
4/23	109.4	109.7	110.0	24	116.9	118.7	119.1	24	111.2	111.5	112.0	24	115.5	115.9	116.5	24	---	---	---	0
4/24	108.9	109.2	109.8	24	118.1	118.4	118.6	24	111.0	111.2	111.4	24	114.8	115.5	115.7	24	---	---	---	0
4/25	108.8	109.6	110.0	24	118.6	118.9	119.2	24	110.5	111.0	111.7	24	114.7	115.2	115.5	24	---	---	---	0
4/26	110.0	110.9	111.4	24	119.0	119.5	119.9	24	112.8	113.6	114.7	24	114.2	114.6	114.9	24	---	---	---	0
4/27	111.4	111.7	111.9	24	116.5	119.1	119.5	24	115.3	115.6	116.1	24	113.9	114.6	115.2	24	---	---	---	0
4/28	109.8	110.2	111.2	24	112.9	113.1	113.8	24	114.4	114.9	115.5	24	114.1	114.4	114.7	24	---	---	---	0
4/29	107.1	107.7	108.5	24	114.5	116.4	117.9	24	---	---	---	0	114.6	115.2	115.7	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	McNary-Wash			#	McNary Tlwr			#	John Day			#	John Day Tlwr			#	The Dalles			#
	24 h	12 h			24 h	12 h			24h	12h			24h	12h			24h	12h		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	AVG	High	
4/16	107.8	108.1	108.4	24	114.1	114.5	114.7	24	103.4	103.7	104.1	24	109.2	109.4	109.8	24	109.7	110.1	110.4	24
4/17	107.5	107.8	108.6	24	113.9	114.7	115.6	24	103.1	103.4	103.7	24	109.0	109.2	109.4	24	109.3	109.6	109.8	24
4/18	108.5	109.4	111.5	24	114.4	115.2	115.6	24	104.3	105.4	107.2	24	109.1	109.7	110.0	24	109.1	109.8	110.2	24
4/19	112.1	112.8	114.2	24	114.9	115.2	115.8	24	106.0	106.7	107.5	24	111.1	112.9	114.5	24	110.6	111.4	111.9	24
4/20	111.0	111.2	111.4	24	115.6	116.1	116.8	24	107.2	107.6	108.2	24	113.3	113.8	114.2	24	110.0	110.5	111.2	24
4/21	110.0	110.3	110.6	24	114.6	114.8	115.0	24	106.9	107.2	107.5	24	113.5	114.0	114.8	24	106.7	107.4	108.1	24
4/22	108.4	109.2	109.6	24	114.8	115.4	116.0	24	105.7	106.2	106.6	24	113.6	114.1	114.4	24	105.3	105.7	106.0	24
4/23	107.1	107.5	108.4	24	115.3	115.8	116.2	24	105.1	105.7	106.4	24	113.4	113.8	114.1	24	107.4	108.5	109.2	24
4/24	106.1	106.4	107.2	24	115.7	116.2	116.9	24	104.9	105.2	105.7	24	113.6	113.9	114.0	24	107.8	108.5	109.4	24
4/25	105.4	105.8	106.3	24	115.6	116.1	116.7	24	104.5	105.1	105.7	24	113.5	113.8	114.0	24	108.1	109.2	110.0	24
4/26	108.0	108.9	109.5	24	115.7	116.3	116.9	24	106.0	106.8	107.2	24	113.7	114.0	114.3	24	110.8	111.0	111.3	24
4/27	109.8	110.6	111.1	24	115.1	115.9	116.6	24	107.0	107.2	107.7	24	113.7	114.1	114.3	24	110.4	110.8	110.9	24
4/28	109.8	110.3	110.9	24	116.1	116.5	116.7	24	105.8	106.1	106.4	24	113.4	113.8	114.2	24	108.1	108.5	109.0	24
4/29	106.4	107.2	108.3	24	115.6	116.2	116.5	24	104.6	105.0	105.5	24	113.0	113.3	113.5	24	106.0	106.4	107.0	24

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	The Dalles Dnst			#	Bonneville			#	Warrendale			#	Camas\Washougal			#	Cascade Island			#
	24 h	12 h			24 h	12 h			24h	12h			24h	12h			24h	12h		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	AVG	High	
4/16	113.9	114.2	114.4	24	111.2	111.5	111.9	24	117.5	118.2	118.6	24	117.3	118.4	119.0	24	113.7	113.8	113.8	24
4/17	113.6	113.9	114.2	24	112.0	112.4	112.6	24	117.8	118.4	119.0	24	117.9	118.7	119.6	24	113.7	113.8	113.9	24
4/18	113.4	114.0	114.6	24	112.2	112.5	112.7	24	118.0	118.7	119.2	24	117.7	118.2	118.5	24	113.4	113.6	113.8	24
4/19	114.4	115.1	115.5	24	112.8	113.0	113.3	24	116.8	117.6	118.0	24	117.0	118.0	118.3	24	113.3	113.4	113.8	24
4/20	114.5	114.9	115.3	24	111.8	112.6	113.0	24	115.3	116.5	116.9	24	115.6	116.4	117.2	24	113.7	114.1	114.3	24
4/21	112.8	113.3	114.2	24	107.8	108.4	109.6	24	112.8	113.1	113.4	24	110.1	111.0	112.4	24	114.7	115.4	115.7	24
4/22	112.2	112.9	113.2	24	105.3	105.7	106.3	24	113.2	113.9	114.4	24	110.1	111.6	112.7	24	115.7	116.1	116.3	24
4/23	114.0	114.7	115.3	24	106.1	107.0	107.6	24	114.1	114.4	114.8	24	111.5	113.2	114.3	24	116.5	116.9	117.0	24
4/24	113.9	114.3	114.5	24	107.8	108.2	108.7	24	114.3	114.8	115.2	24	110.2	111.0	111.3	24	116.3	116.4	117.0	24
4/25	114.3	115.3	115.6	24	110.1	111.3	112.1	24	115.7	116.1	116.5	24	113.0	115.0	116.0	24	116.6	116.9	117.0	24
4/26	116.1	116.5	116.8	24	112.2	112.8	114.0	24	116.3	116.7	117.1	24	110.9	111.9	114.2	24	117.0	117.1	117.5	24
4/27	115.7	116.3	116.6	24	115.2	115.6	115.8	24	116.7	116.9	117.2	24	113.9	115.1	115.6	24	117.0	117.1	117.4	24
4/28	114.0	114.5	115.0	24	111.9	112.8	114.1	24	116.1	116.4	116.6	24	113.2	113.8	114.2	24	116.6	116.8	117.0	24
4/29	112.5	112.9	113.2	24	108.0	108.6	109.6	24	115.0	115.4	115.8	24	112.4	112.9	113.5	24	116.2	116.3	116.4	24

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
04/16/2010	*	154	5,347	926	14	685	14	---	23	---	63	6,347
04/17/2010	*	326	5,409	2,178	10	984	---	81	14	217	92	9,114
04/18/2010	*	1,833	2,569	1,816	5	815	---	---	36	---	155	4,884
04/19/2010	*	3,006	---	1,487	14	2,794	---	---	46	1,062	294	5,654
04/20/2010	*	4,424	1,233	1,236	112	6,676	---	215	22	---	264	7,527
04/21/2010	*	3,760	235	1,418	110	9,933	191	---	25	4,626	2,551	28,850
04/22/2010	*	2,867	---	3,574	1,214	30,986	---	---	90	---	1,778	22,997
04/23/2010	*	1,860	---	1,449	829	116,972	---	159	58	8,464	3,757	33,656
04/24/2010	*	1,051	---	1,006	885	121,282	---	---	94	---	6,900	26,036
04/25/2010	*	617	338	552	116	94,213	---	---	78	16,312	5,933	22,430
04/26/2010	*	1,731	374	343	89	40,962	24,903	70	165	---	10,636	22,786
04/27/2010	*	584	174	121	31	89,222	---	---	160	17,081	12,601	28,082
04/28/2010	*	624	---	201	20	166,210	---	---	140	---	11,164	29,277
04/29/2010	*	816	---	349	72	117,551	---	---	151	36,798	12,285	31,546
04/30/2010		---	---	---	---	---	---	---	---	---	---	---
Total:		23,653	15,679	16,656	3,521	799,285	25,108	525	1,102	84,560	68,473	279,186
# Days:		14	8	14	14	14	3	4	14	7	14	14
Average:		1,690	1,960	1,190	252	57,092	8,369	131	79	12,080	4,891	19,942
YTD		53,686	75,677	19,869	3,567	804,611	25,165	537	1,248	84,816	69,293	293,793

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)	
04/16/2010	*	0	0	0	5	92	0	---	139	---	11	169,247
04/17/2010	*	0	1	0	8	61	---	0	47	9	0	71,027
04/18/2010	*	0	0	0	7	49	---	---	104	---	0	31,784
04/19/2010	*	0	---	0	1	16	---	---	16	17	6	28,198
04/20/2010	*	0	4	1	13	309	---	0	28	---	29	15,370
04/21/2010	*	0	0	0	6	181	0	---	157	0	12	11,599
04/22/2010	*	0	---	1	6	315	---	---	116	---	0	7,670
04/23/2010	*	0	---	0	16	282	---	0	46	34	0	6,780
04/24/2010	*	0	---	0	3	2,492	---	---	10	---	0	5,379
04/25/2010	*	0	9	0	2	1,454	---	---	11	102	0	3,764
04/26/2010	*	0	6	0	2	308	0	0	9	---	0	3,592
04/27/2010	*	0	2	0	2	1,932	---	---	3	0	0	2,504
04/28/2010	*	0	---	0	3	1,343	---	---	3	---	0	1,050
04/29/2010	*	0	---	0	1	309	---	---	3	256	0	2,365
04/30/2010		---	---	---	---	---	---	---	---	---	---	---
Total:		0	22	2	75	9,143	0	0	692	418	58	360,329
# Days:		14	8	14	14	14	3	4	14	7	14	14
Average:		0	3	0	5	653	0	0	49	60	4	25,738
YTD		0	34	3	191	9,566	0	0	1,278	454	58	954,500

Two-Week Summary of Passage Indices

COMBINED COHO												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
04/16/2010	*	0	0	0	0	0	---	1	---	0	685	
04/17/2010	*	0	0	0	0	---	0	0	17	0	471	
04/18/2010	*	0	0	0	2	0	---	---	1	---	71	
04/19/2010	*	0	---	0	0	0	---	---	3	95	573	
04/20/2010	*	0	0	0	1	0	---	0	0	---	1,075	
04/21/2010	*	0	0	0	0	0	---	---	11	162	6,378	
04/22/2010	*	0	---	0	8	0	---	---	38	---	6,415	
04/23/2010	*	0	---	0	0	0	---	0	10	392	11,342	
04/24/2010	*	0	---	0	25	0	---	---	18	---	16,999	
04/25/2010	*	0	0	0	4	0	---	---	7	581	11,593	
04/26/2010	*	0	0	0	3	308	0	0	11	---	11,635	
04/27/2010	*	0	0	0	1	322	---	---	16	2,049	11,319	
04/28/2010	*	0	---	0	3	336	---	---	13	---	9,607	
04/29/2010	*	0	---	0	4	0	---	---	15	598	10,364	
04/30/2010		---	---	---	---	---	---	---	---	---	---	
Total:		0	0	0	51	966	0	0	144	3,894	848	98,527
# Days:		14	8	14	14	14	3	4	14	7	14	14
Average:		0	0	0	4	69	0	0	10	556	61	7,038
YTD		0	0	0	52	966	0	0	155	3,894	857	108,258

COMBINED STEELHEAD												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
04/16/2010	*	24	91	13	4	395	34	---	4	---	69	0
04/17/2010	*	26	238	19	12	393	---	23	8	232	46	237
04/18/2010	*	124	307	15	6	729	---	---	3	---	40	71
04/19/2010	*	102	---	34	54	2,403	---	---	35	2,505	144	72
04/20/2010	*	186	1,047	19	48	2,520	---	67	28	---	121	443
04/21/2010	*	64	435	26	74	6,141	417	---	42	3,420	1,025	1,839
04/22/2010	*	44	---	275	215	10,224	---	---	76	---	810	2,228
04/23/2010	*	73	---	189	1,002	36,879	---	273	84	4,256	2,108	1,972
04/24/2010	*	183	---	179	189	61,749	---	---	186	---	4,071	4,088
04/25/2010	*	67	566	80	101	76,766	---	---	119	5,686	5,127	2,631
04/26/2010	*	133	404	26	70	89,623	46,238	219	153	---	8,294	1,816
04/27/2010	*	156	274	7	93	70,980	---	---	170	8,288	8,677	2,330
04/28/2010	*	190	---	22	134	94,018	---	---	189	---	4,276	4,693
04/29/2010	*	207	---	75	311	77,027	---	---	153	11,099	5,871	5,182
04/30/2010		---	---	---	---	---	---	---	---	---	---	---
Total:		1,579	3,362	979	2,313	529,847	46,689	582	1,250	35,486	40,679	27,602
# Days:		14	8	14	14	14	3	4	14	7	14	14
Average:		113	420	70	165	37,846	15,563	146	89	5,069	2,906	1,972
YTD		1,661	6,465	1,142	2,383	532,735	46,964	590	1,271	35,724	41,184	29,917

Two-Week Summary of Passage Indices

Date	COMBINED SOCKEYE										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
04/16/2010 *	0	0	0	0	0	0	---	91	---	0	0
04/17/2010 *	0	0	0	0	0	---	0	221	9	0	0
04/18/2010 *	0	0	0	0	0	---	---	132	---	0	0
04/19/2010 *	0	---	0	0	0	---	---	217	35	0	0
04/20/2010 *	0	0	0	0	0	---	0	833	---	0	0
04/21/2010 *	0	0	0	0	0	0	---	211	60	6	91
04/22/2010 *	0	---	0	0	0	---	---	463	---	0	0
04/23/2010 *	0	---	0	0	0	---	0	517	306	0	0
04/24/2010 *	0	---	0	0	0	---	---	201	---	0	108
04/25/2010 *	0	0	0	0	0	---	---	89	1,600	0	0
04/26/2010 *	0	0	0	0	0	0	0	514	---	0	185
04/27/2010 *	0	0	0	0	0	---	---	154	1,537	0	174
04/28/2010 *	0	---	0	0	0	---	---	74	---	0	91
04/29/2010 *	0	---	0	0	0	---	---	25	7,085	168	90
04/30/2010	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	0	0	0	3,742	10,632	174	739
# Days:	14	8	14	14	14	3	4	14	7	14	14
Average:	0	0	0	0	0	0	0	267	1,519	12	53
YTD	0	0	0	0	17	0	0	4,246	10,641	207	776

* See sampling comments <http://www.fpc.org/currentDaily/smpcomments.htm>

Smolt indices, clipped & unclipped or combined, are presented in the following order: yearling chinook (chinook 1's), subyearling chinook (chinook 0's), steelhead, coho, and sockeye. Two classes of fish counts are shown in these tables: collection counts, which account for sample rates but are not adjusted for flow; and passage indices, which are collection counts divided by the proportion of water passing through the sampled powerhouse. Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations. The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Definitions for Smolt Index Counts

- WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts
- IMN (Collection) = Imnaha River Trap : Collection Counts
- GRN (Collection) = Grande Ronde River Trap : Collection Counts
- LEW (Collection) = Snake River Trap at Lewiston : Collection Counts
- LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}
- MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
- BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.
 RIS data collected for the FPC by Chelan Co. PUD/Washington Dept. of Fish and Wildlife.
 LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.
 LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.
 IMN data collected for the FPC by the Nez Perce Tribe.

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

4/30/10 9:29 AM

		04/16/10	TO	04/30/10			
		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	5,963	523,867		600	344,808	875,238
	Sum of NumberBarged	5,439	438,720		599	322,019	766,777
	Sum of NumberBypassed	506	84,750		0	22,760	108,016
	Sum of Numbertrucked	0	0		0	0	0
	Sum of SampleMorts	1	17		0	1	19
	Sum of FacilityMorts	17	380		1	28	426
	Sum of ResearchMorts	0	0		0	0	0
	Sum of TotalProjectMorts	18	397		1	29	445
LGS	Sum of NumberCollected		17,503			32,548	50,051
	Sum of NumberBarged		0			0	0
	Sum of NumberBypassed		17,495			32,548	50,043
	Sum of Numbertrucked		0			0	0
	Sum of SampleMorts		5			0	5
	Sum of FacilityMorts		3			0	3
	Sum of ResearchMorts		0			0	0
	Sum of TotalProjectMorts		8			0	8
LMN	Sum of NumberCollected		311			354	665
	Sum of NumberBarged		0			0	0
	Sum of NumberBypassed		311			354	665
	Sum of Numbertrucked		0			0	0
	Sum of SampleMorts		0			0	0
	Sum of FacilityMorts		0			0	0
	Sum of ResearchMorts		0			0	0
	Sum of TotalProjectMorts		0			0	0
MCN	Sum of NumberCollected	245	49,552	2,281	20,779	6,230	79,087
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	245	49,529	2,280	20,767	6,228	79,049
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	13	0	7	1	21
	Sum of FacilityMorts	0	10	1	5	1	17
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	23	1	12	2	38
Total Sum of NumberCollected		6,208	591,233	2,881	398,489	6,230	1,005,041
Total Sum of NumberBarged		5,439	438,720	599	322,019	0	766,777
Total Sum of NumberBypassed		751	152,085	2,280	76,429	6,228	237,773
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		1	35	0	8	1	45
Total Sum of FacilityMorts		17	393	2	33	1	446
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		18	428	2	41	2	491

YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/30/10 9:30 AM

TO: 04/30/10

Site	Data	Species					Grand Total
		CH0	CH1	CO	SO	ST	
LGR	Sum of NumberCollected	6,158	526,462	600	10	346,243	879,473
	Sum of NumberBarged	5,439	438,720	599	0	322,019	766,777
	Sum of NumberBypassed	700	87,339	0	10	24,194	112,243
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	20	0	0	2	24
	Sum of FacilityMorts	17	383	1	0	28	429
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	19	403	1	0	30	453
LGS	Sum of NumberCollected		17,543			32,740	50,283
	Sum of NumberBarged		0			0	0
	Sum of NumberBypassed		17,533			32,740	50,273
	Sum of NumberTrucked		0			0	0
	Sum of SampleMorts		7			0	7
	Sum of FacilityMorts		3			0	3
	Sum of ResearchMorts		0			0	0
	Sum of TotalProjectMorts		10			0	10
LMN	Sum of NumberCollected		319			358	677
	Sum of NumberBarged		0			0	0
	Sum of NumberBypassed		317			357	674
	Sum of NumberTrucked		0			0	0
	Sum of SampleMorts		0			0	0
	Sum of FacilityMorts		0			0	0
	Sum of ResearchMorts		0			0	0
	Sum of TotalProjectMorts		0			0	0
MCN	Sum of NumberCollected	270	49,729	2,281	6,235	20,971	79,486
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	270	49,705	2,280	6,233	20,959	79,447
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	13	0	1	7	21
	Sum of FacilityMorts	0	11	1	1	5	18
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	24	1	2	12	39
Total Sum of NumberCollected		6,428	594,053	2,881	6,245	400,312	1,009,919
Total Sum of NumberBarged		5,439	438,720	599	0	322,019	766,777
Total Sum of NumberBypassed		970	154,894	2,280	6,243	78,250	242,637
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		2	40	0	1	9	52
Total Sum of FacilityMorts		17	397	2	1	33	450
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		19	437	2	2	42	502

Cumulative Adult Passage at Mainstem Dams Through: 04/29

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2010		2009		10-Yr Avg.		2010		2009		10-Yr Avg.		2010		2009		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	04/28	119118	712	16941	911	86440	1148	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/28	73279	395	6135	276	51530	489	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/28	63249	537	3201	164	38352	306	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/28	41299	496	1057	37	30270	237	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/28	24956	289	587	8	18993	120	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/28	15042	180	284	4	16487	59	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/28	9956	187	135	0	13573	75	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/28	6234	85	63	1	11938	35	0	0	0	0	0	0	0	0	0	0	0	0
PRD	04/28	4908	1	15	3	3659	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	04/27	1328	17	12	0	1090	2	0	0	0	0	0	0	0	0	0	0	0	0
RRH	04/27	196	1	2	0	175	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	04/25	10941	97	2241	7	-	-	-	-	-	-	-	-	0	0	0	0	-	-

DAM	Coho						Sockeye			Steelhead			
	2010		2009		10-Yr Avg.		2010	2009	10-Yr Avg.	10-Yr			Wild 2010
	Adult	Jack	Adult	Jack	Adult	Jack				2010	2009	Avg.	
BON	0	0	0	0	0	0	0	0	0	3993	2058	2185	1222
TDA	0	0	0	0	0	0	0	0	0	1860	979	967	962
JDA	0	0	0	0	0	0	0	0	0	2102	2464	2339	1245
MCN	0	0	0	0	0	0	0	0	0	1926	2105	1738	1048
IHR	0	0	0	0	0	0	0	0	0	2690	2863	2136	1087
LMN	0	0	0	0	0	0	0	0	0	3508	4228	2382	1851
LGS	0	0	0	0	0	0	0	0	0	2652	4772	2437	1276
LGR	0	0	0	0	0	0	0	0	0	9778	10137	8217	3730
PRD	0	0	0	0	0	0	0	0	0	58	20	5	0
RIS	0	0	0	0	0	0	0	0	0	82	53	37	51
RRH	0	0	0	0	0	0	0	0	0	247	268	131	182
WEL	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	0	0	0	0	0	-	-	-	-	8693	3305	-	-

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: 04/30/10

BON counts from January 1, 2009 to March 14, 2010 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2010	39	0	2,318	657
2009	19	-1	321	109

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											
	04/26/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	04/20/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/25/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	04/23/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/29/10	Chinook + Steelhead	90	1	1	1.11%	0.00%	1	0	0	0
McNary Dam											
	04/22/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/26/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	04/21/10	Chinook + Steelhead	102	0	0	0.00%	0.00%	0	0	0	0
	04/24/10	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
	04/27/10	Chinook + Steelhead	109	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	04/20/10	Chinook + Steelhead	41	0	0	0.00%	0.00%	0	0	0	0
	04/22/10	Chinook + Steelhead	50	1	0	0.00%	0.00%	0	0	0	0
	04/27/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/29/10	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0