



Fish Passage Center

Weekly Report #13 - 10

May 24, 2013

1827 NE 44th Ave., Suite 240
 Portland, OR 97213
 phone: 503/230-4099
 fax: 503/230-7559

Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has increased over the last week but has generally been lower than average over May, varying between 35% and 110% of average at individual sub-basins over May. Precipitation above The Dalles has been 68% of average over May. Over the 2013 water year, precipitation has ranged between 70% and 100% of average.

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

Location	Water Year 2013		Water Year 2013	
	May 1–22, 2013		October 1, 2012 to May 22, 2013	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	2.09	88	27.1	98
SNAKE RIVER ABOVE ICE HARBOR	0.68	42	13.0	74
Columbia Above The Dalles	1.19	68	17.8	84
Kootenai	2.69	110	29.1	105
Clark Fork	1.21	55	15.2	76
Flathead	2.29	88	26.7	100
Pend Oreille Basin	1.87	78	21.7	88
SNAKE BASIN ABOVE HELLS CANYON	0.62	45	10.4	72
Salmon River Basin	0.73	35	15.2	70
Clearwater	1.10	40	28.3	87
Willamette River above Portland	2.15	77	50.5	88

With increasing river flows, snowpack within the Columbia Basin has been decreasing with average snowpack in the Columbia River for basins above the Snake River confluence now at 78% of average. For Snake River Basins the snowpack is now 38% of average. And for lower Columbia Basins between McNary and Bonneville Dam snowpack is currently 44% of average.

Table 2 displays the April 7th and May 23rd ESP runoff volume forecasts for multiple reservoirs. The May 23rd forecast at The Dalles between January and July is 97,350 Kaf (96% of average).

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

Location	April 7, 2013 ESP		May 23, 2013 ESP	
	% Average (1971–2000)	Runoff Volume (Kaf)	% Average (1971–2000)	Runoff Volume (Kaf)
The Dalles (Jan–July)	93	94287	96	97350
Grand Coulee (Jan–July)	101	60415	106	63408
Libby Res. Inflow, MT (Apr–Aug)	102	6001 *6189	107	6287 *6535
Hungry Horse Res. Inflow, MT (Jan–July)	99	2084	109	2295
Lower Granite Res. Inflow (Apr–July)	83	16485	73	14511
Brownlee Res. Inflow (Apr–July)	62	3376	51	2802
Dworshak Res. Inflow (Apr–July)	96	2319 *2036	87	2114 *2296

* Denotes COE Forecast

Grand Coulee Reservoir is at 1271.3 feet (5-23-13) and refilled 5.8 feet over the last week. Outflows at Grand Coulee have ranged between 155.0 and 176.1 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2422.0 feet (5-23-13) and has refilled 5.9 feet last week. Outflows at Libby Dam have ranged from 18.0 Kcfs to 25.9 Kcfs over the last week; inflows to Libby have ranged from 33.8 Kcfs to 46.4 Kcfs over the same period.

Hungry Horse is currently at an elevation of 3543.9 feet (5-23-13) and has refilled 2.7 feet last week. Outflows at Hungry Horse Dam have ranged from 9.1 Kcfs to 10.8 Kcfs over the last week; inflows to Hungry Horse have ranged from 13.6 Kcfs to 18.0 Kcfs over the same period.

Dworshak is currently at an elevation of 1590.6 feet (5-23-13) and has refilled 6.0 feet last week. Outflows from Dworshak have decreased from 5.4 Kcfs to 3.9 Kcfs over the last week; inflows to Dworshak have ranged between 12.7 Kcfs to 16.5 Kcfs last week.

The Brownlee Reservoir was at an elevation of 2072.4 feet on May 23rd, 2013, refilling 6.8 feet over the last week. Over the last week, inflows at Brownlee have ranged between 15.7 and 16.1 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 85 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 70.9 Kcfs from April 3rd–May 23rd. Over the last week flows at Lower Granite have averaged 85.9 Kcfs and are currently 77.4 Kcfs.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 226 Kcfs at McNary Dam (began April 10th) and 135 Kcfs at Priest Rapids Dam (began April 10th). Flows at McNary Dam have averaged 266.3 Kcfs between April 10th and May 23rd. Over the last week flows at McNary have averaged 309.0 Kcfs and are currently 316.2 Kcfs. Flows at Priest Rapids Dam have averaged 185.2 Kcfs between April 10th and May 23rd. Over the last week flows have averaged 218.8 Kcfs at Priest Rapids and are currently 222.9 Kcfs.

Spill: Spring spill for fish passage began on April 3rd at the lower Snake River projects.

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

Flow in the Snake River has decreased over the past week. At Lower Granite and Little Goose dams, spill met the Court Order. At Lower Monumental Dam the Court Order calls for spill to the gas cap. Over the past week the COE increased gas cap spill from 22.7 Kcfs to 27.5 Kcfs. At Ice Harbor Dam the Fish Operations Plan (FOP) calls for the test-like schedule of 45 Kcfs spill during the day and gas cap spill at night, versus a constant 30% day and night. Spill at Ice Harbor has been provided in accordance with the FOP test-like schedule and the Court Order.

Spring spill for fish passage at the Lower Columbia projects began on April 10th.

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

At McNary dam spill exceeded the Court Order over the past week. At John Day Dam the COE implemented the test conditions of 30% versus 40%, and met or exceeded the spill levels. At The Dalles Dam spill was less than the Court Order for several days this past week due to TDG exceedance in the Bonneville forebay. At Bonneville Dam spill generally met, or exceeded the 100 Kcfs spill.

In the past week, most total dissolved gas (TDG) estimates were within a few tenths of the 115/120% TDG standards. Based on historic data collected since 1995 through the gas bubble trauma (GBT) monitoring program, we would not expect to see fish exhibit signs of GBT at the present TDG levels. Consistent with historic data, this past week one fish at McNary Dam (5/20) and one fish at Rock Island Dam (5/18) were sampled with minor signs of GBT.

Smolt Monitoring: Smolt monitoring is ongoing at all seven SMP dams (BON, JDA, MCN, RIS, LMN, LGS, and LGR). Collections at the Grande Ronde Trap were terminated on May 21st. Collections at the Imnaha Trap are ongoing.

Yearling Chinook dominated the bypass sampled at BON again this week. However, yearling Chinook passage decreased this week, when compared to last week. This week's daily average passage index for yearling Chinook at BON was nearly 43,500. Last week's daily average passage index was nearly 103,000 per day. Passage of subyearling Chinook continued to decrease this week. This week's daily average passage index for subyearling Chinook at BON was nearly 5,100 per day. Passage of steelhead also decreased this week. This week's daily average passage index for steelhead was about 9,750 per day. Last week's daily average passage index for steelhead was over 15,200 per day. Coho passage over the past week was very similar to last week's passage. The only salmonid species that saw increases in passage this week, when compared to last week, was sockeye. This week's daily

average passage index for sockeye was nearly 32,000 per day. Last week's daily average passage index for sockeye was about 8,400 per day. Sockeye continued to have elevated levels of descaling throughout much of this week. For the period of May 17th to May 23rd, descaling for sockeye was above 10% on four of the seven days and reached as high as 15.8% (May 19th). Operations of the BON second powerhouse have been variable this week, as some days had operations at or below the mid-range of the 1% efficiency curve while others had operations at the upper end of the 1% efficiency curve. These operations, and perhaps debris, may explain the variability in descaling levels from this week. Finally, no lamprey juveniles were collected at BON this week.

Yearling Chinook continued to dominate the bypass sample at JDA this week. This week's daily average passage index for yearling Chinook was just over 45,000 per day, which is a decrease over last week's daily average passage index of over 102,000 per day. Steelhead passage also decreased this week. This week's daily average passage index for steelhead at JDA was about 17,200 per day, compared to last week's daily average of nearly 27,000 per day. Passage numbers for coho this week were very similar to last week. This week's daily average passage index for coho was about 7,600 per day. Sockeye passage increased this week, when compared to last week. This week's daily average passage index for sockeye at JDA was nearly 26,500 per day. Last week's daily average passage index was only 12,500. Passage of subyearling Chinook also increased this week. Unlike previous weeks, the majority of subyearling Chinook in this week's sample were not fry. In fact, many were clipped, which means they were likely from earlier hatchery releases of subyearling fall Chinook in the Snake River. Finally, both pacific lamprey ammocoetes and macrophthalmia were sampled at JDA this week. Pacific lamprey ammocoetes were collected only on May 22nd, with an estimated collection of 100. Passage of pacific lamprey macrophthalmia increased this week, when compared to last week. The daily average collection for pacific lamprey macrophthalmia this week was about 4,700 per day. Last week's daily average collection was only about 225 per day.

Sampling at MCN for the 2013 season is every-other-day. This week's bypass samples were dominated by sockeye. This week's daily average passage index for sockeye was nearly 59,800 per day, which is a

slight increase over last week's daily average of just over 54,000 per day. Passage of yearling Chinook and steelhead decreased significantly this week, when compared to last week. This week's daily average passage indices for yearling Chinook and steelhead were about 54,000 and 7,400, respectively. Last week's daily average passage indices were over 207,000 for yearling Chinook and about 31,400 for steelhead. This week's passage numbers for subyearling Chinook and coho were very similar to last week's numbers. This week's daily average passage indices for subyearling Chinook and coho were about 1,550 and 5,325 per day, respectively. Pacific lamprey macrophthalmia continue to be the only species and life-stage of lamprey collected at MCN this season. This week's daily average collection for pacific lamprey macrophthalmia was nearly 8,000 per day, which represents a large increase over last week's daily average collection of about 460 per day. Finally, descaling at MCN has remained relatively high for much of this week, particularly for sockeye. This is likely due to increased debris loads in the forebay.

Steelhead dominated the bypass samples at LGR this week. This week's daily average passage index for steelhead was about 22,800 per day, which is a decrease over last week's daily average passage index of over 109,000 per day. Approximately 72% of the steelhead in the bypass sample this week were of known hatchery origin, which means that they either had clipped fins or had eroded fins, which is indicative of hatchery rearing practices. Yearling Chinook and coho passage also decreased at LGR this week, when compared to last week. This week's daily average passage indices for yearling Chinook and coho were about 10,000 and 1,000 per day, respectively. Last week's daily average passage indices were over 114,000 per day for yearling Chinook and about 6,300 per day for coho. Of the yearling Chinook that were collected at LGR this week, approximately 55% were of known hatchery origin, which means that they either had fin clips or were unclipped but had coded-wire tags. Subyearling Chinook passage increased this week. This week's daily average passage index for subyearling Chinook at LGR was nearly 2,800 per day. Last week's daily average passage index was about 2,010 per day. It appears that the large releases of subyearling fall Chinook above LGR that were scheduled for this week have not arrived at LGR in large numbers yet. Sockeye/kokanee passage was high in the beginning

of the week but has decreased since then. This week's daily average passage index was nearly 4,100 per day, compared to last week's daily average passage index of just over 3,500 per day. Both pacific lamprey ammocoetes and macrophthalmia were collected at LGR this week. Pacific lamprey ammocoetes were collected on May 22nd while macrophthalmia were sampled on May 17th, 18th, and 21st. Finally, due to the possible resampling of PIT-tagged research fish that are released into the gatewells, daily estimates of yearling Chinook and steelhead collection and passage indices may be inflated. The FPC is aware of this possible bias and is investigating ways to correct these inflated estimates after the research has ended. However, the magnitude of this bias is relatively low and is unlikely to skew estimates of timing for these two species.

This week's bypass samples at LGS were dominated by steelhead. The daily average passage index for steelhead this week was 28,500 per day, which is a significant decrease from last week's daily average passage index of nearly 123,000 per day. Yearling Chinook passage also decreased significantly this week, when compared to last week. This week's daily average passage index for yearling Chinook at LGS was 13,700 per day. Last week's daily average passage index was over 124,000 per day. Coho passage also decreased this week. Passage of subyearling Chinook and sockeye both increased this week. This week's daily average passage indices for subyearling Chinook and sockeye at LGS were 2,200 and 4,300 per day, respectively. Last week's daily average passage indices were only about 300 for subyearling Chinook and 160 for sockeye. Finally, both pacific lamprey ammocoetes and macrophthalmia were collected at LGS this week. Pacific lamprey ammocoetes were only collected on two days this week (May 18th and 21st). Pacific lamprey macrophthalmia were collected every day this week. This week's daily average collection for pacific lamprey macrophthalmia was about 3,950 per day, which was higher than last week's daily average collection of just over 3,100 per day.

At this time, data from LMN are available only through May 22nd. Over the past week, the bypass samples at LMN have been dominated by steelhead. This week's daily average passage index for steelhead was nearly 17,000 per day, which is a decrease from last week's daily average passage index of nearly 53,000 per day. Passage of yearling Chinook, coho, and subyearling Chinook also decreased this week,

when compared to last week. This week's daily average passage indices for these three species were about 8,300, 500, and 550 per day, respectively. Last week's daily average passage indices were 63,000 for yearling Chinook, 900 for coho, and 1,050 for subyearling Chinook. The only species of salmonid that had an increase in passage this week was sockeye. The daily average passage index for sockeye at LMN for this week was about 1,500 per day. Last week's daily average passage index for sockeye was only about 55 per day. Finally, only pacific lamprey macrophthalmia were collected at LMN this week. Overall, the daily average collection for pacific lamprey macrophthalmia at LMN this week was about 4,900 per day.

This week's collections at RIS were dominated by coho. This week's daily average passage index for coho at RIS was about 2,700 per day, which is an increase over last week's daily average passage index of about 1,650 per day. Yearling Chinook, steelhead, and sockeye passage all decreased this week, when compared to last week. This week's daily average passage indices for yearling Chinook, steelhead, and sockeye at RIS were about 890, 475, and 1,460 per day, respectively. Last week's daily average passage indices were about 1,300 for yearling Chinook, 830 for steelhead, and 1,650 for sockeye. Finally, subyearling Chinook passage decreased this week when compared to last week. As with previous weeks, the majority of subyearling Chinook collected at RIS this week were fry. Finally, one pacific lamprey ammocoete was collected on May 18th and one macrophthalmia was collected per day on May 17th and May 18th.

Due to the release of over 401,000 hatchery subyearling fall Chinook into the Grande Ronde River this week, sampling at the Grande Ronde Trap was terminated for the 2013 season after the sample on May 21st. Up through this time, passage of yearling Chinook and steelhead had decreased, when compared to the previous week. In fact, daily collections over the last five days of sampling were generally less than 25 fish for each of yearling Chinook and steelhead.

Due to increased flows and debris, sampling at the Salmon River Trap for 2013 was terminated on May 8th. With the expected release of over 2.0 million subyearling fall Chinook above the Snake River Trap beginning on May 17th, sampling at this trap was terminated on May 15th.

At this time, data from the Imnaha Trap are available only through May 20th. Steelhead dominated the collections at this trap during the period of May 16-20th. The daily average collection for steelhead during this time was about 560 per day. Yearling Chinook collections during this time averaged about 14 per day. Finally, no lamprey juveniles were collected at the Imnaha Trap during this May 16–20 period.

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. In all, just over 2.30 million subyearling fall Chinook juveniles were scheduled for release this week. Of these, about 61% were scheduled to be released directly into the Snake River. The remaining 39% were scheduled to be released into the Clearwater River (22%) and the Grande Ronde River (17%). Of the subyearling fall Chinook juveniles that were scheduled for release this week, approximately 30% were unmarked, which means that they will be indistinguishable from wild subyearling fall Chinook.

Approximately 725,000 subyearling fall Chinook juveniles are scheduled for release into the Clearwater River. Currently, this release is scheduled to begin on or around June 3rd. Of these, approximately 59% will be unmarked, which means that they will be indistinguishable from wild subyearling fall Chinook. There are no other new releases scheduled for this zone over the next two weeks.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. There were only two releases of anadromous salmonids scheduled for this zone this week. Both were releases of subyearling fall Chinook to the Yakima River. In all, these releases were expected to total about 204,000 subyearling fall Chinook. Approximately 90% of these subyearling fall Chinook were unclipped but tagged with coded-wire-tags. There are no new releases scheduled to begin in this zone over the next two weeks. However, there are several releases that began in past weeks that are scheduled to end over the next two weeks.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. No new releases were scheduled for this zone this week. There is only one new release scheduled for this zone over

the next two weeks. On or around June 1st, Klickitat Hatchery is scheduled to release about 3.8 million subyearling fall Chinook into the Klickitat River. Of these, approximately 60% are unmarked, which means they will be indistinguishable from wild subyearling fall Chinook.

Adult Fish Passage

Adult counts at Bonneville Dam have been updated through May 23rd. Daily adult spring Chinook counts at Bonneville Dam ranged from 782 to 1,280 adult salmon per day. As of May 23rd, a total of 76,423 spring Chinook have been counted at Bonneville Dam. In 2012, 146,148 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2013 adult spring Chinook count at Bonneville Dam is about 52.3% of the 2012 count and 58.3% of the of the 10-year average count of 130,969. The 2013 spring Chinook jack count of 31,178 is 4.7 times greater than the 2012 count of 6,665 and 1.8 times greater than the 10-year average count of 17,546. At Willamette Falls Dam 15,840 adult spring Chinook have been counted so far this year. In 2012, 17,635 adult spring Chinook were counted at Willamette. This year's count is 89.8% of the 2012 count and 55.2% of the 10-year average count of 28,666. As of May 23rd, a total of 60,479 adult spring Chinook have been counted at The Dalles Dam and 41,254 have been counted at McNary Dam. The Dalles Dam 2013 adult spring Chinook count is 58.8% of the 2012 count and 63.7% of the 10-year average count. The 2013 McNary Dam adult spring Chinook count is about 51.3% of the 2012 count and 60.3% of the 10-year average count.

The 2013 Bonneville Dam adult steelhead count of 3,112 is about 58.8% of the 2012 count of 5,291 and 59.3% of the 10-year average count of 5,249. The 2013 Bonneville Dam adult wild steelhead count of 844 is about 50.9% of the 2012 count of 1,657 and 64.3% of the 10-year average count of 1,312. 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 1 to 9 adults per day last week. This year's Lower Granite steelhead count of 7,424 is about 83.4% of the 2012 count of 8,897 and 77.2% of the 10-year average count of 9,616. The 2013 Lower Granite Dam adult wild steelhead count of 3,226 is about 82.4% of the 2012 count of 3,913, while having

36 more fish than the 10-year average count of 3,190. At Willamette Falls Dam, the 2013 count for steelhead was 9,113 as of May 22nd. This year's steelhead count is about 56.3% of the 2012 count of 16,170 and about 66.7% of the 10-year average count of 13,655.

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:	5/24/2013		to		6/6/2013				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2013	725,000	06-03-13	06-14-13	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe Total					725,000				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2013	1,000,000	05-20-13	05-24-13	Hells Canyon Dam	Snake River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2013	207,941	04-15-13	06-01-13	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife Total					1,207,941				
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2013	55,500	04-15-13	05-24-13	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2013	59,300	04-15-13	05-24-13	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service Total					114,800				
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2013	175	05-01-13	05-31-13	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2013	225	05-01-13	05-31-13	Above McNary Dam	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2013	4,500	05-01-13	05-31-13	Above McNary Dam	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2013	18,975	05-01-13	05-31-13	Yakama River	Yakima River
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2013	225	05-01-13	05-31-13	Methow River	Methow River
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2013	225	05-01-13	05-31-13	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2013	24,000	04-25-13	06-20-13	Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2013	484,000	05-15-13	05-31-13	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2013	140,000	05-15-13	05-25-13	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					672,325				
Yakama Tribe	Cascade Hatchery	CO	UN	2013	65,362	05-13-13	06-15-13	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2013	130,722	04-22-13	06-15-13	Nason Wetlands	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2013	130,867	04-15-13	06-15-13	Icicle Creek	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2013	306,946	04-15-13	06-15-13	Icicle Creek	Wenatchee River
Yakama Tribe	Eagle Creek NFH	CO	UN	2013	102,975	04-15-13	07-01-13	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2013	104,059	04-15-13	07-01-13	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2013	237,043	04-15-13	07-01-13	Easton Pond	Yakima River
Yakama Tribe	Klickitat Hatchery	CH0	FA	2013	3,800,000	06-01-13	06-01-13	Klickitat Hatchery	Klickitat River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2013	124,425	04-15-13	07-01-13	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2013	131,858	04-15-13	07-01-13	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2013	322,100	04-01-13	07-01-13	Prosser Acclim Pond	Yakima River
Yakama Tribe	Wells Hatchery	CH0	FA	2013	102,000	05-24-13	05-24-13	Roza Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2013	30,343	04-15-13	06-15-13	Icicle Creek	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2013	35,838	05-01-13	06-15-13	Methow River	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2013	40,957	04-22-13	06-15-13	Winthrop Hatchery	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2013	56,507	05-15-13	06-15-13	Coulter Creek	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2013	59,798	05-13-13	06-15-13	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2013	66,881	05-01-13	06-15-13	Biddle Pond	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2013	72,764	05-01-13	06-15-13	Twisp Acclim Pond	Methow River
Yakama Tribe	Willard Hatchery	CO	UN	2013	73,036	04-15-13	06-15-13	Icicle Creek	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2013	109,826	05-01-13	06-15-13	Wenatchee River	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2013	253,485	04-15-13	06-15-13	Winthrop Hatchery	Methow River
Yakama Tribe Total					6,357,792				
Grand Total					9,077,858				

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
05/10/2013	172.4	0.0	171.1	24.6	208.7	42.0	207.7	42.7	218.0	25.7	241.1	99.1	242.1	116.7
05/11/2013	147.0	0.0	150.5	22.9	188.9	35.5	190.6	34.5	205.5	52.1	217.0	79.6	225.4	84.3
05/12/2013	134.0	0.0	139.1	23.3	175.4	28.0	174.6	24.7	189.7	29.0	190.8	69.3	189.3	55.8
05/13/2013	138.4	0.0	132.2	22.5	167.6	25.9	173.3	20.2	190.0	35.3	207.0	76.0	209.0	82.2
05/14/2013	135.8	0.0	140.1	20.5	173.8	10.0	172.6	8.3	188.0	18.4	194.6	73.2	191.8	77.8
05/15/2013	141.9	0.0	137.1	21.1	172.4	11.1	176.7	31.9	187.9	19.9	202.1	71.3	204.0	66.8
05/16/2013	149.9	0.0	149.0	21.4	177.5	21.8	172.7	11.6	181.8	30.5	195.6	61.7	197.9	69.1
05/17/2013	161.0	0.0	162.5	21.5	196.0	40.6	194.3	40.9	199.7	40.5	217.9	80.5	217.0	85.4
05/18/2013	155.0	2.3	157.2	21.4	185.8	35.0	186.3	29.7	193.9	43.2	219.5	88.8	225.0	109.6
05/19/2013	176.1	13.3	176.8	21.2	204.2	43.7	203.6	34.1	207.0	47.0	222.0	95.8	223.8	106.2
05/20/2013	163.2	19.8	168.0	21.3	197.6	35.0	197.7	22.3	200.6	36.4	213.2	79.4	216.0	93.5
05/21/2013	173.4	20.0	174.7	21.4	197.3	31.3	196.1	22.0	202.2	20.4	206.5	84.1	206.7	86.1
05/22/2013	174.2	12.8	184.7	21.5	213.7	35.9	211.0	31.7	214.5	20.0	217.4	82.2	220.3	107.2
05/23/2013	167.4	2.9	167.5	21.1	193.4	20.0	193.8	29.7	201.3	20.0	223.6	81.5	222.9	104.9

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/10/2013	7.4	0.0	---	---	100.7	20.4	94.7	30.7	99.0	23.6	99.9	44.1
05/11/2013	5.5	0.0	---	---	108.5	20.3	101.9	31.4	106.0	23.8	107.3	42.7
05/12/2013	5.5	0.1	---	---	114.8	20.3	109.8	35.5	113.1	23.8	116.1	75.6
05/13/2013	5.4	0.0	---	---	125.9	24.6	120.3	39.7	120.7	26.3	123.4	71.7
05/14/2013	5.5	0.4	---	---	137.3	29.7	130.1	42.4	131.5	21.8	136.0	73.1
05/15/2013	5.4	0.0	---	---	132.7	24.4	127.8	38.9	131.0	22.8	135.2	66.3
05/16/2013	5.4	0.1	---	---	114.9	22.9	109.9	32.9	112.9	22.5	116.7	66.7
05/17/2013	5.4	0.0	---	---	101.2	20.6	98.1	29.4	100.4	22.7	102.4	66.5
05/18/2013	5.4	0.5	---	---	97.6	26.7	94.7	31.0	96.2	24.1	97.8	67.2
05/19/2013	5.4	0.0	---	---	88.7	24.8	85.1	27.6	88.5	23.9	89.8	63.0
05/20/2013	5.4	0.0	---	---	83.7	20.8	82.2	24.8	82.2	23.0	83.6	35.7
05/21/2013	5.4	0.0	---	---	75.4	20.6	74.4	22.4	76.4	25.6	75.4	22.9
05/22/2013	3.9	0.0	---	---	77.6	20.5	76.8	23.2	78.6	25.7	79.5	47.1
05/23/2013	3.9	0.0	---	---	77.4	20.5	74.2	22.3	76.3	27.5	76.9	55.6

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
05/10/2013	330.5	182.6	323.8	119.0	305.5	112.0	305.3	105.6	85.1	102.2
05/11/2013	353.7	205.8	353.5	135.7	338.3	119.6	347.7	140.5	84.9	110.0
05/12/2013	334.0	186.6	345.3	137.7	326.7	105.7	348.2	142.8	85.1	107.9
05/13/2013	330.0	182.0	318.3	132.6	301.2	104.5	335.3	129.7	84.7	108.4
05/14/2013	341.4	187.4	344.3	140.0	325.6	130.7	338.7	143.6	79.5	103.2
05/15/2013	342.8	188.9	342.5	139.9	326.4	125.7	351.9	145.8	90.5	103.2
05/16/2013	328.3	171.3	340.4	137.5	322.7	111.4	344.3	136.7	98.8	96.4
05/17/2013	311.9	158.4	303.8	135.7	286.0	111.3	309.2	106.5	95.5	94.8
05/18/2013	333.1	174.7	333.8	133.7	318.9	114.2	328.9	120.0	98.0	98.6
05/19/2013	318.6	167.4	326.5	131.5	306.0	117.0	328.9	120.0	98.9	97.6
05/20/2013	313.4	173.1	312.5	143.6	294.2	117.0	317.3	110.0	97.7	97.2
05/21/2013	286.6	158.5	283.3	139.8	270.4	108.9	300.5	99.4	92.7	95.9
05/22/2013	283.2	170.9	287.7	94.4	264.2	105.3	279.0	98.6	82.7	85.4
05/23/2013	316.2	160.0	313.6	104.1	296.9	118.9	316.2	103.3	101.1	99.4

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											
	05/14/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/21/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	05/13/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/20/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	05/15/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/22/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	05/10/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/12/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/16/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/20/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam											
	05/11/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/14/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/18/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/21/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	05/11/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/17/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/18/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/21/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/23/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	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 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		
5/10	---	---	---	0	---	---	---	0	110.4	110.7	111.1	24	107.0	107.6	108.0	24	108.4	108.6	108.8	24
5/11	---	---	---	0	---	---	---	0	110.8	111.5	112.1	24	107.2	107.6	107.9	24	108.6	108.9	109.2	24
5/12	---	---	---	0	---	---	---	0	110.7	110.9	111.2	24	107.2	107.6	108.0	24	108.9	109.1	109.2	24
5/13	---	---	---	0	---	---	---	0	110.5	110.8	111.0	24	107.4	107.8	108.3	24	108.7	109.0	109.3	24
5/14	---	---	---	0	---	---	---	0	109.1	109.3	109.5	24	105.9	106.3	106.6	24	108.1	108.6	109.0	24
5/15	---	---	---	0	---	---	---	0	110.3	110.7	111.0	24	106.4	106.4	106.4	9	107.9	108.3	108.6	24
5/16	---	---	---	0	---	---	---	0	110.0	110.2	110.5	24	107.7	108.0	108.3	23	108.3	108.6	108.8	24
5/17	---	---	---	0	---	---	---	0	110.5	110.8	111.1	24	107.7	107.9	108.1	24	108.6	108.8	109.0	24
5/18	---	---	---	0	---	---	---	0	109.9	110.1	110.2	24	107.0	107.2	107.3	24	107.8	108.1	108.2	24
5/19	---	---	---	0	---	---	---	0	109.5	109.6	109.7	24	107.3	107.8	108.6	24	107.3	107.5	107.7	24
5/20	---	---	---	0	---	---	---	0	110.2	110.9	111.8	24	108.4	109.6	110.8	24	107.9	108.5	109.2	24
5/21	---	---	---	0	---	---	---	0	112.1	112.5	112.9	24	110.2	110.6	112.5	24	110.2	110.6	111.0	24
5/22	---	---	---	0	---	---	---	0	110.5	110.7	111.2	24	108.9	109.4	109.7	24	110.6	111.0	111.3	24
5/23	---	---	---	0	---	---	---	0	110.6	111.1	111.7	23	107.0	107.3	107.5	23	109.5	109.7	109.9	23

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		
5/10	110.6	110.8	111.1	24	108.3	108.6	108.9	21	114.4	115.3	115.9	21	110.2	111.2	111.6	24	118.4	118.8	119.9	24
5/11	110.4	110.6	110.9	24	108.7	108.9	109.0	19	115.0	117.5	121.4	19	113.5	114.1	114.4	24	118.6	120.5	122.2	24
5/12	110.5	110.7	110.8	24	108.4	108.7	109.1	23	112.4	113.2	116.2	23	115.9	118.0	118.7	24	118.6	120.2	121.5	24
5/13	110.1	110.6	111.1	24	107.6	108.0	108.3	21	112.7	115.4	118.5	21	110.9	111.4	111.9	24	115.1	118.4	119.0	24
5/14	109.4	109.7	110.1	24	106.6	107.0	107.2	21	108.6	109.0	109.3	21	111.7	113.1	114.1	24	113.7	115.3	115.9	24
5/15	110.0	110.2	110.6	24	107.8	108.2	108.7	21	109.8	110.2	110.7	21	108.5	108.8	108.9	24	115.6	119.2	122.7	24
5/16	110.0	110.2	110.4	24	108.1	108.2	108.6	21	111.8	112.9	114.2	21	109.2	109.7	109.9	24	112.7	115.2	116.5	24
5/17	110.1	110.3	110.6	24	108.1	108.3	108.9	24	113.9	114.4	115.7	24	110.6	111.5	112.2	24	117.8	118.5	119.0	24
5/18	109.9	110.1	110.2	24	107.5	107.8	108.1	21	113.0	114.9	116.8	21	111.9	112.3	112.4	24	117.8	118.0	118.9	24
5/19	109.6	109.8	110.0	24	106.9	107.1	107.4	22	113.5	114.3	115.0	22	111.8	112.7	113.4	24	118.4	118.7	119.3	24
5/20	109.9	110.1	110.3	24	107.5	108.0	108.7	23	113.1	113.6	114.3	23	112.9	113.2	113.4	24	117.6	119.1	119.4	24
5/21	110.2	110.3	110.4	24	108.3	108.5	108.9	18	113.3	113.8	114.5	17	113.6	114.4	114.9	24	118.2	118.6	119.1	24
5/22	110.3	110.5	110.6	24	107.7	107.8	108.0	18	112.6	112.8	113.4	19	111.5	112.1	112.4	24	118.4	118.9	119.0	24
5/23	110.0	110.2	110.4	23	108.0	108.2	108.4	21	111.2	112.2	113.0	21	111.3	111.5	111.9	23	118.1	118.4	118.9	23

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			#	<u>Rock I. Tlwr</u>			#	<u>Wanapum</u>			#	<u>Wanapum Tlwr</u>			#	<u>Priest Rapids</u>			#
	<u>24 h</u>	<u>12 h</u>	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		
5/10	111.5	112.3	113.0	24	114.2	115.0	115.8	24	112.3	112.9	113.3	24	116.5	117.7	118.9	24	114.4	116.1	118.2	24
5/11	114.2	115.6	117.0	24	119.7	121.9	123.1	24	113.5	114.5	115.1	24	115.9	116.8	117.3	24	116.1	116.9	118.1	24
5/12	114.2	116.4	117.4	24	117.4	119.3	120.1	24	115.2	116.3	117.0	24	116.1	116.8	117.9	24	115.7	117.1	117.7	24
5/13	111.6	112.4	113.5	24	117.1	119.5	120.5	24	115.6	116.6	117.2	24	116.4	117.8	119.1	24	115.1	116.1	117.3	24
5/14	110.4	112.4	113.9	24	112.8	114.3	115.4	24	114.0	114.3	114.6	24	115.8	116.8	117.5	24	113.0	114.0	115.4	24
5/15	110.7	112.5	114.1	24	113.2	114.8	116.4	24	113.8	114.1	114.3	24	115.0	116.4	118.3	24	115.5	116.1	116.9	24
5/16	108.6	109.8	110.8	24	113.1	113.9	114.9	24	113.9	115.0	115.7	24	113.5	113.6	113.8	24	112.6	113.5	113.9	24
5/17	111.2	113.2	114.1	24	115.6	117.3	117.9	24	113.6	113.9	114.3	24	115.3	116.1	116.6	24	112.9	113.6	114.4	24
5/18	112.0	112.7	113.4	24	116.5	116.9	117.3	24	111.1	111.4	112.4	24	116.2	117.3	119.3	24	114.1	115.2	117.1	24
5/19	112.0	112.8	114.1	24	117.7	119.4	120.5	24	111.5	112.1	112.3	24	117.6	118.3	120.0	24	114.0	116.4	117.5	24
5/20	113.3	114.3	114.7	24	116.5	117.2	117.9	24	114.1	116.0	117.2	24	116.6	117.2	118.2	24	116.0	117.2	117.6	24
5/21	112.9	113.4	113.7	24	114.9	115.3	115.7	24	116.3	116.7	117.0	24	118.1	118.8	119.7	24	116.0	116.7	117.2	24
5/22	111.8	112.1	112.4	24	113.9	114.3	114.7	24	113.7	114.5	115.4	24	116.2	116.8	117.5	24	114.2	114.6	115.0	24
5/23	112.0	112.4	112.7	23	114.1	114.5	114.9	23	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clwrtr-Peck</u>			<u>Anatone</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
5/10	119.0	119.8	120.7	24	---	---	---	0	95.9	96.3	96.7	24	102.3	103.5	104.1	24	104.9	105.8	106.5	24
5/11	118.8	119.5	120.4	24	---	---	---	0	96.3	96.8	97.3	24	103.1	104.2	104.7	24	105.5	106.4	107.0	24
5/12	117.3	117.8	118.6	24	---	---	---	0	96.9	97.9	102.0	24	103.4	104.3	104.9	24	105.9	106.6	107.2	24
5/13	117.4	118.0	118.8	24	---	---	---	0	96.4	96.9	97.6	24	103.4	104.1	104.9	24	105.8	106.3	107.1	24
5/14	116.0	117.1	117.8	24	---	---	---	0	98.5	101.0	106.2	24	103.9	104.8	105.4	24	106.4	107.4	108.0	24
5/15	117.0	117.2	117.6	24	---	---	---	0	96.5	97.3	97.8	24	103.0	103.7	104.2	24	107.2	107.9	108.5	24
5/16	116.5	117.1	117.7	24	---	---	---	0	98.2	99.4	106.9	24	102.5	103.0	103.5	24	106.7	107.1	107.8	24
5/17	117.1	117.5	117.7	24	---	---	---	0	97.6	98.3	98.8	24	102.0	102.6	103.1	24	106.2	106.8	107.2	24
5/18	118.3	118.6	119.1	24	---	---	---	0	100.5	103.9	108.8	24	101.6	102.1	102.8	24	105.6	106.0	106.6	24
5/19	118.1	119.1	120.0	24	---	---	---	0	96.5	96.5	96.8	10	101.0	101.6	102.1	24	105.4	105.9	106.4	24
5/20	118.9	119.3	119.8	24	---	---	---	0	97.0	97.1	97.5	16	101.6	102.8	103.4	24	106.1	107.1	107.9	24
5/21	119.1	119.4	119.6	24	---	---	---	0	97.5	98.0	98.5	24	101.2	101.6	102.0	24	105.3	105.9	106.5	24
5/22	118.4	118.7	119.0	24	---	---	---	0	97.3	97.8	98.3	24	100.3	100.3	100.7	8	104.1	104.6	105.2	24
5/23	---	---	---	0	---	---	---	0	97.2	97.4	98.6	17	---	---	---	0	104.7	105.7	106.5	23

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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
5/10	101.9	102.7	103.3	24	103.8	104.0	104.5	24	110.2	110.5	111.0	24	114.7	115.2	116.1	24	114.8	115.2	115.7	24
5/11	102.4	103.1	103.6	24	104.3	104.6	104.9	24	110.6	110.8	111.1	24	113.5	114.1	114.8	24	114.7	115.3	116.3	24
5/12	102.7	103.3	104.0	24	105.2	105.3	105.6	24	110.4	110.6	111.1	24	111.3	112.1	112.8	24	115.3	115.6	115.8	24
5/13	102.4	102.8	103.3	24	105.3	105.5	105.7	24	111.9	113.4	114.3	24	109.6	110.2	110.9	24	116.3	117.8	118.9	24
5/14	102.7	103.6	104.0	24	104.6	104.7	105.1	24	114.3	115.4	116.0	24	107.7	108.0	108.6	24	116.0	117.4	118.6	24
5/15	102.3	102.7	103.1	24	104.9	105.4	106.0	24	112.4	113.6	115.3	24	108.9	109.7	110.0	24	115.7	116.5	118.6	24
5/16	102.0	102.5	103.0	24	106.0	106.2	106.5	24	111.4	112.4	116.9	24	109.9	110.5	110.8	24	114.7	115.0	115.1	24
5/17	101.8	102.5	103.0	24	105.9	106.1	106.2	24	111.2	111.3	112.0	24	109.4	109.7	109.9	24	113.2	113.3	113.7	24
5/18	101.1	101.7	102.3	24	104.8	105.2	105.5	24	112.7	114.8	116.7	24	108.1	108.4	108.7	24	113.3	113.9	114.5	24
5/19	100.9	101.7	102.1	24	103.8	103.9	104.0	24	111.9	113.1	116.4	24	107.0	107.3	107.8	24	112.0	112.6	114.4	24
5/20	102.0	103.4	104.2	24	104.2	104.9	105.5	24	111.1	111.6	112.4	24	109.5	110.9	111.4	24	113.3	114.9	122.2	24
5/21	101.4	102.2	103.0	24	106.0	106.2	106.4	24	111.5	111.9	112.3	24	111.4	111.7	111.9	24	113.7	114.0	114.6	24
5/22	100.2	100.9	101.8	24	105.2	105.4	106.0	24	111.4	111.8	112.2	24	109.8	110.4	111.2	24	113.1	113.5	113.8	24
5/23	100.7	101.3	103.3	17	103.9	104.5	105.1	23	111.2	111.6	111.9	23	108.3	108.5	108.7	23	113.3	113.7	114.2	23

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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
5/10	114.9	115.3	115.8	24	115.4	115.9	116.5	24	117.9	118.2	118.7	24	117.6	117.9	118.2	24	---	---	---	0
5/11	117.0	117.8	118.3	24	116.4	117.2	118.3	24	117.6	118.0	118.5	24	117.6	117.9	118.8	24	---	---	---	0
5/12	117.2	117.7	118.4	24	116.2	116.8	117.2	24	118.1	118.5	118.7	24	119.6	120.2	120.4	24	---	---	---	0
5/13	116.0	116.5	117.0	24	116.9	118.2	120.3	24	117.2	117.6	118.1	24	119.4	120.4	121.3	24	---	---	---	0
5/14	114.2	114.9	116.4	24	118.0	119.1	120.6	24	115.1	115.4	115.8	24	120.4	121.0	121.3	24	---	---	---	0
5/15	116.4	116.8	117.0	24	118.6	119.4	121.0	24	115.5	115.8	116.1	24	119.8	120.9	121.6	24	---	---	---	0
5/16	116.9	117.1	117.3	24	116.5	117.8	118.4	24	116.3	116.5	116.8	24	119.0	119.9	120.2	24	---	---	---	0
5/17	114.9	115.0	115.4	24	116.0	116.9	117.5	24	116.0	116.3	116.6	24	118.4	119.6	120.1	24	---	---	---	0
5/18	113.6	114.0	114.4	24	115.5	116.5	116.9	24	113.6	114.2	115.0	24	117.7	118.6	119.6	24	---	---	---	0
5/19	111.3	111.5	112.1	24	114.0	114.5	115.9	24	111.9	112.1	112.5	24	116.8	117.4	118.3	24	---	---	---	0
5/20	112.5	113.1	114.0	24	115.4	117.0	119.5	24	113.0	113.9	114.7	23	115.6	115.9	116.2	24	---	---	---	0
5/21	114.5	114.9	115.1	24	118.7	119.2	119.7	24	114.9	115.2	115.4	24	115.2	115.5	116.1	24	---	---	---	0
5/22	112.7	113.2	113.5	24	118.2	118.6	118.7	24	112.6	113.1	113.9	24	115.4	116.0	116.1	24	---	---	---	0
5/23	111.2	111.4	111.9	23	118.6	119.1	119.3	23	111.1	111.3	111.6	23	116.0	116.2	116.3	23	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			#	<u>McNary Tlwr</u>			#	<u>John Day</u>			#	<u>John Day Tlwr</u>			#	<u>The Dalles</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/10	113.7	114.7	115.6	24	118.1	118.6	119.8	24	113.8	114.1	114.3	24	117.8	118.6	118.9	24	114.2	114.8	115.5	24
5/11	115.0	115.9	117.1	24	119.8	120.0	120.6	24	113.9	114.5	115.0	24	119.0	119.3	119.7	24	115.1	116.1	116.7	24
5/12	115.9	116.3	116.7	24	120.2	120.4	120.7	24	115.2	115.5	115.8	24	118.9	119.3	119.6	24	115.0	115.5	115.7	24
5/13	115.3	115.9	116.7	24	119.1	119.2	119.5	24	115.3	115.6	115.9	24	118.4	118.6	118.8	24	114.2	114.6	114.9	24
5/14	112.6	113.1	113.8	24	119.6	119.8	120.0	24	114.8	115.2	115.5	24	118.6	118.7	119.0	24	114.4	115.5	116.0	24
5/15	114.3	115.4	116.0	24	119.6	119.9	120.6	24	114.5	114.8	115.0	24	118.5	118.7	119.1	24	114.8	115.0	115.3	24
5/16	115.0	115.6	116.3	24	119.5	119.6	120.2	24	113.0	113.1	113.3	24	118.5	118.7	119.1	24	114.6	115.2	115.8	24
5/17	114.0	114.4	115.1	24	118.4	118.8	119.4	24	113.2	113.5	114.0	24	118.0	118.1	118.4	24	112.3	112.9	113.6	24
5/18	111.6	112.2	112.9	24	118.3	118.5	118.8	24	111.4	111.7	112.3	24	117.8	118.0	118.2	24	112.9	112.9	113.2	11
5/19	110.1	110.8	111.4	24	118.4	118.5	118.7	24	109.7	110.0	110.3	24	117.7	117.9	118.3	24	---	---	---	0
5/20	113.1	114.8	116.6	24	118.6	119.0	119.8	24	109.8	110.5	111.1	24	118.6	119.1	119.9	24	115.0	115.5	116.9	14
5/21	115.2	115.7	116.3	24	118.3	119.0	120.0	24	110.8	111.1	111.4	24	118.7	119.2	119.5	24	113.9	115.1	117.0	24
5/22	111.2	112.4	113.5	24	118.5	118.9	119.4	24	110.0	110.3	110.8	24	116.4	117.0	118.5	24	111.7	112.0	112.5	24
5/23	108.6	109.1	110.0	23	117.8	118.0	119.2	23	110.6	111.1	111.4	23	117.1	117.8	119.0	23	111.3	111.7	112.0	23

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>Camas/Washougal</u>			#	<u>Cascade Island</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/10	118.3	118.7	118.9	24	114.6	115.4	115.6	24	115.3	116.1	116.5	24	113.5	115.1	115.8	24	119.4	120.1	120.5	24
5/11	118.5	118.8	119.2	24	116.8	117.3	117.7	24	118.2	119.1	119.3	24	116.2	117.9	118.5	24	122.7	123.7	123.8	24
5/12	117.6	118.2	118.6	24	117.1	117.7	118.0	24	118.8	119.2	119.4	24	117.7	118.3	118.5	24	122.8	123.7	123.9	24
5/13	117.3	117.6	118.1	24	114.7	115.1	115.9	24	116.5	116.9	117.4	24	115.5	116.6	117.8	24	120.5	120.7	120.8	24
5/14	118.9	120.0	120.2	24	114.2	115.0	115.5	24	117.0	118.0	118.8	24	114.9	116.4	116.8	24	121.3	122.5	123.1	24
5/15	119.2	119.9	120.4	24	116.8	117.4	117.5	24	118.4	118.6	118.9	24	116.7	117.4	117.8	24	122.0	122.4	122.9	24
5/16	118.0	118.2	118.4	24	117.5	117.8	118.4	24	118.4	118.7	119.0	24	117.5	117.9	118.7	24	119.1	119.9	121.9	24
5/17	117.3	117.7	118.2	24	115.2	116.0	116.7	24	115.9	116.7	117.6	24	116.3	116.9	117.2	24	116.6	120.1	122.7	24
5/18	116.7	117.0	117.3	24	113.5	113.7	113.9	24	115.0	115.1	115.3	24	113.6	113.9	114.2	24	120.5	120.5	120.7	24
5/19	116.6	116.9	117.4	24	113.1	113.3	113.6	24	114.8	115.0	115.2	24	113.6	114.0	114.4	24	119.8	120.3	120.4	24
5/20	118.0	119.5	120.5	24	114.9	116.1	117.2	24	115.8	116.3	116.7	24	115.0	116.5	117.3	24	120.4	120.5	120.7	24
5/21	118.8	119.6	120.5	24	115.6	116.7	117.2	24	115.8	116.4	116.9	24	114.2	114.8	115.4	24	120.0	120.5	120.6	24
5/22	117.5	117.9	118.2	24	112.7	113.1	113.7	24	114.2	114.5	115.0	24	111.2	111.5	111.7	24	118.7	118.8	119.1	24
5/23	117.2	117.4	117.8	23	114.4	115.2	115.7	23	115.3	115.8	116.0	23	112.0	112.8	113.9	23	119.9	120.5	120.8	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 5/24/2013 12:39

Two-Week Summary of Passage Indices

* One or more of the sites on this date had an incomplete or biased sample.

See Sampling Comments: <http://www.fpc.org/currentDaily/smpcomments.htm>For clip information see: <http://www.fpc.org/CurrentDaily/catch.htm>For sockeye and yearling chinook (Snake only) race information see: <http://www.fpc.org/smoltqueries/currentsmpsubmitdata.asp>

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)
05/10/2013 *	---	27	524	251	158,575	298,596	47,177	1,369	---	85,196	46,548
05/11/2013 *	---	12	375	260	157,615	157,763	69,001	1,759	225,944	114,528	83,158
05/12/2013 *	---	---	197	241	128,043	110,002	68,581	1,348	---	119,235	120,829
05/13/2013 *	---	---	256	84	125,795	86,399	60,337	1,239	252,596	117,613	115,881
05/14/2013 *	---	---	181	---	113,204	118,078	79,742	1,035	---	110,977	138,811
05/15/2013 *	---	---	128	199	76,059	66,076	74,807	1,063	143,754	79,746	103,767
05/16/2013 *	---	10	56	---	39,748	33,642	43,009	1,395	---	90,111	111,555
05/17/2013 *	---	12	25	---	23,648	23,530	20,924	1,468	79,452	75,838	87,600
05/18/2013 *	---	12	17	---	9,472	20,378	9,317	1,009	---	61,340	57,451
05/19/2013 *	---	16	22	---	12,532	15,506	8,625	877	57,259	61,711	45,067
05/20/2013 *	---	20	12	---	8,258	16,955	4,634	1,091	---	39,037	34,787
05/21/2013	---	---	13	---	6,316	7,948	2,339	846	52,065	30,953	40,089
05/22/2013 *	---	---	---	---	4,533	5,603	4,085	451	---	22,528	25,446
05/23/2013	---	---	---	---	4,702	6,112	---	470	27,414	24,970	13,735
05/24/2013	---	---	---	---	---	---	---	---	---	---	---
Total:	0	109	1,806	1,035	868,500	966,588	492,578	15,420	838,484	1,033,783	1,024,724
# Days:	0	7	12	5	14	14	13	14	7	14	14
Average:	0	16	151	207	62,036	69,042	37,891	1,101	119,783	73,842	73,195
YTD	50,632	55,129	26,301	2,797	2,586,590	1,478,317	600,759	23,372	1,856,481	1,831,324	1,735,138

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)
05/10/2013 *	---	1	22	1,403	0	298	0	60	---	0	14,180
05/11/2013 *	---	6	10	515	0	0	903	38	935	0	6,064
05/12/2013 *	---	---	8	456	245	0	639	17	---	0	8,731
05/13/2013 *	---	---	9	139	970	0	1,634	42	894	0	8,034
05/14/2013 *	---	---	6	---	2,013	905	994	42	---	0	5,733
05/15/2013 *	---	---	3	23	6,122	0	2,411	104	3,108	0	10,473
05/16/2013 *	---	4	5	---	4,720	847	750	91	---	0	8,427
05/17/2013 *	---	0	13	---	1,478	0	893	18	2,127	0	6,362
05/18/2013 *	---	0	0	---	2,977	590	266	63	---	257	5,682
05/19/2013 *	---	0	6	---	3,269	4,174	270	43	1,280	1,448	6,092
05/20/2013 *	---	0	0	---	2,032	1,724	545	50	---	959	4,638
05/21/2013	---	---	1	---	2,687	2,875	585	22	854	808	5,859
05/22/2013 *	---	---	---	---	3,316	2,586	771	7	---	1,348	2,339
05/23/2013	---	---	---	---	3,680	3,523	---	5	1,923	1,141	4,682
05/24/2013	---	---	---	---	---	---	---	---	---	---	---
Total:	0	11	83	2,536	33,509	17,522	10,661	602	11,121	5,961	97,296
# Days:	0	7	12	5	14	14	13	14	7	14	14
Average:	0	2	7	507	2,394	1,252	820	43	1,589	426	6,950
YTD	2	41	195	2,668	36,438	17,811	10,679	1,280	20,367	6,546	2,009,117

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)	
05/10/2013	*	---	0	0	36	2,764	4,772	925	2,007	---	3,586	24,353
05/11/2013	*	---	0	0	9	2,248	2,304	645	1,943	4,652	7,979	26,564
05/12/2013	*	---	---	0	8	4,170	3,567	639	1,453	---	6,972	18,258
05/13/2013	*	---	---	0	3	9,453	3,820	377	1,509	7,155	8,299	15,142
05/14/2013	*	---	---	0	---	11,824	7,846	2,733	1,238	---	11,864	25,348
05/15/2013	*	---	---	0	3	8,928	3,885	964	1,377	3,996	9,154	22,214
05/16/2013	*	---	0	0	---	4,720	1,977	0	1,966	---	8,015	29,250
05/17/2013	*	---	0	0	---	1,478	4,015	638	2,776	5,103	5,834	25,936
05/18/2013	*	---	0	0	---	1,353	5,903	799	1,559	---	5,133	25,569
05/19/2013	*	---	0	0	---	1,090	2,981	809	4,420	7,679	8,196	26,235
05/20/2013	*	---	0	0	---	1,901	1,437	136	4,330	---	5,748	22,860
05/21/2013	*	---	---	0	---	470	1,148	0	2,221	4,673	7,806	22,511
05/22/2013	*	---	---	---	---	414	790	692	1,219	---	7,702	20,488
05/23/2013	*	---	---	---	---	273	935	---	2,432	3,846	12,699	11,550
05/24/2013	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	59	51,086	45,380	9,357	30,450	37,104	108,987	316,278
# Days:		0	7	12	5	14	14	13	14	7	14	14
Average:		0	0	0	12	3,649	3,241	720	2,175	5,301	7,785	22,591
YTD		0	0	0	107	60,332	50,260	9,505	31,579	49,493	135,082	614,195

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)	
05/10/2013	*	---	1,890	298	916	66,094	114,526	34,226	723	---	26,457	14,180
05/11/2013	*	---	1,258	253	333	99,415	94,488	57,780	800	47,025	31,683	10,395
05/12/2013	*	---	---	132	345	115,533	157,831	48,275	975	---	30,680	13,001
05/13/2013	*	---	---	188	170	159,485	109,605	44,750	1,206	27,733	30,825	19,159
05/14/2013	*	---	---	138	---	120,751	232,455	88,933	873	---	22,245	25,952
05/15/2013	*	---	---	86	326	123,042	87,269	65,644	716	19,541	22,406	18,288
05/16/2013	*	---	559	26	---	81,484	62,409	30,256	497	---	23,073	5,456
05/17/2013	*	---	648	17	---	53,209	57,939	26,666	525	10,639	25,523	8,811
05/18/2013	*	---	602	14	---	35,451	44,571	23,027	462	---	18,736	17,046
05/19/2013	*	---	610	23	---	19,887	36,371	18,058	553	6,399	23,141	8,417
05/20/2013	*	---	391	7	---	14,681	23,277	10,767	531	---	14,370	10,933
05/21/2013	*	---	---	22	---	16,528	14,160	9,650	489	7,672	16,418	11,718
05/22/2013	*	---	---	---	---	12,183	12,714	13,586	304	---	13,093	5,052
05/23/2013	*	---	---	---	---	7,837	10,785	---	453	4,807	9,132	6,243
05/24/2013	*	---	---	---	---	---	---	---	---	---	---	---
Total:		0	5,958	1,204	2,090	925,580	1,058,400	471,618	9,107	123,816	307,782	174,651
# Days:		0	7	12	5	14	14	13	14	7	14	14
Average:		0	851	100	418	66,113	75,600	36,278	651	17,688	21,984	12,475
YTD		3,789	36,552	3,547	9,925	1,961,714	1,622,179	574,613	10,898	429,123	671,822	409,118

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/10/2013 *	---	0	0	1	0	0	132	391	---	6,502	2,158
05/11/2013 *	---	0	0	1	0	0	0	825	26,990	4,928	4,909
05/12/2013 *	---	---	0	2	0	0	0	1,091	---	6,741	4,684
05/13/2013 *	---	---	0	2	0	0	0	1,709	71,088	16,599	6,180
05/14/2013 *	---	---	0	---	0	302	0	1,982	---	10,628	8,449
05/15/2013 *	---	---	0	320	5,357	0	0	2,335	63,990	18,310	15,182
05/16/2013 *	---	0	0	---	19,377	847	250	3,256	---	23,803	17,353
05/17/2013 *	---	0	0	---	10,839	7,170	255	2,510	74,438	35,245	35,727
05/18/2013 *	---	0	0	---	7,848	5,313	2,795	2,859	---	34,392	32,198
05/19/2013 *	---	0	0	---	6,538	9,838	1,887	2,185	68,337	31,339	37,469
05/20/2013 *	---	0	0	---	1,704	4,023	1,908	1,523	---	31,134	33,130
05/21/2013	---	---	0	---	806	1,292	292	536	62,570	13,997	32,996
05/22/2013 *	---	---	---	---	622	1,006	1,998	250	---	19,255	34,053
05/23/2013	---	---	---	---	136	1,294	---	376	33,664	19,833	17,481
05/24/2013	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	326	53,227	31,085	9,517	21,828	401,077	272,706	281,969
# Days:	0	7	12	5	14	14	13	14	7	14	14
Average:	0	0	0	65	3,802	2,220	732	1,559	57,297	19,479	20,141
YTD	1	0	0	326	53,871	31,085	9,520	24,117	563,153	312,437	300,328

COMBINED LAMPREY JUVENILES											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR† (Coll)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
05/10/2013 *	---	0	0	0	0	0	0	7	---	0	0
05/11/2013 *	---	0	0	0	0	0	0	4	0	143	100
05/12/2013 *	---	---	0	0	0	0	0	8	---	0	0
05/13/2013 *	---	---	0	0	400	0	100	9	800	143	0
05/14/2013 *	---	---	0	---	1,000	1,200	200	2	---	143	0
05/15/2013 *	---	---	0	0	1,200	6,400	6,200	2	600	571	0
05/16/2013 *	---	0	0	---	800	14,200	23,000	4	---	571	0
05/17/2013 *	---	0	0	---	400	17,200	6,400	1	1,800	1,429	0
05/18/2013 *	---	0	0	---	200	5,600	7,200	2	---	1,286	0
05/19/2013 *	---	0	0	---	0	3,002	3,900	0	6,400	5,143	0
05/20/2013 *	---	0	0	---	0	1,400	5,800	0	---	4,143	0
05/21/2013	---	---	0	---	50	501	4,200	0	9,600	4,429	0
05/22/2013 *	---	---	---	---	50	50	2,000	0	---	9,400	0
05/23/2013	---	---	---	---	0	200	---	0	14,000	7,200	0
05/24/2013	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	4,100	49,753	59,000	39	33,200	34,601	100
# Days:	0	7	12	5	14	14	13	14	7	14	14
Average:	0	0	0	0	293	3,554	4,538	3	4,743	2,472	7
YTD	0	8	0	0	4,842	50,366	59,060	79	40,810	65,193	2,812

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.

†† Passage index for yearling Chinook and steelhead at LGR may be inflated in 2013 due to possible resampling of PIT-tagged research fish

† 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.

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.

Fall (post SMP season) trapping at the Imnaha River Fish Trap (IMN) is funded by the Lower Snake River Compensation Program (LSRCP)

WTB and LEW data collected for the FPC by Idaho Dept. of Fish and Game.

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

5/24/13 12:41 PM

05/10/13 TO 05/24/13

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	25,650	695,363	40,700	738,137	41,650	1,541,500
	Sum of NumberBarged	25,586	683,152	40,644	724,891	41,635	1,515,908
	Sum of NumberBypassed	21	10,590	0	13,022	2	23,635
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	3	31	0	12	0	46
	Sum of FacilityMorts	40	1,574	56	206	13	1,889
	Sum of ResearchMorts	0	16	0	6	0	22
	Sum of TotalProjectMorts	43	1,621	56	224	13	1,957
LGS	Sum of NumberCollected	12,053	655,012	30,800	717,289	21,300	1,436,454
	Sum of NumberBarged	12,044	654,527	30,800	717,204	21,300	1,435,875
	Sum of NumberBypassed	9	0	0	0	0	9
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	7	0	2	0	9
	Sum of FacilityMorts	0	478	0	83	0	561
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	485	0	85	0	570
LMN	Sum of NumberCollected	8,302	389,008	7,250	369,290	6,900	780,750
	Sum of NumberBarged	7,884	388,520	7,250	368,997	6,896	779,547
	Sum of NumberBypassed	10	58	0	140	0	208
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	9	0	4	0	13
	Sum of FacilityMorts	10	421	0	149	4	584
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	10	430	0	153	4	597
MCN	Sum of NumberCollected	5,005	375,059	16,802	55,047	182,761	634,674
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	5,001	374,528	16,800	55,041	182,589	633,959
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	24	0	0	14	38
	Sum of FacilityMorts	4	507	2	6	158	677
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	4	531	2	6	172	715
Total Sum of NumberCollected		51,010	2,114,442	95,552	1,879,763	252,611	4,393,378
Total Sum of NumberBarged		45,514	1,726,199	78,694	1,811,092	69,831	3,731,330
Total Sum of NumberBypassed		5,041	385,176	16,800	68,203	182,591	657,811
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		3	71	0	18	14	106
Total Sum of FacilityMorts		54	2,980	58	444	175	3,711
Total Sum of ResearchMorts		0	16	0	6	0	22
Total Sum of TotalProjectMorts		57	3,067	58	468	189	3,839

YTD Transportation Summary

Source: Fish Passage Center

Updated: 5/24/13 12:41 PM

TO: 05/24/13

Site	Data	Species						Grand Total
		CH0	CH1	CO	SO	ST	LU	
LGR	Sum of NumberCollected	27,585	1,850,929	47,060	42,100	1,393,546		3,361,220
	Sum of NumberBarged	26,177	1,541,124	46,794	42,034	1,041,377		2,697,506
	Sum of NumberBypassed	1,360	307,553	210	52	351,866		661,041
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	7	148	0	0	27		182
	Sum of FacilityMorts	41	2,060	56	14	236		2,407
	Sum of ResearchMorts	0	46	0	0	39		85
	Sum of TotalProjectMorts	48	2,254	56	14	302		2,674
LGS	Sum of NumberCollected	12,254	1,011,467	34,200	21,300	1,109,987		2,189,208
	Sum of NumberBarged	12,044	964,207	34,000	21,300	1,043,687		2,075,238
	Sum of NumberBypassed	209	46,698	200	0	66,201		113,308
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	0	10	0	0	5		15
	Sum of FacilityMorts	1	552	0	0	94		647
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	1	562	0	0	99		662
LMN	Sum of NumberCollected	8,310	462,609	7,350	6,902	437,851	1	923,023
	Sum of NumberBarged	7,884	461,034	7,350	6,896	436,654	0	919,818
	Sum of NumberBypassed	18	1,058	0	2	1,000	16	2,094
	Sum of NumberTrucked	0	0	0	0	0	0	0
	Sum of SampleMorts	0	11	0	0	8	0	19
	Sum of FacilityMorts	10	506	0	4	189	0	709
	Sum of ResearchMorts	0	0	0	0	0	0	0
	Sum of TotalProjectMorts	10	517	0	4	197	0	728
MCN	Sum of NumberCollected	10,175	949,616	23,733	276,770	231,858		1,492,152
	Sum of NumberBarged	0	0	0	0	0		0
	Sum of NumberBypassed	10,169	948,843	23,730	276,549	231,812		1,491,103
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	2	48	0	22	4		76
	Sum of FacilityMorts	4	725	3	199	42		973
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	6	773	3	221	46		1,049
Total Sum of NumberCollected		58,324	4,274,621	112,343	347,072	3,173,242	1	7,965,603
Total Sum of NumberBarged		46,105	2,966,365	88,144	70,230	2,521,718	0	5,692,562
Total Sum of NumberBypassed		11,756	1,304,152	24,140	276,603	650,879	16	2,267,546
Total Sum of NumberTrucked		0	0	0	0	0	0	0
Total Sum of SampleMorts		9	217	0	22	44	0	292
Total Sum of FacilityMorts		56	3,843	59	217	561	0	4,736
Total Sum of ResearchMorts		0	46	0	0	39	0	85
Total Sum of TotalProjectMorts		65	4,106	59	239	644	0	5,113

Cumulative Adult Passage at Mainstem Dams Through: 05/24

DAM	ENDDATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2013		2012		10-Yr Avg.		2013		2012		10-Yr Avg.		2013		2012		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	05/23	76423	31178	146148	6665	130969	17546	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/23	60479	29011	102775	5911	94861	13647	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/23	48689	25284	90486	5196	79844	12228	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/23	41254	17729	80476	3283	68373	9215	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/23	30512	13963	53025	1677	45970	5147	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/22	27225	11944	46217	1309	40804	3338	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/23	24813	12154	43945	1455	34911	3385	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/23	23910	11773	36689	1204	32328	3370	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/22	7901	784	10658	245	10368	428	0	0	0	0	0	0	0	0	0	0	0	0
WAN	05/22	7781	1002	9912	201	9965	599	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/18	4220	488	2596	23	6396	191	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/18	1711	351	567	5	1782	31	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/22	1535	577	745	31	1240	59	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/22	15840	654	17635	534	28666	454	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2013		2012		10-Yr Avg.		10-Yr			10-Yr		Wild	Wild	10-Yr	10-Yr			
		Adult	Jack	Adult	Jack	Adult	Jack	2013	2012	Avg.	2013	2012	Avg.	2013	2012	Avg.	2013	2012	Avg.
BON	05/23	0	0	0	0	0	0	0	1	0	3112	5291	5249	844	1657	1312	813	796	220
TDA	05/23	0	0	0	0	0	0	0	0	0	782	1745	2721	347	926	928	0	0	0
JDA	05/23	0	0	0	0	0	0	0	0	0	904	1840	6350	474	1219	1994	25	3	60
MCN	05/23	1	0	0	0	0	0	0	0	0	1416	4708	6242	695	2203	2084	21	4	0
IHR	05/23	0	0	0	0	0	0	0	0	0	3831	2346	5244	1508	1074	1515	8	0	0
LMN	05/22	0	0	0	0	0	0	0	0	0	2465	3572	9717	1372	1913	3004	2	3	0
LGS	05/23	0	0	0	0	0	0	0	0	0	2192	3909	9532	1178	2296	3054	2	1	0
LGR	05/23	0	0	0	0	0	0	0	0	0	7424	8897	9616	3226	3913	3190	1	0	0
PRD	05/22	0	0	0	0	0	0	0	0	0	45	82	37	0	0	0	6	1	2
WAN	05/22	0	0	0	0	0	0	0	0	0	103	134	108	0	0	0	1	0	0
RIS	05/18	0	0	0	0	0	0	0	0	1	80	146	78	58	99	46	0	0	0
RRH	05/18	0	0	0	0	0	0	0	0	0	142	696	319	118	590	241	0	0	0
WEL	05/22	0	0	0	0	0	0	0	0	0	51	89	58	44	70	39	0	0	0
WFA	05/22	2	0	0	0	0	0	0	0	0	9113	16170	13655	0	0	0	0	0	0

PRD does not post wild steelhead numbers.
 These numbers were collected from USACE, Grant PUD, Douglas PUD, Chelan PUD, ODFW and DART.
 Wild steelhead numbers are included in the total. Wild Steelhead are defined as unclipped fish.
 Historic counts (pre-1996) were obtained from CRITFC and compiled by the FPC.
 Historic counts 1997 to present were obtained from the Corps of Engineers.