



# Fish Passage Center

## Weekly Report #13 - 18

July 19, 2013

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has generally been below average over July, ranging between 0% and 76% of average at individual sub-basins over July. Precipitation above The Dalles has been 27% of average over July. Over the 2013 water year, precipitation has ranged between 68% and 108% of average.

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

Location	Water Year 2013 July 1-10, 2013		Water Year 2013 October 1, 2012 to July 10, 2013	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia above Coulee	0.18	22	32.4
Snake River above Ice Harbor	0.15	47	14.8	73
Columbia above The Dalles	0.13	27	20.8	85
Kootenai	0.23	25	36.0	108
Clark Fork	0.13	25	18.5	76
Flathead	0.26	36	31.4	99
Pend Oreille Basin	0.16	26	25.7	89
Snake Basin above Hells Canyon	0.19	76	11.7	70
Salmon River Basin	0.15	30	17.6	68
Clearwater	0.03	6	31.6	85
Willamette River above Portland	0.00	0	55.1	90

Table 2 displays the April 7<sup>th</sup> and July 17<sup>th</sup> ESP runoff volume forecasts for multiple reservoirs. The July 17<sup>th</sup> forecast at The Dalles between January and July is 97,830 Kaf (97% of average).

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

Location	April 7, 2013 ESP		July 17, 2013 ESP	
	% Average (1971- 2000)	Runoff Volume (Kaf)	% Average (1981- 2010)	Runoff Volume (Kaf)
The Dalles (Jan-July)	93	94287	97	97830
Grand Coulee (Jan-July)	101	60415	107	63907
Libby Res. Inflow, MT (Apr-Aug)	102	6001 *6189	123	7216 **6464
Hungry Horse Res. Inflow, MT (Jan-July)	99	2084	110	2310
Lower Granite Res. Inflow (Apr-July)	83	16485	71	14060
Brownlee Res. Inflow (Apr-July)	62	3376	48	2635
Dworshak Res. Inflow (Apr-July)	96	2319 *2036	87	2110 **2158

\* Denotes COE April Forecast  
 \*\* Denotes COE June Forecast

Grand Coulee Reservoir is at 1289.1 feet (7-18-13) and drafted 0.7 feet over the last week. Outflows at Grand Coulee have ranged between 144.8 and 161.3 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2455.3 feet (7-18-13) and has drafted 1.7 feet last week. Outflows at Libby Dam have been 23.0–23.7 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3559.0 feet (7-18-13) and has drafted 0.4 feet last week. Outflows at Hungry Horse Dam have ranged from 2.8 Kcfs to 2.9 Kcfs over the last week.

Dworshak is currently at an elevation of 1582.2 feet (7-18-13) and has drafted 6.0 feet last week. Outflows from Dworshak have ranged from 9.6 Kcfs to 12.1 Kcfs over the last week for temperature and flow augmentation in the lower Snake River.

The Brownlee Reservoir was at an elevation of 2065.9 feet on July 18<sup>th</sup>, 2013, drafting 3.0 feet over the last week. Over the last week, inflows at Brownlee have ranged between 6.7 and 7.5 Kcfs.

The flow objective at Lower Granite over the summer period (June 21<sup>st</sup> to August 31<sup>st</sup>) is 50 Kcfs. Over the summer period flows at Lower Granite have averaged 40.3 Kcfs and 31.0 Kcfs over the last week.

The flow objective at McNary over the summer period (July 1<sup>st</sup> to August 31<sup>st</sup>) is 200 Kcfs; over the summer period flows at McNary have averaged 236.4 Kcfs and over the last week have averaged 208.1 Kcfs.

**Spill:** Summer Spill began on June 20<sup>th</sup> at the lower Snake River projects and will extend through August 31<sup>st</sup>.

Project	Spill Level Day/Night
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	30%/30% vs. 45 Kcfs/Gas Cap

Flow in the Snake River has remained fairly constant over the past week. Outflow from Dworshak Reservoir was increased above powerhouse capacity for flow augmentation and temperature control, causing some spill to occur. At Lower Granite Dam spill ranged from meeting the Court ordered amounts; being below the Court ordered volumes due to low flow and powerhouse minimum requirements; to exceeding the Court ordered volumes. The spill above the Court ordered amount was a result of an ACDP survey to obtain water velocities to calibrate the COE's model for the future construction of the juvenile bypass outfall. At Little Goose Dam the low flows initiated a change in spill from the 30% of instantaneous flow to a constant

spill level of 7–11 Kcfs. This change was initiated on the afternoon of July 18<sup>th</sup>. At Lower Monumental and Ice Harbor dams the Court ordered summer spill levels were met, except when low flows and powerhouse minimum requirements precluded spill at the amounts described in the table.

Summer spill for fish passage at the Lower Columbia projects began on July 1, except at McNary Dam where summer spill began on June 20<sup>th</sup>, and Bonneville Dam where summer spill began on June 16<sup>th</sup>. Spill will continue through August 31<sup>st</sup>.

Project	Summer Spill Level Day/Night
McNary	50%/50%
John Day	July 1–20: 30%/30% vs. 40%/40% July 20–August 31: 30%/30%
The Dalles	40%/40%
Bonneville	June 16–July 20: 85 Kcfs/121 Kcfs and 95 Kcfs/95 Kcfs July 21–August 31: 75 Kcfs/Gas Cap

Flow at McNary Dam has decreased since last week. All the middle Columbia River dams met the court-ordered summer spill levels described in the table.

The only TDG exceedence observed in the system over the past week was at Lower Granite Dam, as a result of the test conditions described above. Based on historic data collected since 1995 from 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, no fish were detected with signs of GBT.

**Smolt Monitoring:** Smolt monitoring is ongoing at all seven SMP dams (BON, JDA, MCN, RIS, LMN, LGS, and LGR). The Imnaha River Trap is the only trap that continues to operate for the 2013 season.

Passage of spring migrants at BON remained low this week. This week's daily average passage indices for yearling Chinook, sockeye, and steelhead at BON were about 50, 140, and 50 per day, respectively. No coho juveniles were collected at BON this week. This week's daily average passage index for subyearling

Chinook was about 96,500, which was a large decrease over last week's daily average passage index of about 170,000 per day. Finally, only pacific lamprey macrophthalmia were collected at BON this week. Pacific macrophthalmia were collected four of the seven days of sampling, with a daily average collection for the week of 96 per day.

Subyearling Chinook continued to dominate the bypass samples at JDA this week. This week's daily average passage index for subyearling Chinook was about 49,000 per day, which represents a decrease over last week's daily average passage index of about 62,000 per day. Passage of sockeye also decreased this week when compared to last week. This week's daily average passage index for sockeye at JDA was about 100 per day. Last week's daily average passage index for sockeye was about 235 per day. Passage of yearling Chinook, coho, and steelhead was very low this week. In fact, each of these three species was collected on only one day over the past week. Finally, only pacific lamprey macrophthalmia were sampled at JDA this week. 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 1,100 per day. Last week's daily average collection was about 900 per day.

Sampling at MCN for the 2013 season is every-other-day. Passage of all salmonid species decreased this week, when compared to last week. Subyearling Chinook continued to dominate the bypass sample at MCN this week. This week's daily average passage index for subyearling Chinook at MCN was about 162,000 per day. Last week's daily average passage index for subyearling Chinook was just over 300,000 per day. Spring migrants continue to pass MCN in relatively small numbers. 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 about 640, which was much lower than last week's daily average collection of nearly 3,000 per day.

Subyearling Chinook continued to dominate the bypass samples at LGR this week. This week's daily

average passage index for subyearling Chinook was about 4,000 per day, which was lower than last week's daily average passage index of about 5,500 per day. No yearling Chinook, coho, or sockeye juveniles were collected at LGR this week and steelhead juveniles were collected only on two days this week. One pacific lamprey ammocoete and one pacific lamprey macrophthalmia was sampled at LGR this week. The ammocoete was sampled on July 17<sup>th</sup> while the macrophthalmia was sampled on July 13<sup>th</sup>. Finally, due to the possible resampling of PIT-tagged research fish that are released into the gatewells, daily estimates of subyearling Chinook collection and passage indices may have been 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 this species.

Subyearling Chinook passage at LGS continued to decrease this week. This week's daily average passage index for subyearling Chinook at LGS was about 2,500 per day. Last week's daily average passage index was about 4,900 per day. No yearling Chinook or coho juveniles were sampled at LGS this week and passage of steelhead decreased this week. This week's daily average passage index for steelhead at LGS was 16 per day. Last week's daily average passage index for steelhead was 87 per day. Sockeye juveniles were sampled on only one day this week. Finally, both pacific lamprey ammocoetes and macrophthalmia were collected at LGS this week. This week's daily average collection for pacific lamprey ammocoetes was 5 per day. Pacific lamprey macrophthalmia were sampled every day this week, with a daily average collection of about 120 per day.

Similar to LGS, subyearling Chinook continued to predominate in passage at LMN this week. In fact, subyearling Chinook passage at LMN increased this week, when compared to last week. This week's daily average passage index for subyearling Chinook at LMN was about 2,200 per day. Last week's daily average passage index was only about 1,600 per day. The only spring migrants that were collected this week were yearling Chinook and steelhead. No coho or sockeye

juveniles were collected this week. Finally, only pacific lamprey macrophthalmia were collected at LMN this week. This week's daily average collection for pacific lamprey macrophthalmia was 6 per day.

Collections at RIS this week continued to be dominated by subyearling Chinook. However, when compared to last week, subyearling Chinook passage decreased this week. This week's daily average passage index for subyearling Chinook at RIS was about 300 per day. Last week's daily average passage index for subyearling Chinook was about 380 per day. Passage of coho, sockeye, and steelhead was extremely low this week. No yearling Chinook juveniles were collected at RIS this week. Finally, only two pacific lamprey macrophthalmia were collected this week at Rock Island, one on July 17<sup>th</sup> and one on July 18<sup>th</sup>.

Collections at the Imnaha River Trap continued this week. However, as of this writing we have not received sample data since the June 25<sup>th</sup> sample.

### 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. There were no new releases of juvenile salmonids scheduled for this zone this week. In addition, there are no 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. No new releases of juvenile salmonids were scheduled to begin in this zone this week. There are also no releases of juvenile salmonids in this zone 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 of juvenile salmonids were scheduled for this zone this week. Furthermore, there are no new releases to this zone scheduled over the next two weeks.

### Adult Fish Passage

Daily adult summer Chinook passage numbers at Bonneville Dam ranged between 605 and 1,222 in the last week. The 2013 summer Chinook count of 84,813 is about 1.13 times greater than the 2012 count of 75,334 and 1.05 times greater than the 10-year average count of 80,788. The 2013 Bonneville Dam summer Chinook jack count of 24,518 is 2.3 times greater than the 2012 count of 10,564 and 1.5 times greater than the 10-year average count of 15,947. At McNary Dam 67,174 adult summer Chinook have been counted. The 2013 adult summer Chinook count at McNary Dam is about 1.3 times greater than the 2012 count and 1.2 times greater than the 10-year average. The 2013 McNary Dam summer Chinook jack count of 13,218 is about 3.5 times greater than the 2012 count and 1.4 times greater than the 10-year average count. The 2013 adult summer Chinook count at Lower Granite Dam in the Snake River of 7,081 is about 63.7% of the 2012 count and 48.1% of the 10-year average count. The 2013 Lower Granite summer Chinook jack count of 6,480 is about 4.8 times greater than the 2012 count and 1.3 times greater than the 10-year average count.

The 2013 Bonneville Dam adult steelhead count of 23,959 is about 56.8% of the 2012 count of 42,172 and 43.8% of the 10-year average count of 54,633. The 2013 Bonneville Dam adult wild steelhead count of 11,860 is about 65.1% of the 2012 count of 18,205 and 50% of the 10-year average count of 23,749. In the Snake River, this year's Lower Granite steelhead count of 7,959 is about 83.5% of the 2012 count of 9,530 and 69.4% of the 10-year average count of 11,463. The 2013 Lower Granite Dam adult wild steelhead count of 3,411 is about 81.8% of the 2012 count of 4,168 and about 90.3% of the 10-year average count of 3,779. At Willamette Falls, the 2013 count for steelhead was 16,514 as of July 7<sup>th</sup>. This year's steelhead count is about 54.9% of the 2012 count of 30,063 and about 69.4% of the 10-year average count of 23,793.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 823 and 3,427 last week. The 2013 adult sockeye count at Bonneville Dam of 180,482 is about 35.1% of the 2012 count of 514,246, while being 1.02 times greater than the 10-year

average count of 176,247. The 2013 McNary Dam adult sockeye count of 126,909 is about 35.3% of the 2012 count of 359,286, while being 1.03 times greater than the 10-year average count of 122,867. The Lower Granite Dam 2013 adult sockeye count of 558 is about 2.03 times greater than the 2012 count of 274 and 1.17 times greater than the 10-year average count of 476. As of July 18<sup>th</sup> at Bonneville Dam, the adult shad count was 3,740,376. This year's shad count is about 1.5 times greater than the 2012 count of 2,422,718 and 1.3 times greater than the 10-year average count of 2,851,118.

### Hatchery Releases Last Two Weeks

#### Hatchery Release Summary

From: 7/5/2013 to 07/18/13

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Dworshak NFH	CH0	SP	2014	300,000	07-01-13	08-01-13	Selway River	Clearwater River M F
<b>Nez Perce Tribe</b>									
<b>Total</b>					<b>300,000</b>				
<b>Grand Total</b>					<b>300,000</b>				

### Hatchery Releases Next Two Weeks

#### Hatchery Release Summary

From: 7/19/2013 to 8/1/2013

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Dworshak NFH	CH0	SP	2014	300,000	07-01-13	08-01-13	Selway River	Clearwater River M F
<b>Nez Perce Tribe</b>									
<b>Total</b>					<b>300,000</b>				
<b>Grand Total</b>					<b>300,000</b>				

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
07/05/2013	183.6	0.1	182.4	0.0	200.0	24.0	199.6	37.9	199.8	32.6	214.7	90.8	215.4	97.7
07/06/2013	185.1	0.1	187.8	0.0	210.4	34.1	206.7	27.2	207.0	36.9	217.1	81.8	216.6	79.4
07/07/2013	172.6	0.0	175.4	0.0	190.3	20.2	190.8	19.4	195.2	36.3	204.4	69.7	205.3	69.4
07/08/2013	148.7	0.2	148.7	0.0	165.9	10.0	169.5	30.9	174.3	36.8	184.0	47.6	184.9	40.7
07/09/2013	144.5	0.3	145.8	0.0	163.3	10.0	163.4	21.0	165.8	37.7	172.3	30.5	172.0	25.8
07/10/2013	152.0	0.2	142.3	2.6	146.7	10.0	147.9	15.8	153.4	34.8	164.3	23.6	163.6	24.5
07/11/2013	154.7	5.1	158.0	20.3	163.5	10.5	160.1	22.1	161.4	36.2	172.4	41.2	161.6	27.4
07/12/2013	151.3	2.7	154.3	12.1	167.9	10.0	170.1	24.1	172.9	38.1	183.9	44.6	183.6	34.4
07/13/2013	161.3	3.8	159.2	3.2	164.9	10.0	162.4	15.5	166.3	34.8	175.1	33.6	168.8	29.4
07/14/2013	146.3	0.2	149.5	0.0	159.1	10.0	158.9	14.4	163.8	32.4	174.0	34.9	173.7	39.6
07/15/2013	152.5	0.2	151.8	0.0	157.5	10.2	154.5	13.6	157.6	33.5	162.9	27.7	160.5	28.5
07/16/2013	148.3	0.2	140.1	0.0	149.1	11.5	153.3	14.0	157.8	32.7	171.3	32.3	173.9	34.1
07/17/2013	153.9	0.2	153.0	0.0	153.5	10.7	152.9	15.3	155.1	32.4	159.1	23.3	150.1	27.9
07/18/2013	144.8	0.2	150.6	0.0	156.8	10.5	155.9	13.9	158.4	30.4	168.8	29.4	164.9	28.3

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/05/2013	11.2	1.7	---	---	40.1	19.0	40.6	12.9	43.2	17.3	43.1	32.8		
07/06/2013	9.6	0.0	---	---	36.7	18.7	36.3	10.9	34.7	16.7	34.5	24.2		
07/07/2013	9.5	0.0	---	---	37.3	18.7	36.8	11.0	38.6	16.6	41.4	16.4		
07/08/2013	9.6	0.0	---	---	37.4	18.7	36.8	11.0	37.8	17.0	37.0	11.1		
07/09/2013	9.6	0.0	---	---	37.8	18.7	38.3	11.5	39.0	16.7	40.0	26.2		
07/10/2013	10.9	1.3	---	---	35.6	18.4	34.8	10.4	34.6	17.0	35.0	24.7		
07/11/2013	12.6	2.9	---	---	36.5	18.4	35.3	10.6	35.3	16.6	35.1	13.5		
07/12/2013	10.9	1.3	---	---	32.4	18.5	30.3	9.1	32.2	17.0	31.7	9.5		
07/13/2013	9.6	0.0	---	---	32.2	18.0	35.9	10.7	36.0	16.6	37.8	25.4		
07/14/2013	10.0	0.3	---	---	27.9	15.0	24.1	7.2	25.4	13.0	26.5	16.1		
07/15/2013	12.1	2.4	---	---	31.4	21.9	35.8	10.7	36.4	16.1	36.6	26.2		
07/16/2013	9.7	0.0	---	---	32.7	23.1	32.2	9.7	31.7	16.2	32.8	22.4		
07/17/2013	9.7	0.0	---	---	30.4	18.3	31.5	9.5	31.2	16.1	31.6	21.4		
07/18/2013	9.6	0.0	---	---	30.3	18.3	30.3	8.8	32.1	17.0	32.9	22.5		

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
07/05/2013	241.1	133.2	250.1	85.9	236.2	97.2	270.6	95.1	73.5	89.6
07/06/2013	269.0	136.7	266.3	84.8	244.4	97.8	271.3	99.3	72.2	87.4
07/07/2013	261.3	131.7	251.7	100.3	237.3	94.8	256.9	94.5	62.2	87.8
07/08/2013	250.0	135.4	248.2	94.3	232.9	92.6	247.8	89.7	56.6	89.1
07/09/2013	223.6	116.7	215.8	64.5	200.5	80.3	225.7	94.4	34.0	84.9
07/10/2013	217.9	109.0	204.7	65.2	188.9	75.5	201.9	100.0	5.7	83.9
07/11/2013	203.8	102.0	201.1	80.6	183.1	73.1	207.5	95.6	15.7	83.8
07/12/2013	200.5	100.6	195.7	74.6	187.3	74.8	190.1	89.8	0.7	87.3
07/13/2013	217.6	108.7	212.0	63.7	193.6	77.0	213.3	94.8	21.4	84.7
07/14/2013	218.6	109.4	206.0	64.9	188.5	75.1	202.9	100.8	4.4	85.3
07/15/2013	215.6	108.2	212.0	84.2	196.3	78.4	214.9	96.0	22.8	83.7
07/16/2013	210.5	105.7	197.3	75.4	181.5	72.9	202.0	90.5	12.6	86.5
07/17/2013	196.9	99.2	187.2	56.0	173.6	69.6	190.8	95.4	8.2	74.7
07/18/2013	196.8	99.2	194.5	61.9	176.2	70.1	189.5	99.8	0.0	77.3

## 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
<b>Lower Granite Dam</b>											
<b>Little Goose Dam</b>											
	07/08/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/15/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	07/10/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/17/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	07/07/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/11/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/15/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	07/06/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/09/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/13/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	07/05/13	Chinook + Steelhead	50	1	1	2.00%	2.00%	0	0	0	1
	07/09/13	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0
	07/11/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/16/13	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0
	07/18/13	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>	<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>				
7/5	107.4	107.7	108.0	24	---	---	---	0	113.6	113.8	114.0	24	111.8	112.1	112.3	24	114.0	114.3	114.5	24
7/6	107.3	107.6	108.0	24	---	---	---	0	113.4	113.6	113.7	24	111.7	112.0	112.2	24	112.5	112.8	113.1	24
7/7	107.6	107.9	108.1	24	---	---	---	0	113.4	113.6	113.8	24	111.2	111.6	111.9	24	112.2	112.4	112.7	24
7/8	106.8	107.3	107.5	24	---	---	---	0	113.2	113.4	113.7	24	110.0	110.4	111.4	24	111.8	111.9	112.0	14
7/9	106.1	106.3	106.6	24	---	---	---	0	113.0	113.1	113.2	24	109.6	110.2	110.5	24	111.8	111.9	112.1	17
7/10	106.6	107.2	107.5	24	---	---	---	0	114.2	114.4	114.6	24	110.6	111.1	111.7	24	112.3	112.7	113.1	24
7/11	107.2	107.4	107.8	24	---	---	---	0	114.1	114.3	114.5	24	110.2	110.5	111.2	24	111.8	112.2	112.5	24
7/12	106.9	106.9	107.2	6	---	---	---	0	114.2	114.4	114.9	24	109.2	109.6	110.4	24	110.9	111.1	111.2	24
7/13	106.5	106.5	106.5	1	---	---	---	0	113.9	114.2	114.5	24	109.2	110.0	110.5	24	110.8	111.1	111.2	24
7/14	106.6	107.0	107.4	24	---	---	---	0	114.3	114.6	115.1	24	109.8	110.5	111.1	24	111.5	112.0	112.3	24
7/15	106.1	106.3	106.9	23	---	---	---	0	114.6	114.7	115.0	24	110.4	110.8	111.3	24	111.3	111.6	111.7	24
7/16	105.7	106.0	106.4	24	---	---	---	0	114.8	115.0	115.5	24	111.2	111.8	113.3	24	111.3	111.6	112.2	24
7/17	105.8	106.3	106.9	24	---	---	---	0	114.2	114.6	114.8	24	110.3	110.6	111.2	24	112.0	112.2	112.4	24
7/18	105.7	105.9	106.3	20	---	---	---	0	113.3	113.6	113.9	23	110.1	110.5	110.9	23	111.8	112.1	112.2	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>	<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>				
7/5	113.1	113.6	113.8	24	113.2	113.4	113.7	21	116.0	116.9	117.0	21	115.4	116.5	117.1	24	119.3	120.3	121.7	24
7/6	111.6	111.8	111.9	24	112.6	112.8	113.6	20	116.5	117.1	118.1	20	114.2	115.3	115.6	24	118.0	119.0	119.7	24
7/7	111.3	111.4	111.6	24	112.0	112.3	112.9	21	114.6	115.5	116.3	21	115.8	116.1	116.4	24	117.9	118.2	118.5	24
7/8	111.2	111.2	111.8	14	111.2	111.5	111.8	24	112.8	113.2	113.7	24	114.1	114.6	114.6	24	117.8	119.4	120.6	24
7/9	110.8	111.0	111.2	17	111.4	111.8	112.2	24	112.9	113.5	114.2	24	112.2	112.5	112.9	24	115.9	116.8	118.0	24
7/10	111.7	112.3	112.9	24	111.8	112.2	112.9	24	113.3	113.9	114.7	24	112.7	113.3	113.7	24	115.4	117.1	117.8	24
7/11	110.7	110.9	111.2	24	111.1	111.4	111.7	24	112.7	113.2	113.7	24	111.5	111.9	112.3	24	116.2	117.2	118.7	24
7/12	109.6	110.1	110.5	24	110.2	110.7	110.9	23	111.9	112.3	112.8	23	110.3	110.6	110.8	24	115.9	117.1	118.1	24
7/13	109.7	110.1	110.4	24	109.4	109.7	109.9	24	111.1	111.5	112.0	24	109.9	110.3	110.6	24	114.4	115.4	115.8	24
7/14	110.6	111.1	111.5	24	110.6	111.0	111.3	24	112.0	112.7	113.1	24	110.3	110.9	111.2	24	114.2	115.1	115.6	24
7/15	110.6	110.8	111.0	24	110.4	110.7	111.2	24	112.0	112.5	113.1	24	110.7	111.1	111.5	24	114.1	115.1	115.4	24
7/16	110.4	110.9	112.0	24	110.6	110.9	111.2	24	112.2	112.6	113.0	24	110.9	111.5	111.8	24	114.3	115.2	115.6	24
7/17	111.0	111.3	111.5	24	110.8	111.0	111.2	20	112.7	113.1	113.5	20	111.3	111.6	112.0	24	114.8	115.7	116.1	24
7/18	110.7	110.9	111.1	23	111.5	112.0	112.6	20	112.9	113.7	114.6	20	111.3	111.9	112.4	23	114.5	115.5	116.2	23

### Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</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>				
7/5	115.1	116.2	117.1	24	118.5	119.7	121.2	24	113.7	114.4	115.1	24	117.6	118.1	120.1	24	113.9	116.5	118.7	24
7/6	113.3	114.5	115.3	24	117.7	119.1	119.9	24	114.8	116.3	116.7	24	116.3	116.8	117.5	24	115.9	116.7	117.7	24
7/7	114.9	115.5	115.9	24	119.0	120.0	120.4	24	115.2	116.0	117.3	24	115.6	116.6	117.5	24	116.6	117.5	118.6	24
7/8	114.3	115.5	116.4	24	118.4	120.0	121.1	24	114.4	115.0	115.5	24	114.5	114.7	115.0	24	113.4	114.3	114.9	24
7/9	112.4	113.3	115.3	24	117.7	118.6	119.8	24	115.0	115.8	116.5	24	114.7	115.1	115.4	24	114.2	114.9	115.9	24
7/10	112.4	113.0	113.4	24	117.3	117.9	118.4	23	115.3	115.7	116.2	24	115.4	115.9	116.2	24	114.2	114.8	115.9	24
7/11	112.0	112.6	113.9	24	117.0	117.8	118.5	24	112.8	113.1	114.3	24	114.1	114.4	114.9	24	112.6	113.1	113.7	24
7/12	110.8	111.8	113.6	24	116.3	117.3	118.4	24	112.0	112.5	113.5	23	112.8	113.1	113.3	23	111.5	111.7	112.1	23
7/13	109.9	110.7	111.5	24	115.6	116.8	117.3	24	---	---	---	0	---	---	---	0	---	---	---	0
7/14	110.4	111.3	112.0	24	115.9	117.2	117.8	24	---	---	---	0	---	---	---	0	---	---	---	0
7/15	110.6	111.4	112.1	24	116.0	117.1	117.7	24	111.6	112.3	112.8	24	112.9	113.2	113.5	24	112.1	112.6	112.9	24
7/16	110.9	111.6	112.3	24	116.1	117.0	117.5	24	111.9	112.5	112.9	24	113.7	114.0	114.2	24	112.9	113.3	113.7	24
7/17	111.2	111.7	112.3	24	116.5	117.4	118.0	24	111.5	112.1	112.6	24	113.0	113.1	113.4	24	111.5	112.2	113.3	24
7/18	111.0	111.8	112.5	23	116.1	117.1	117.9	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	Priest R. Dnst				Pasco				Dworshak				Clwrtr-Peck				Anatone			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/5	117.5	118.7	119.5	24	---	---	---	0	103.7	107.3	108.1	24	105.4	107.1	108.0	24	101.9	103.1	104.1	24
7/6	118.2	118.6	119.0	24	---	---	---	0	99.6	99.9	100.3	24	102.4	103.5	104.4	24	102.1	103.4	104.5	24
7/7	118.5	118.8	119.1	24	---	---	---	0	99.6	99.9	100.3	24	102.5	103.6	104.4	24	102.2	103.3	104.5	24
7/8	115.7	116.4	118.0	24	---	---	---	0	99.3	99.6	100.0	24	102.1	103.0	103.8	24	101.8	102.6	103.4	24
7/9	115.4	115.7	116.1	24	---	---	---	0	98.9	99.4	99.6	24	102.0	103.2	104.0	24	102.0	103.0	103.9	24
7/10	115.9	116.2	116.6	24	---	---	---	0	102.2	104.9	106.8	24	103.8	106.1	107.3	24	102.4	103.5	104.4	24
7/11	114.4	114.6	115.1	24	---	---	---	0	106.5	106.8	107.3	24	106.6	107.4	108.4	24	101.6	101.9	103.2	18
7/12	113.8	114.1	114.6	23	---	---	---	0	102.9	105.5	106.7	23	104.2	105.5	107.1	23	101.7	102.8	103.9	24
7/13	---	---	---	0	---	---	---	0	99.0	99.3	99.6	24	101.4	102.4	103.3	24	101.7	102.9	104.0	24
7/14	---	---	---	0	---	---	---	0	99.8	100.7	104.9	24	101.8	103.1	104.1	24	102.3	103.7	104.8	24
7/15	114.1	114.3	114.9	24	---	---	---	0	104.7	105.4	105.8	24	105.1	106.3	107.1	24	102.3	103.2	104.5	20
7/16	115.1	115.3	115.5	24	---	---	---	0	100.0	100.4	100.8	24	102.2	103.2	103.9	24	102.4	103.6	104.6	24
7/17	114.1	114.6	115.2	24	---	---	---	0	99.8	100.1	100.3	24	102.1	103.2	104.0	24	102.3	103.6	104.9	24
7/18	---	---	---	0	---	---	---	0	99.3	99.7	100.0	23	101.9	103.1	104.1	23	102.4	103.8	105.0	23

### Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clwrtr-Lewiston				Lower Granite				L. Granite Tlwr				Little Goose				L. Goose Tlwr			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/5	105.6	108.1	109.7	24	103.3	103.7	104.0	24	116.3	116.6	118.3	24	116.3	117.0	117.3	24	112.5	113.1	113.8	24
7/6	103.9	106.4	108.1	24	103.6	103.7	103.8	24	116.7	117.0	117.4	24	114.9	115.4	116.1	24	111.5	112.0	113.1	24
7/7	103.9	106.4	108.1	24	103.1	103.3	103.6	24	116.3	116.7	117.2	24	114.1	114.4	115.0	24	110.7	111.4	111.9	24
7/8	103.4	105.6	107.1	24	101.7	102.0	102.3	24	116.0	116.5	117.0	24	111.5	112.3	113.7	24	109.9	110.7	111.1	24
7/9	103.8	106.3	108.0	24	101.4	101.7	102.0	24	116.1	116.5	117.4	24	112.1	113.2	113.7	24	109.0	109.9	110.9	24
7/10	104.1	106.6	108.3	24	102.2	102.5	102.8	24	116.2	116.7	117.2	24	113.4	113.7	113.9	24	108.4	109.0	109.6	24
7/11	105.1	107.5	109.3	24	101.9	102.2	102.4	24	116.2	116.5	117.4	24	112.6	113.1	113.4	24	108.0	108.5	109.2	24
7/12	105.0	107.1	109.3	23	101.3	101.5	101.7	24	116.9	117.3	117.5	24	112.6	112.8	112.9	24	107.8	108.3	108.6	24
7/13	103.6	106.1	107.8	24	101.2	101.3	101.5	24	116.6	117.0	117.5	24	110.9	111.3	112.1	24	108.5	109.0	109.6	24
7/14	103.9	106.5	108.3	24	101.3	101.5	101.7	24	116.1	116.4	116.8	24	110.7	111.0	111.3	24	108.0	108.9	109.5	24
7/15	104.6	107.5	109.2	24	101.2	101.5	101.8	24	118.5	120.6	121.0	24	110.8	111.0	111.4	24	109.5	110.1	110.3	24
7/16	104.5	106.3	107.2	24	102.3	102.6	102.8	24	119.0	120.9	121.5	24	110.6	110.9	111.3	24	108.0	108.7	109.3	24
7/17	104.2	106.6	108.3	24	102.1	102.3	102.5	24	116.7	117.0	117.3	24	111.0	111.7	112.2	24	105.3	105.9	107.1	24
7/18	104.1	106.6	108.3	23	102.4	102.7	103.2	23	116.7	117.0	117.3	23	111.3	111.5	111.8	23	105.3	106.4	107.9	23

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

Date	Lower Mon.				L. Mon. Tlwr				Ice Harbor				Ice Harbor Tlwr				McNary-Oregon			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/5	114.0	114.2	114.6	24	116.6	117.1	117.4	24	115.8	115.9	116.1	24	114.2	114.8	115.3	24	---	---	---	0
7/6	114.0	114.1	114.2	24	116.6	117.0	117.3	24	115.2	115.4	115.7	24	113.9	114.6	114.8	24	---	---	---	0
7/7	113.7	113.9	114.3	24	116.4	117.0	117.7	24	114.4	114.7	115.0	24	113.0	113.6	113.9	24	---	---	---	0
7/8	113.1	113.4	113.9	24	116.4	116.7	117.1	24	113.4	113.8	114.0	24	112.0	112.6	113.1	24	---	---	---	0
7/9	113.1	113.4	113.9	24	115.7	116.6	117.1	24	113.7	114.3	114.6	24	113.1	114.1	114.7	24	---	---	---	0
7/10	112.4	113.0	113.2	24	115.9	116.1	116.4	24	114.5	114.7	115.0	24	112.7	113.4	114.1	24	---	---	---	0
7/11	110.8	111.4	112.0	24	115.7	116.1	116.9	24	113.6	113.9	114.4	24	112.3	112.7	113.0	24	---	---	---	0
7/12	111.5	111.8	111.9	24	115.7	116.0	116.4	24	113.7	114.0	114.7	24	111.7	112.4	113.0	24	---	---	---	0
7/13	110.1	110.4	110.9	24	115.3	115.8	116.2	24	112.8	113.0	113.2	24	112.2	113.3	113.5	24	---	---	---	0
7/14	109.1	109.2	109.4	24	112.9	113.7	115.4	24	111.5	111.8	112.0	24	110.8	111.6	112.3	24	---	---	---	0
7/15	108.9	109.2	109.4	24	115.1	116.0	116.3	24	111.4	111.6	111.8	24	112.0	113.5	114.0	24	---	---	---	0
7/16	109.4	109.8	110.4	24	115.1	115.7	116.1	24	111.7	112.1	112.4	24	112.7	113.5	114.3	24	---	---	---	0
7/17	109.0	109.2	109.5	24	115.2	116.0	116.2	24	111.1	111.4	112.0	24	112.0	113.5	114.5	24	---	---	---	0
7/18	108.8	109.0	109.2	23	115.9	116.2	116.5	23	110.0	110.2	110.8	23	113.0	113.8	114.4	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	
7/5	114.0	114.5	115.4	24	118.4	118.8	119.6	24	111.0	111.3	111.9	24	115.1	116.1	117.7	24	109.7	110.5	111.4	24
7/6	113.6	114.1	114.4	24	118.5	119.2	119.6	24	110.7	111.5	112.2	24	114.9	116.4	118.4	24	110.1	111.4	112.4	24
7/7	113.0	113.7	114.9	24	118.5	119.1	119.3	24	111.5	111.8	112.3	24	116.8	117.6	118.1	24	111.6	112.3	112.4	24
7/8	113.7	114.2	114.5	24	118.5	118.9	119.1	24	110.2	110.4	110.9	24	116.0	117.2	118.0	24	110.7	111.3	112.1	24
7/9	113.8	114.4	114.8	24	117.5	117.7	117.9	24	109.9	110.4	110.9	24	113.6	114.1	114.6	24	111.8	112.1	112.2	24
7/10	113.3	113.6	114.3	24	117.3	117.5	117.7	24	111.1	111.5	112.3	24	114.8	115.3	115.9	24	110.4	110.8	111.1	24
7/11	111.8	112.2	112.9	24	116.7	116.9	117.3	24	110.2	110.5	110.9	24	114.4	115.2	116.1	24	108.4	108.8	109.3	24
7/12	110.7	111.1	111.5	24	116.4	116.7	117.0	24	108.8	109.1	109.5	24	114.5	115.4	116.3	24	108.7	108.8	108.9	24
7/13	109.5	109.6	109.7	24	116.5	116.9	117.2	24	107.7	108.2	108.5	24	113.3	113.8	114.3	24	109.1	109.6	110.6	24
7/14	109.3	109.7	110.2	24	116.8	117.0	117.2	24	108.5	108.8	109.2	24	113.8	114.1	114.9	24	110.5	110.7	110.8	24
7/15	110.2	110.6	111.0	24	116.9	117.1	117.5	24	108.0	108.8	110.4	24	115.2	116.0	117.5	24	110.0	110.7	111.6	24
7/16	110.2	110.5	110.7	24	116.5	116.8	116.9	24	108.3	108.9	109.4	24	113.5	114.7	115.7	24	111.9	112.2	112.6	24
7/17	109.5	109.9	110.5	24	116.4	116.7	117.2	24	108.4	108.7	109.5	24	114.2	114.6	114.9	24	109.5	110.5	111.1	24
7/18	108.9	109.0	109.2	23	116.2	116.7	117.1	23	108.2	108.8	109.3	23	114.4	115.0	116.1	23	108.1	108.4	109.1	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	
7/5	115.5	116.0	117.4	24	108.8	109.0	109.3	24	112.6	114.1	115.5	24	110.7	111.9	113.0	24	117.0	118.0	119.7	24
7/6	116.4	117.1	117.5	24	109.9	110.9	111.1	24	112.9	113.4	113.8	24	111.0	112.8	114.0	24	118.8	119.0	119.6	24
7/7	117.0	117.5	117.8	24	111.0	111.1	111.2	24	113.3	113.7	114.3	24	111.5	112.3	113.2	24	118.5	118.6	118.7	24
7/8	116.3	116.5	116.8	24	109.8	110.1	110.3	24	112.8	113.2	113.5	24	111.5	112.8	113.8	24	116.9	117.6	119.6	24
7/9	116.7	117.0	117.6	24	111.9	113.0	113.5	24	114.7	115.2	115.7	24	112.6	114.6	116.2	24	117.2	118.2	119.7	24
7/10	115.6	115.9	116.6	24	112.2	112.7	113.0	24	115.8	116.3	116.8	24	112.8	114.0	115.3	24	118.5	118.8	119.6	24
7/11	114.0	114.3	114.8	24	108.4	109.0	110.3	24	114.0	114.6	115.1	24	111.2	112.3	113.2	24	118.1	118.4	118.4	24
7/12	114.0	114.4	114.9	24	107.1	107.3	107.5	24	112.9	113.1	113.5	24	110.0	110.7	111.3	24	116.5	117.2	118.9	24
7/13	114.2	115.0	115.6	24	107.9	109.0	109.5	24	114.1	115.2	116.4	24	110.2	112.4	114.2	24	116.7	117.6	119.4	24
7/14	115.0	115.4	115.7	24	112.1	113.3	113.9	24	116.0	116.6	116.9	24	112.0	114.3	115.8	24	118.4	118.8	119.7	24
7/15	114.9	115.6	115.9	24	112.9	113.3	113.8	24	116.3	116.8	117.1	24	113.6	115.4	116.4	24	118.3	118.6	118.7	24
7/16	115.1	115.5	115.9	24	112.9	113.3	113.6	24	115.3	115.6	115.9	24	113.3	113.7	114.4	24	116.9	117.6	119.4	24
7/17	113.0	113.6	114.2	24	111.1	111.8	113.3	24	115.4	116.3	117.7	24	112.2	113.9	115.7	24	116.7	117.7	119.5	24
7/18	112.6	113.3	113.9	23	108.5	108.8	109.3	23	115.1	115.7	116.7	23	112.2	113.7	115.2	23	117.7	118.1	118.7	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 7/19/2013 7:37

### 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/smolqueries/currentsmppsubmitdata.asp>

<b>COMBINED YEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>††</sup> (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/05/2013 *	---	---	---	---	18	0	88	0	---	2	0
07/06/2013	---	---	---	---	0	0	4	3	421	204	869
07/07/2013 *	---	---	---	---	0	0	28	0	---	436	0
07/08/2013	---	---	---	---	0	0	0	3	0	0	0
07/09/2013 *	---	---	---	---	0	1	35	0	---	0	0
07/10/2013	---	---	---	---	0	0	15	0	0	0	353
07/11/2013 *	---	---	---	---	0	0	4	0	---	219	0
07/12/2013	---	---	---	---	0	0	8	0	206	0	0
07/13/2013 *	---	---	---	---	0	0	0	0	---	0	316
07/14/2013	---	---	---	---	0	0	8	0	0	143	0
07/15/2013 *	---	---	---	---	0	0	0	0	---	0	0
07/16/2013	---	---	---	---	0	0	0	0	0	0	0
07/17/2013 *	---	---	---	---	0	0	0	0	---	0	0
07/18/2013	---	---	---	---	0	0	9	0	0	0	0
07/19/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>1</b>	<b>199</b>	<b>6</b>	<b>627</b>	<b>1,004</b>	<b>1,538</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>90</b>	<b>72</b>	<b>110</b>
<b>YTD</b>	<b>50,632</b>	<b>55,599</b>	<b>26,301</b>	<b>2,797</b>	<b>2,607,054</b>	<b>1,500,072</b>	<b>614,202</b>	<b>28,312</b>	<b>2,123,325</b>	<b>2,056,882</b>	<b>1,881,392</b>

<b>COMBINED SUBYEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>††</sup> (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/05/2013 *	---	---	---	---	3,235	6,468	1,695	484	---	895	157,103
07/06/2013	---	---	---	---	5,396	4,631	986	520	282,092	94,560	169,444
07/07/2013 *	---	---	---	---	7,210	3,889	1,415	410	---	82,280	173,889
07/08/2013	---	---	---	---	5,091	6,134	1,072	364	269,592	42,450	153,531
07/09/2013 *	---	---	---	---	4,814	3,097	1,684	323	---	63,420	206,365
07/10/2013	---	---	---	---	6,085	5,309	2,554	279	368,126	77,223	170,183
07/11/2013 *	---	---	---	---	6,571	4,687	1,931	271	---	72,812	162,245
07/12/2013	---	---	---	---	5,004	2,925	1,926	323	184,617	67,454	123,121
07/13/2013 *	---	---	---	---	4,162	3,680	2,124	334	---	46,945	196,262
07/14/2013	---	---	---	---	4,897	2,338	944	178	113,523	51,220	142,054
07/15/2013 *	---	---	---	---	3,230	1,853	1,224	253	---	78,823	93,550
07/16/2013	---	---	---	---	3,649	2,091	1,438	231	61,718	39,537	71,754
07/17/2013 *	---	---	---	---	3,530	2,557	4,708	259	---	19,292	25,782
07/18/2013	---	---	---	---	3,911	1,918	2,747	434	83,269	37,648	23,070
07/19/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>66,785</b>	<b>51,577</b>	<b>26,448</b>	<b>4,663</b>	<b>1,362,937</b>	<b>774,559</b>	<b>1,868,353</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,770</b>	<b>3,684</b>	<b>1,889</b>	<b>333</b>	<b>194,705</b>	<b>55,326</b>	<b>133,454</b>
<b>YTD</b>	<b>2</b>	<b>60</b>	<b>195</b>	<b>2,668</b>	<b>654,369</b>	<b>566,618</b>	<b>250,981</b>	<b>12,107</b>	<b>3,248,831</b>	<b>2,271,872</b>	<b>4,658,907</b>

## Two-Week Summary of Passage Indices

<b>COMBINED COHO</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/05/2013 *	---	---	---	---	0	0	0	18	---	0	0
07/06/2013	---	---	---	---	0	0	0	9	211	0	0
07/07/2013 *	---	---	---	---	0	0	7	2	---	0	428
07/08/2013	---	---	---	---	0	0	0	3	0	0	0
07/09/2013 *	---	---	---	---	0	0	7	3	---	0	0
07/10/2013	---	---	---	---	0	0	0	5	0	0	0
07/11/2013 *	---	---	---	---	0	0	0	7	---	0	0
07/12/2013	---	---	---	---	0	0	0	0	0	0	0
07/13/2013 *	---	---	---	---	0	0	0	9	---	0	0
07/14/2013	---	---	---	---	0	0	0	1	0	0	0
07/15/2013 *	---	---	---	---	0	0	0	6	---	152	0
07/16/2013	---	---	---	---	0	0	0	3	0	0	0
07/17/2013 *	---	---	---	---	0	0	0	2	---	0	0
07/18/2013	---	---	---	---	0	0	0	3	0	0	0
07/19/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>71</b>	<b>211</b>	<b>152</b>	<b>428</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>30</b>	<b>11</b>	<b>31</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>107</b>	<b>61,810</b>	<b>54,156</b>	<b>10,580</b>	<b>49,936</b>	<b>85,339</b>	<b>188,509</b>	<b>770,597</b>

<b>COMBINED STEELHEAD</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>††</sup> (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/05/2013 *	---	---	---	---	0	103	7	12	---	0	288
07/06/2013	---	---	---	---	77	58	19	12	0	0	435
07/07/2013 *	---	---	---	---	0	129	35	6	---	0	30
07/08/2013	---	---	---	---	106	158	40	6	0	0	0
07/09/2013 *	---	---	---	---	0	119	21	2	---	0	0
07/10/2013	---	---	---	---	21	0	22	3	840	143	353
07/11/2013 *	---	---	---	---	0	43	8	5	---	0	324
07/12/2013	---	---	---	---	41	14	0	0	0	0	0
07/13/2013 *	---	---	---	---	0	43	0	0	---	0	316
07/14/2013	---	---	---	---	0	0	8	1	0	143	0
07/15/2013 *	---	---	---	---	0	22	8	0	---	0	0
07/16/2013	---	---	---	---	34	17	8	2	0	0	0
07/17/2013 *	---	---	---	---	0	14	0	2	---	0	0
07/18/2013	---	---	---	---	0	0	18	0	0	0	0
07/19/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>279</b>	<b>720</b>	<b>194</b>	<b>51</b>	<b>840</b>	<b>286</b>	<b>1,746</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>51</b>	<b>14</b>	<b>4</b>	<b>120</b>	<b>20</b>	<b>125</b>
<b>YTD</b>	<b>3,789</b>	<b>40,840</b>	<b>3,547</b>	<b>9,925</b>	<b>2,036,954</b>	<b>1,715,651</b>	<b>610,872</b>	<b>14,954</b>	<b>471,593</b>	<b>732,359</b>	<b>470,204</b>

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)
07/05/2013 *	---	---	---	---	0	0	0	7	---	3	0
07/06/2013	---	---	---	---	0	0	0	27	1,475	409	0
07/07/2013 *	---	---	---	---	0	0	0	16	---	654	0
07/08/2013	---	---	---	---	0	0	0	24	1,645	239	389
07/09/2013 *	---	---	---	---	0	0	0	14	---	196	395
07/10/2013	---	---	---	---	0	0	0	10	1,261	143	0
07/11/2013 *	---	---	---	---	21	0	0	7	---	0	0
07/12/2013	---	---	---	---	0	0	0	9	822	0	335
07/13/2013 *	---	---	---	---	0	0	0	7	---	0	316
07/14/2013	---	---	---	---	0	0	0	6	0	143	343
07/15/2013 *	---	---	---	---	0	0	0	2	---	0	0
07/16/2013	---	---	---	---	0	0	0	11	2	238	0
07/17/2013 *	---	---	---	---	0	7	0	11	---	156	0
07/18/2013	---	---	---	---	0	0	0	8	414	143	0
07/19/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>7</b>	<b>0</b>	<b>159</b>	<b>5,619</b>	<b>2,324</b>	<b>1,778</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>803</b>	<b>166</b>	<b>127</b>
<b>YTD</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>326</b>	<b>54,652</b>	<b>32,991</b>	<b>11,379</b>	<b>24,975</b>	<b>629,592</b>	<b>413,743</b>	<b>394,901</b>

COMBINED LAMPREY JUVENILES											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>†</sup> (Coll)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
07/05/2013 *	---	---	---	---	0	100	3	2	---	17	0
07/06/2013	---	---	---	---	0	80	4	2	2,600	1,429	143
07/07/2013 *	---	---	---	---	0	250	8	0	---	571	0
07/08/2013	---	---	---	---	0	270	0	0	4,300	857	143
07/09/2013 *	---	---	---	---	0	150	4	0	---	850	143
07/10/2013	---	---	---	---	0	95	16	1	2,000	1,000	0
07/11/2013 *	---	---	---	---	10	140	16	1	---	1,571	143
07/12/2013	---	---	---	---	0	145	12	0	500	2,286	0
07/13/2013 *	---	---	---	---	10	195	0	0	---	2,000	143
07/14/2013	---	---	---	---	0	110	4	0	300	1,100	183
07/15/2013 *	---	---	---	---	0	155	8	0	---	600	0
07/16/2013	---	---	---	---	0	95	12	0	200	1,000	143
07/17/2013 *	---	---	---	---	4	60	0	1	---	200	203
07/18/2013	---	---	---	---	0	100	4	1	200	450	0
07/19/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>1,945</b>	<b>91</b>	<b>8</b>	<b>10,100</b>	<b>13,931</b>	<b>1,244</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>139</b>	<b>7</b>	<b>1</b>	<b>1,443</b>	<b>995</b>	<b>89</b>
<b>YTD</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>4,956</b>	<b>54,482</b>	<b>63,596</b>	<b>117</b>	<b>74,010</b>	<b>172,220</b>	<b>5,854</b>

## 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, steelhead, and subyearling Chinook 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 = 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.

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:

7/19/13 7:33 AM

**07/05/13 TO 07/19/13**

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
<b>LGR</b>	Sum of NumberCollected	30,534		10		130	10	30,684
	Sum of NumberBarged	30,134		10		177	10	30,331
	Sum of NumberBypassed	2		0		0	0	2
	Sum of Numbertrucked	0		0		0	0	0
	Sum of SampleMorts	45		0		1	0	46
	Sum of FacilityMorts	58		0		2	0	60
	Sum of ResearchMorts	0		0		0	0	0
	Sum of TotalProjectMorts	103		0		3	0	106
<b>LGS</b>	Sum of NumberCollected	35,796		1		500	5	36,302
	Sum of NumberBarged	41,166		1		608	3	41,778
	Sum of NumberBypassed	0		0		0	0	0
	Sum of Numbertrucked	0		0		0	0	0
	Sum of SampleMorts	28		0		0	0	28
	Sum of FacilityMorts	86		0		1	2	89
	Sum of ResearchMorts	0		0		0	0	0
	Sum of TotalProjectMorts	114		0		1	2	117
<b>LMN</b>	Sum of NumberCollected	13,574		112	8	102		13,796
	Sum of NumberBarged	12,300		109	9	96		12,514
	Sum of NumberBypassed	408		2	0	0		410
	Sum of Numbertrucked	0		0	0	0		0
	Sum of SampleMorts	20		0	0	0		20
	Sum of FacilityMorts	82		0	0	0		82
	Sum of ResearchMorts	0		0	0	0		0
	Sum of TotalProjectMorts	102		0	0	0		102
<b>MCN</b>	Sum of NumberCollected	655,830		300	100	400	2,701	659,331
	Sum of NumberBarged	0		0	0	0	0	0
	Sum of NumberBypassed	655,589		299	100	400	2,701	659,089
	Sum of Numbertrucked	0		0	0	0	0	0
	Sum of SampleMorts	176		1	0	0	0	177
	Sum of FacilityMorts	65		0	0	0	0	65
	Sum of ResearchMorts	0		0	0	0	0	0
	Sum of TotalProjectMorts	241		1	0	0	0	242
Total Sum of NumberCollected		735,734		423	108	1,132	2,716	740,113
Total Sum of NumberBarged		83,600		120	9	881	13	84,623
Total Sum of NumberBypassed		655,999		301	100	400	2,701	659,501
Total Sum of Numbertrucked		0		0	0	0	0	0
Total Sum of SampleMorts		269		1	0	1	0	271
Total Sum of FacilityMorts		291		0	0	3	2	296
Total Sum of ResearchMorts		0		0	0	0	0	0
Total Sum of TotalProjectMorts		560		1	0	4	2	567



### YTD Transportation Summary

Source: Fish Passage Center

Updated:

7/19/13 7:33 AM

TO: 07/19/13

		Species						
Site	Data	CH0	CH1	CO	SO	ST	LU	Grand Total
<b>LGR</b>	Sum of NumberCollected	429,889	1,865,111	48,070	42,630	1,444,818		3,830,518
	Sum of NumberBarged	413,873	1,554,564	47,801	42,561	1,087,898		3,146,697
	Sum of NumberBypassed	13,693	308,258	210	52	356,574		678,787
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	455	173	2	2	40		672
	Sum of FacilityMorts	308	2,066	57	15	258		2,704
	Sum of ResearchMorts	38	52	0	0	47		137
	Sum of TotalProjectMorts	801	2,291	59	17	345		3,513
<b>LGS</b>	Sum of NumberCollected	393,699	1,026,506	36,885	22,606	1,174,590		2,654,286
	Sum of NumberBarged	391,843	979,234	36,685	22,602	1,108,257		2,538,621
	Sum of NumberBypassed	251	46,698	200	1	66,201		113,351
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	58	14	0	0	9		81
	Sum of FacilityMorts	224	560	0	3	123		910
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	282	574	0	3	132		991
<b>LMN</b>	Sum of NumberCollected	158,448	470,873	7,998	8,064	459,561	1	1,104,945
	Sum of NumberBarged	143,267	469,257	7,997	8,058	458,159	0	1,086,738
	Sum of NumberBypassed	13,212	1,079	0	2	1,141	92	15,526
	Sum of NumberTrucked	0	0	0	0	0	0	0
	Sum of SampleMorts	80	15	0	0	18	0	113
	Sum of FacilityMorts	256	518	1	4	235	0	1,014
	Sum of ResearchMorts	0	0	0	0	0	0	0
	Sum of TotalProjectMorts	336	533	1	4	253	0	1,127
<b>MCN</b>	Sum of NumberCollected	1,559,659	1,098,880	43,783	312,536	255,352		3,270,210
	Sum of NumberBarged	0	0	0	0	0		0
	Sum of NumberBypassed	1,559,314	1,098,057	43,779	312,288	255,297		3,268,735
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	234	62	1	33	8		338
	Sum of FacilityMorts	112	761	3	215	47		1,138
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	346	823	4	248	55		1,476
Total Sum of NumberCollected		2,541,695	4,461,370	136,736	385,836	3,334,321	1	10,859,959
Total Sum of NumberBarged		948,983	3,003,055	92,483	73,221	2,654,314	0	6,772,056
Total Sum of NumberBypassed		1,586,470	1,454,092	44,189	312,343	679,213	92	4,076,399
Total Sum of NumberTrucked		0	0	0	0	0	0	0
Total Sum of SampleMorts		827	264	3	35	75	0	1,204
Total Sum of FacilityMorts		900	3,905	61	237	663	0	5,766
Total Sum of ResearchMorts		38	52	0	0	47	0	137
Total Sum of TotalProjectMorts		1,765	4,221	64	272	785	0	7,107

Cumulative Adult Passage at Mainstem Dams Through: 07/19

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	07/18	83345	33820	158089	7592	141713	20323	84813	24518	75334	10564	80788	15947	0	0	0	0	0	0
TDA	07/17	69202	32311	117087	7175	107368	16911	76443	19008	60141	8011	66780	12034	0	0	0	0	0	0
JDA	07/17	56991	28957	107655	6755	92410	15875	66601	17924	51475	8229	59633	12324	0	0	0	0	0	0
MCN	07/18	52176	22279	102763	4787	83990	13854	67174	13218	52982	3760	54980	9218	0	0	0	0	0	0
IHR	07/18	38017	18611	71957	2905	58986	8558	10562	6058	13127	1302	16494	4017	0	0	0	0	0	0
LMN	07/18	36470	19053	68608	2891	58025	7379	10299	7290	13878	1338	17643	3899	0	0	0	0	0	0
LGS	07/18	35072	19443	68247	3449	53406	8429	8437	7055	12368	1320	16065	4510	0	0	0	0	0	0
LGR	07/18	35031	19940	66366	3525	53382	9851	7081	6480	11112	1352	14716	5023	0	0	0	0	0	0
PRD	07/13	13725	1298	19495	1015	15225	1406	50254	1525	27529	522	35966	1280	0	0	0	0	0	0
WAN	07/13	13715	1661	19804	973	15699	2278	49000	1039	27253	497	29875	948	0	0	0	0	0	0
RIS	07/15	13345	3100	19881	800	14248	2237	47398	1543	26522	672	32447	2706	0	0	0	0	0	0
RRH	07/15	6841	2101	6641	459	5306	853	37165	1654	14850	492	20017	1726	0	0	0	0	0	0
WEL	07/09	7133	2980	5311	700	4618	880	16543	1395	3331	121	6819	263	0	0	0	0	0	0
WFA	07/07	26493	1444	34247	1183	44424	1002	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	Coho						Sockeye			Steelhead					Lamprey			
		2013		2012		10-Yr Avg.		2013	2012	10-Yr Avg.	2013	2012	10-Yr Avg.	Wild 2013	Wild 2012	10-Yr Avg.	2013	2012	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	07/18	0	0	0	0	0	0	180482	514246	176247	23959	42172	54633	11860	18205	23749	13975	14280	22160
TDA	07/17	0	0	0	0	0	0	155283	407502	144389	9698	17681	25923	4683	8084	11815	3283	1101	3319
JDA	07/17	0	0	0	0	0	0	147613	390491	145942	7670	11513	23653	3369	5727	9127	2134	568	2209
MCN	07/18	1	0	0	0	0	0	126909	359286	122867	6136	11581	16744	2342	4662	5768	331	55	539
IHR	07/18	0	0	0	0	0	0	840	364	384	6927	5188	10447	2161	1755	2901	62	11	61
LMN	07/18	0	0	0	0	0	0	951	377	470	4814	5949	14397	1974	2610	4265	26	9	8
LGS	07/18	0	0	0	0	0	0	860	331	421	3061	4747	11759	1471	2611	3735	10	3	15
LGR	07/18	0	0	0	0	0	0	558	274	476	7959	9530	11463	3411	4168	3779	4	1	1
PRD	07/13	0	0	0	0	0	0	119313	312308	128212	481	717	794	0	0	0	199	66	146
WAN	07/13	0	1	0	0	0	0	107968	325825	153822	540	739	813	0	0	0	64	22	61
RIS	07/15	0	0	0	0	0	0	116118	295801	120464	433	630	635	273	381	410	15	2	19
RRH	07/15	0	0	0	0	0	0	86707	238579	95821	322	1017	708	232	773	469	5	0	2
WEL	07/09	0	0	0	0	0	0	40870	25287	36768	128	178	135	102	128	85	0	0	0
WFA	07/07	2	0	0	0	0	0	0	0	0	16514	30063	23793	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.