



Fish Passage Center

Weekly Report #98 - 18

July 17, 1998

2501 SW First Ave., Suite 230
Portland, OR 97201-4752
phone: 503/230-4582
fax: 503/230-7559

SUMMARY OF EVENTS:

Water Supply: Precipitation continues to be scarce all over the region. Surface runoff flows became insignificant all over the region. Peak maximum temperatures are reaching 10 to 17 degrees above normal with heating focused particularly in Southern Idaho. It is expected that mid-late period flow out of the Gulf of Alaska will moderate temperatures across the region in the coming week.

System Storage: Major US reservoirs except Libby are full and continue passing inflow. The Canadian reservoirs continue to refill.

A summary of actual elevations on July 16, 1998 is shown in the following table:

Reservoir	Actual Elev. [ft] 7/16/98	Max. Pool [ft]
Mica	2457.25	2475.0
Arrow	1437.70	1444.0
Duncan	1882.80	1892.0
Libby	2458.33	2459.0
Hungry Horse	3559.90	3560.0
Grand Coulee	1288.50	1290.0
Brownlee	2069.24	2077.0
Dworshak	1593.08	1600.0

- Mica continues to refill, releasing Treaty storage at a rate of 10 kcfs. The actual outflow is projected to be between 10-30 kcfs depending on the dynamics of the Non-Treaty releases. Non-Treaty US account as of July 13 was 2.1 MAF and BC Hydro was 2.02 MAF. It is expected that BPA will release an additional 324 KAF from Non Treaty storage by the end of July.
- Arrow Treaty storage is full. The Treaty releases are about 38 kcfs. Actual releases are projected to be in the range of 38 kcfs to 58 kcfs during next week.
- Duncan continues to refill, releasing 0.1 kcfs. It

is projected that the reservoir will be full by the end of July.

- Libby was at a minimum flow of 4 kcfs during July 14-16 for recovery of drowning victims. The outflow will be increased in the range of 12-16 kcfs during coming week. It is expected that the Libby/Arrow swap will commence at the beginning of August, providing 8 ft of water to remain in Libby (from elevation 2439 ft to 2447 ft).
- Hungry Horse began summer operations with outflows ramping up from 5.4 kcfs to 7.2 kcfs. The project will draft to elevation of 3540 ft by the end of August.
- Grand Coulee will operate to support McNary flows of 190-200 kcfs for the next week. It is expected that elevation on July 26 will be 1286 ft.
- Brownlee continues drafting with outflows of 19-20 kcfs limited to one foot per day draft rate for recreation concerns.
- Dworshak will increase outflow from 13 kcfs to 14 kcfs for 5 days. The project will operate to meet the weekly flow objective of 57 kcfs at Lower Granite. The project is releasing 46° - 48° F temperature water to provide cooling in the mainstem Snake River corridor.

Upper Snake reservoirs:

The system is operated primarily for irrigation demands. Temperatures continue to be high with high irrigation withdrawals. Surface runoff volumes continue to decrease.

Jackson Lake is currently passing inflow of 3.2 kcfs.

Palisades is currently passing inflow of 14.5 kcfs.

American Falls began drafting to provide irrigation diversion flow downstream at Minidoka. Current outflow is 12.4 kcfs, about 6

kcfs higher than inflow.

Millner flow, at the lowest point of the Upper Snake system, is at a constant rate of 1.5 kcfs since July 7. Irrigation withdrawal upstream of Minidoka is at a constant rate of 8.3 kcfs. Irrigation withdrawal at Upper Snake diversion, upstream from Blackfoot is about 8 kcfs. Irrigation withdrawal from the Upper Snake system at this time is estimated to be 17 kcfs/day.

Boise River Basin:

All three major reservoirs: Anderson, Arrowrock and Lucky peak are full and the system is continuing to pass inflow. Irrigation withdrawals are estimated to be about 1.1 kcfs. The flow at Glenwood Bridge decreased to 1.3 kcfs and remained about 2.2 kcfs at New York Canal.

System Streamflow: The weekly average flows continue to recede. Flows at McNary are already below summer target flows of 200 kcfs. The summary of average weekly flows for run of the river projects during the July 3-July 16 period is shown in the following Table:

Project	July 3-9	July 10-16
Priest Rapids	136.7 kcfs	132.4 kcfs
McNary	211.8 kcfs	198.3 kcfs
Lower Granite	74.8 kcs	63.1 kcfs
Bonneville	219.6 kcfs	207.7 kcfs

Spill: Spill above hydraulic capacity is occurring at Dworshak Dam as flow augmentation is implemented. In the Lower Snake River the summer spill program is being implemented at Ice Harbor Dam. Spill averaged 52.5 kcfs at Ice Harbor Dam over the past week.

The lower Columbia River summer spill program began on July 1, 1998. No spill is scheduled to occur at McNary Dam through the summer. However, river flows and restrictions placed on the powerhouse, have resulted in excess hydraulic capacity spill at this project. Spill averaged 33.2 kcfs at McNary Dam, 51.8 kcfs at John Day Dam, 89.2 kcfs at The Dalles Dam, and 92.2 kcfs at Bonneville Dam over the past week.

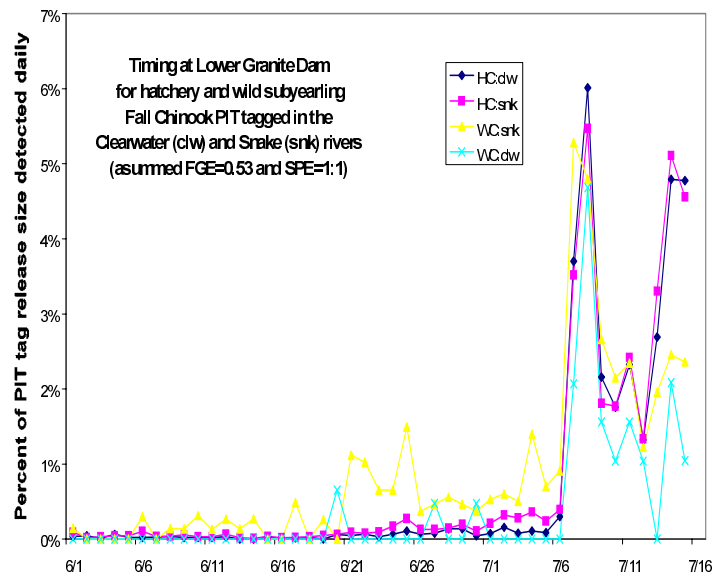
The summer spill program is being implemented at the Mid Columbia projects.

Total Dissolved Gas Supersaturation and Gas Bubble Trauma Monitoring

TDGS levels have been below the gas waivers at all monitoring sites, with the exception of Camas/Washougal where TDGS has slightly exceeded the 115% criteria.

Gas bubble trauma monitoring has ended for the season at the Snake River monitoring sites. Sampling will continue through the summer at Rock Island, McNary, John Day and Bonneville dams. Only a few juvenile fish with signs have been detected in the system. The percentage of fish affected remains well below the action criteria.

Smolt Monitoring. Snake River Drainage. Wild subyearling chinook passage indices at Lower Granite Dam have remained above 2,000 fish per day in 6 of the past 7 days. This follows two days of indices averaging 6,500 fish for each 24-hr sample period ending 0700 July 8 and 9. Using the NMFS estimate of 53% FGE, approximately 25,000 wild subyearling chinook arrived at Lower Granite Dam during those two peak passage days. A plot of PIT tagged hatchery and wild subyearling chinook releases in the Snake and Clearwater rivers show the first peak in passage at Lower Granite Dam on July 8 (24-hr detection period ending midnight). The daily percent shown in this plot is computed by dividing the daily PIT tag detection number by the proportion of flow passing through the powerhouse, a



NMFS estimate of 53% FGE, and the number of PIT tags released through June 30 for a particular group. The plot shows a second peak in passage occurring on July 14 for hatchery subyearling chinook at Lower Granite Dam.

This week's average wild subyearling chinook passage index at Little Goose and Lower Monumental dams have risen greater than 3-fold last week's average.

Columbia River Drainage. In the Mid-Columbia River at Rock Island Dam, this week's average subyearling chinook passage index of about 200 fish per day is slightly below half the magnitude during the 1998 peak passage period of July 23 to 30.

The peak subyearling chinook passage day at McNary Dam occurred during the 24-hr sample period ending 0700 July 8 with a passage index of 611,760. Using the NMFS estimate of 61% FGE, approximately 1 million subyearling chinook arrive at McNary Dam during the peak passage day.

This week's average subyearling chinook passage index of about 300,000 fish per day is slightly below half the magnitude of the 1998 peak passage day. A plot of PIT tagged hatchery and wild subyearling chinook releases in the Snake and Clearwater rivers show rapidly increasing passage of these fish at McNary Dam

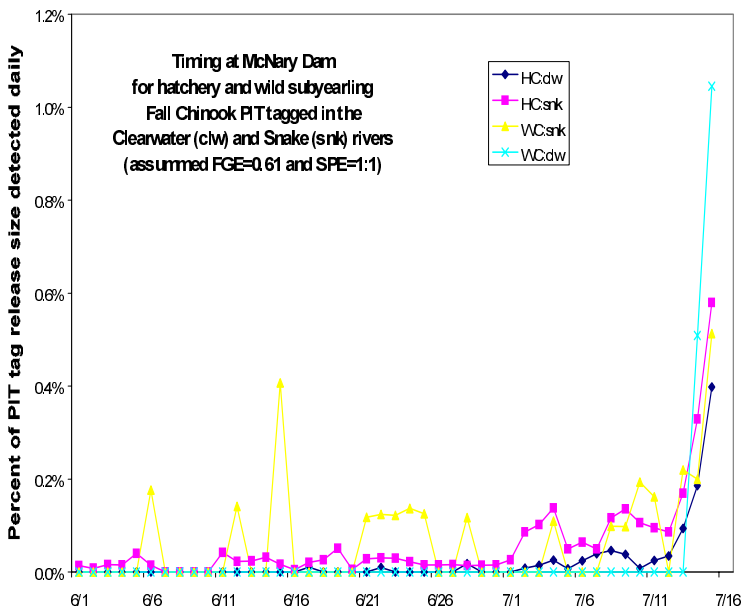
on July 14 and 15. The daily percent shown in this plot is computed by dividing the daily detection by the proportion of flow passing through the powerhouse, a NMFS estimate of 61% FGE, and the number of PIT tags released through June 30 for a particular group.

Because higher river temperatures were causing increased mortality of collected fish at McNary Dam this week, NMFS requested the COE to initiated a test condition of no operation of Turbines 1 and 2 from 0700 June 16 to 1200 July 20 to reduce water temperature in the by-pass. The revised operation is now underway, and if it is determined that this operation helps keep fish mortality down, then NMFS will request a continuation next week.

This week's average subyearling chinook passage index was 24,551 at John Day Dam and 5,069 at Bonneville Dam. Using NMFS FGE's of 32% at John Day Dam and 9% at Bonneville Dam, this week's average number of subyearling chinook arriving at John Day Dam was about 77,000 fish per day and about 56,000 fish per day at Bonneville Dam.

The FGE's presented here are found in the Lynne Krasnow and Doug Dey, June 11, 1997, document entitled Fish guidance efficiency (FGE) estimates for chinook salmon at lower Snake and Columbia River dams, which NMFS provided to the Implementation Team participants on June 12, 1997.

Adult Fish Passage: At Bonneville Dam, numbers of adult summer chinook ranged from 225 to 375 through the week (July 10 - July 16). The cumulative count at Bonneville Dam through July 16 was 17,999 about 72% of the 1997 and 100.6% of the 10-year average. The count of summer chinook at McNary Dam was 13,505, about 75% and 102% of the respective 1997 and 10-year average. The turnoff into the Snake River (Ice Harbor Dam count) totaled 5,304, 60% and 123% of the 1997 and 10-year average at the project. Daily counts of adult summer chinook decreased over the week at the Snake River projects. The cumulative count of summer chinook at Lower Granite Dam was 4,138 through July 16. The cumulative count of



summer chinook at Priest Rapids Dam was 9,805. This total was greater than the 1997 and 10-year average through July 16.

The steelhead run at Bonneville Dam remained near 1,000 fish per day (range = 889-1210) for this passage week at Bonneville Dam. The season count at Bonneville Dam (March - July 16) was 23,281, and remains below either the 1997 or the 10-year average to date.

Daily sockeye counts at Bonneville Dam decreased over the week, from about 250 at the beginning of the week to only 163 by week's end, with the total to date of 12,249. This year's run is approximately 29% and 25% of the 1997 and 10-year average count, respectively through July 16. The sockeye passage has been increasing at the Mid-Columbia projects. The high daily count at Priest Rapids occurred on July 15 for the week with the cumulative count for the season now 9,641 and compared to the 1997 and 10-year average, the 1998 sockeye run is way below the norm. Sockeye that pass Rocky Reach and Wells dams are migrating to Lake Osoyoos. The Rock Island sockeye count minus the Rocky Reach count of sockeye salmon are those expected to migrate to Lake Wenatchee. On July 12, 1998 a sockeye migrating to Red Fish Lake was detected at Lower Granite Dam.

Hatchery Releases: Columbia Basin hatcheries completed release of subyearling summer and fall chinook for the year.

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
07/03/98	128.8	0.1	132.1	0.0	139.9	10.9	146.3	16.0	146.7	30.8	142.3	21.1	154.4	47.5
07/04/98	82.4	0.1	85.3	0.0	97.9	9.8	107.9	10.2	111.6	30.8	104.4	16.2	116.7	35.7
07/05/98	91.3	0.1	90.2	0.0	98.2	8.9	103.5	0.0	104.4	31.0	104.3	15.4	108.2	32.4
07/06/98	126.9	0.1	128.4	0.0	136.3	10.5	140.8	4.5	136.7	31.0	132.6	20.2	141.5	41.6
07/07/98	129.4	0.1	131.8	0.0	140.2	11.1	147.5	7.3	149.4	30.9	146.2	21.8	159.2	48.1
07/08/98	118.5	0.1	122.5	0.0	131.5	12.1	139.8	16.1	139.6	30.9	132.3	20.0	141.5	42.9
07/09/98	115.0	0.1	116.6	0.0	127.1	12.1	132.7	16.2	131.9	31.0	125.9	19.5	135.4	43.2
07/10/98	106.0	0.1	106.2	0.0	120.0	12.4	127.3	14.5	128.1	30.9	124.2	16.6	133.3	40.6
07/11/98	109.3	0.1	102.9	0.0	99.7	11.3	100.3	9.6	98.0	30.9	92.8	9.7	95.8	29.1
07/12/98	89.9	0.1	97.3	0.0	107.2	11.2	113.8	0.2	115.4	31.0	119.6	12.3	129.3	40.5
07/13/98	121.2	0.1	123.2	0.0	126.2	12.4	128.9	0.0	126.3	31.0	124.3	12.6	132.3	39.6
07/14/98	129.7	0.1	130.7	0.0	138.5	12.6	140.5	8.4	137.6	25.8	128.8	14.3	140.3	42.2
07/15/98	134.4	0.1	133.6	0.0	138.9	12.4	141.1	13.8	141.7	20.4	143.1	21.5	157.6	50.1
07/16/98	144.8	0.1	145.8	0.0	150.4	12.1	150.4	18.6	147.2	20.4	123.8	20.9	138.2	42.2

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

Date	Dworshak		Brownlee		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/03/98	4.3	0.0	---	---	79.5	5.8	78.5	0.0	82.4	0.0	86.2	58.5
07/04/98	6.7	0.0	---	---	85.4	5.8	83.9	1.2	88.8	0.9	93.0	59.6
07/05/98	4.2	0.0	---	---	80.3	5.7	81.0	0.0	84.9	0.0	86.2	61.3
07/06/98	3.2	0.0	---	---	72.9	5.7	72.3	0.0	76.3	0.0	78.6	57.6
07/07/98	2.9	0.0	---	---	69.2	5.8	68.9	0.0	72.1	0.0	76.3	56.7
07/08/98	2.9	0.0	---	---	64.5	5.7	64.4	0.0	66.4	0.0	66.2	53.1
07/09/98	3.9	0.0	---	---	63.6	5.7	65.4	0.0	69.8	0.0	73.8	58.7
07/10/98	7.0	0.0	---	---	62.8	5.7	60.7	0.0	63.0	0.0	66.7	54.1
07/11/98	9.1	0.0	---	---	65.9	5.8	66.0	0.0	68.3	0.0	69.0	53.8
07/12/98	9.4	0.0	---	---	66.8	5.8	67.3	0.0	73.3	0.0	76.6	59.9
07/13/98	12.9	3.4	---	---	61.6	5.8	60.6	0.0	63.8	0.0	65.9	49.9
07/14/98	13.0	3.6	---	---	64.0	5.8	62.7	0.0	66.3	0.0	69.1	49.5
07/15/98	13.0	3.6	---	---	62.1	5.8	60.7	0.0	65.4	0.0	69.9	51.4
07/16/98	14.0	4.5	---	---	58.3	3.8	58.9	0.0	61.9	0.0	64.1	49.0

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
07/03/98	203.9	33.3	199.5	54.5	193.3	107.7	201.0	92.9	64.2	34.7
07/04/98	240.3	62.9	244.8	64.4	238.6	98.0	250.9	92.7	77.8	71.2
07/05/98	186.0	14.3	195.5	53.6	195.9	111.2	209.8	92.2	71.4	36.9
07/06/98	214.4	49.9	217.9	49.6	213.2	75.5	223.5	92.7	65.6	56.4
07/07/98	213.0	43.5	197.9	51.2	191.2	110.3	199.9	91.8	62.0	36.8
07/08/98	213.5	38.9	224.1	56.7	217.0	77.5	230.7	92.3	77.7	51.4
07/09/98	211.7	37.1	214.8	56.5	210.6	117.5	221.7	92.4	73.4	46.8
07/10/98	210.4	34.6	205.6	50.6	203.5	72.4	209.2	91.9	66.4	41.7
07/11/98	172.3	0.0	173.4	45.0	169.2	51.8	184.2	92.4	52.1	30.5
07/12/98	176.5	15.6	185.9	50.7	177.6	98.5	184.0	92.5	49.7	32.6
07/13/98	207.5	54.8	195.3	53.6	206.3	131.3	214.4	92.8	67.8	44.6
07/14/98	204.8	39.0	210.6	53.9	205.9	70.6	220.8	91.8	60.3	59.5
07/15/98	214.5	45.4	217.5	54.3	208.4	121.8	217.5	92.3	65.4	50.6
07/16/98	202.4	43.5	217.5	54.3	214.0	77.9	223.9	91.4	72.6	50.7

These data were obtained from the Corps of Engineers through their CAFE reports #96 and #71.

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				Fish with L. Line GBT	
								Rank 1	Rank 2	Rank 3	Rank 4	Num Fish	Avg. Rank
McNary Dam													
	07/07/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/09/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/11/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/14/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/16/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
John Day Dam													
	07/07/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/09/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/11/98	SubYrIng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	07/14/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/15/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Bonneville Dam													
	07/07/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/09/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/11/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/14/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/16/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
Rock Island Dam													
	07/08/98	SubYrIng Chinook	100	1	1	1.00%	0.00%	0	1	0	0	0	0
	07/10/98	SubYrIng Chinook	91	3	2	2.19%	0.00%	2	0	0	0	1	1
	07/13/98	SubYrIng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/15/98	SubYrIng Chinook	100	2	2	2.00%	0.00%	2	0	0	0	0	0

Hatchery Release Summary
Schedule for Last Two Weeks
From 07/03/98 - 07/16/98

Hatchery	Species	FPC LotID	Number Released	Release Dates		Release Site	River Name
				Begin	End		
Nez Perce Tribe							
Lyons Ferry	FA Chinook	98087	51,500	05/14/98	07/07/98	Pittsburg Landing	Snake River
	FA Chinook	98086	31,500	06/01/98	07/06/98	Clearwater R	Clearwater River, Main Fk
	Agency Total:		83,000				
	Total Release:		83,000				

There are no hatchery releases scheduled for the next two weeks.

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High²

Total Dissolved Gas Saturation Data at Upper Columbia Sites

Date	Can. Boundary			Grand Coulee			Tlwr. G. Coulee			Chief Joseph			Wells			Rocky Reach								
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	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	Avg	Avg	High	hr	Avg	Avg	High	hr	
7/3	123	124	124	17	114	114	114	16	114	114	115	15	113	114	114	23	111	111	112	15	111	112	112	22
7/4	122	122	124	16	114	114	114	19	---	---	---	0	113	113	113	23	---	---	---	0	110	110	111	23
7/5	---	---	---	0	114	114	114	12	---	---	---	0	112	113	113	19	---	---	---	0	110	110	111	23
7/6	---	---	---	0	113	113	113	24	---	---	---	0	113	113	114	20	109	109	110	4	110	111	113	23
7/7	---	---	---	0	113	113	114	20	---	---	---	0	113	114	115	23	111	111	111	8	109	111	112	21
7/8	---	---	---	0	113	113	114	24	---	---	---	0	113	113	113	23	112	112	113	14	112	114	114	22
7/9	---	---	---	0	114	114	114	24	---	---	---	0	112	114	114	23	112	112	112	13	114	114	115	23
7/10	---	---	---	0	114	114	114	24	---	---	---	0	113	113	114	24	111	111	112	14	112	112	114	24
7/11	---	---	---	0	114	114	114	24	---	---	---	0	113	113	113	24	110	110	110	23	111	112	112	24
7/12	---	---	---	0	114	114	114	24	---	---	---	0	112	113	113	23	---	---	---	0	110	111	111	23
7/13	---	---	---	0	114	115	115	24	---	---	---	0	112	113	113	23	110	110	110	22	109	110	110	23
7/14	---	---	---	0	114	114	115	22	---	---	---	0	113	113	113	23	110	110	111	16	109	110	110	23
7/15	---	---	---	0	114	114	115	24	111	111	112	7	112	113	113	23	110	110	110	15	110	111	112	21
7/16	124	124	125	12	114	114	115	24	111	112	113	24	113	113	114	23	110	111	111	21	111	112	112	21

Total Dissolved Gas Saturation Data at Mid Columbia Sites

Date	Tlwr. Rocky R.			Rock Island			Tlwr. Rock Island			Wanapum			Tlwr. Wanapum			Priest Rapids								
	24 h	12 h	#	24 h	12 h	#	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	Avg	Avg	High	hr	Avg	Avg	High	hr	
7/3	114	114	114	22	112	113	113	22	119	120	121	22	---	---	---	0	---	---	---	0	---	---	---	0
7/4	113	113	114	23	110	111	112	23	119	120	121	23	---	---	---	0	---	---	---	0	---	---	---	0
7/5	112	112	112	23	109	110	111	23	119	120	121	23	---	---	---	0	---	---	---	0	---	---	---	0
7/6	111	112	112	23	109	110	111	23	118	118	119	23	---	---	---	0	---	---	---	0	---	---	---	0
7/7	112	113	116	21	110	111	112	21	118	118	119	21	---	---	---	0	---	---	---	0	---	---	---	0
7/8	113	114	114	22	111	112	113	22	119	119	120	22	---	---	---	0	---	---	---	0	---	---	---	0
7/9	114	115	115	23	112	113	114	23	120	120	121	23	---	---	---	0	---	---	---	0	---	---	---	0
7/10	114	115	115	24	112	113	114	24	120	120	121	24	---	---	---	0	---	---	---	0	---	---	---	0
7/11	113	114	114	24	110	111	112	24	119	120	120	24	---	---	---	0	---	---	---	0	---	---	---	0
7/12	112	112	113	23	110	111	112	23	119	119	120	23	---	---	---	0	---	---	---	0	---	---	---	0
7/13	111	111	112	23	109	110	111	23	118	119	120	23	---	---	---	0	---	---	---	0	---	---	---	0
7/14	111	111	113	23	109	110	110	23	116	118	119	23	---	---	---	0	---	---	---	0	---	---	---	0
7/15	112	113	116	19	111	112	112	19	116	117	118	19	---	---	---	0	---	---	---	0	---	---	---	0
7/16	113	113	114	21	111	112	113	21	117	117	117	21	---	---	---	0	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation at Mid Columbia, Clearwater and Snake Sites

Date	Dwnstr P Rapids			Dworshak			Clearwater			Snake-Lewiston			Lower Granite			Tlwr L. Granite								
	24 h	12 h	#	24 h	12 h	#	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	Avg	Avg	High	hr	Avg	Avg	High	hr	
7/3	---	---	---	0	103	103	104	24	101	102	102	24	102	103	104	24	104	105	105	24	105	106	107	24
7/4	---	---	---	0	102	103	103	24	101	102	102	24	101	103	105	24	103	103	104	24	105	105	105	24
7/5	---	---	---	0	102	103	103	24	101	102	103	24	100	101	102	24	102	102	102	24	104	104	105	24
7/6	---	---	---	0	106	107	109	24	102	104	104	24	101	102	103	24	101	102	103	24	104	104	104	24
7/7	---	---	---	0	109	110	110	24	103	105	106	23	101	103	104	24	104	105	107	24	104	104	105	24
7/8	---	---	---	0	109	110	111	24	103	105	106	24	100	102	104	24	104	104	105	24	104	105	105	24
7/9	---	---	---	0	106	107	109	23	103	104	105	23	100	102	104	23	105	108	111	24	105	105	106	24
7/10	---	---	---	0	102	103	104	19	100	101	101	24	100	101	103	19	105	105	107	24	105	105	105	24
7/11	---	---	---	0	---	---	---	0	100	101	101	24	---	---	---	0	102	103	103	24	104	104	105	24
7/12	---	---	---	0	100	100	100	24	---	---	---	0	---	---	---	0	101	101	103	24	103	103	104	24
7/13	---	---	---	0	109	110	110	24	107	108	109	23	103	106	107	24	100	101	101	24	103	103	104	24
7/14	---	---	---	0	110	110	110	24	108	109	109	24	105	107	109	23	101	102	103	24	103	104	104	24
7/15	---	---	---	0	110	110	110	24	108	109	110	24	106	108	109	24	101	101	103	24	103	104	104	24
7/16	---	---	---	0	112	112	113	23	110	111	111	23	106	109	110	24	103	104	110	24	103	104	105	24

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High²

Total Dissolved Gas Saturation Data at Snake Sites

Date	Little Goose			Tlwtr L. Goose			Lower Mon.			Tlwtr L. Mon			Ice Harbor			Tlwtr Ice Harbor			#					
	24 h	12 h	#	24 h	12 h	#	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	Avg	Avg	High	hr					
7/3	106	106	107	24	104	105	105	24	106	107	109	22	105	106	107	22	104	105	106	24	117	118	119	24
7/4	105	106	106	24	104	104	104	2	---	---	---	0	---	---	---	0	103	103	103	1	119	119	119	1
7/5	104	104	105	24	103	103	104	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
7/6	104	105	108	24	102	103	103	24	106	106	107	24	101	102	103	23	103	104	105	24	117	118	118	24
7/7	106	107	109	24	102	103	103	24	106	107	108	24	102	103	104	24	105	105	106	24	117	117	118	24
7/8	103	103	106	12	102	103	103	23	105	106	106	24	99	100	101	21	105	105	106	24	117	117	118	24
7/9	109	110	114	15	103	103	104	24	106	107	110	24	102	104	106	24	105	106	106	24	117	118	119	24
7/10	106	107	112	24	103	103	103	24	105	106	107	24	103	104	105	24	105	105	106	24	117	118	119	24
7/11	102	102	104	24	102	102	102	24	103	103	103	13	102	102	103	13	103	103	104	17	117	117	118	17
7/12	102	102	102	24	101	101	102	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
7/13	102	102	102	24	101	101	102	24	102	102	102	24	101	102	103	24	102	102	103	24	117	117	118	24
7/14	102	102	102	24	101	101	102	24	101	102	102	24	101	102	103	24	104	105	105	24	116	117	119	24
7/15	102	102	103	24	101	101	101	24	102	102	103	24	101	101	102	24	107	107	108	24	117	117	119	24
7/16	103	105	110	24	100	100	101	24	102	103	105	24	101	102	103	24	109	110	111	24	116	117	118	24

Total Dissolved Gas Saturation Data at Lower Columbia Sites

Date	McNary-Oregon			McNary-Wash.			Tlwtr McNary			John Day			Tlwtr John Day			The Dalles			#					
	24 h	12 h	#	24 h	12 h	#	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	Avg	Avg	High	hr					
7/3	112	113	115	24	110	111	111	24	113	113	115	24	110	110	111	23	114	118	120	24	108	110	112	23
7/4	111	112	113	24	109	110	110	24	113	114	114	24	108	108	109	23	114	120	121	24	109	110	112	23
7/5	109	111	112	24	107	108	108	24	110	112	113	24	106	107	107	19	110	114	120	21	108	109	111	19
7/6	112	115	118	24	108	109	111	24	112	114	115	24	106	106	107	20	111	117	118	24	108	110	114	20
7/7	112	115	117	24	110	111	114	24	113	114	114	24	106	106	107	23	111	117	120	24	107	109	113	23
7/8	112	114	116	24	110	111	111	24	113	114	115	24	106	106	106	23	111	118	120	24	108	110	112	23
7/9	113	115	121	24	113	114	116	24	113	114	114	24	106	107	107	23	112	117	120	23	108	111	114	23
7/10	113	115	120	24	112	113	115	24	114	115	115	24	106	106	107	24	112	118	120	24	107	109	110	24
7/11	110	110	111	24	110	110	111	24	110	110	112	24	105	105	106	24	111	117	120	24	105	107	108	24
7/12	109	109	110	24	108	108	108	24	111	112	113	24	104	104	105	23	110	117	119	24	106	108	112	23
7/13	108	110	111	24	107	107	107	24	113	114	115	24	104	104	104	23	111	117	120	24	107	110	112	23
7/14	109	111	113	24	107	108	109	24	112	114	114	24	104	104	104	23	111	117	119	24	108	110	113	23
7/15	111	114	116	24	108	109	109	24	112	114	114	24	104	104	104	23	110	117	120	24	108	111	114	23
7/16	109	111	116	24	109	110	114	24	113	114	114	24	103	104	107	23	110	118	120	24	108	111	114	23

Total Dissolved Gas Saturation Data at Lower Columbia Sites

Date	Dnstr T. Dalles			Bonneville			Warrendale			Skamania			CamasWash.			Wauna Mill			#					
	24 h	12 h	#	24 h	12 h	#	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	Avg	Avg	High	hr					
7/3	110	111	111	23	100	101	101	24	116	117	119	23	117	118	123	23	113	115	117	24	107	107	108	24
7/4	108	109	109	23	100	101	101	24	114	115	116	23	115	118	123	23	113	115	117	24	106	106	107	24
7/5	115	116	117	20	110	111	111	19	115	115	116	19	116	117	120	22	112	114	117	20	106	106	107	20
7/6	108	109	109	23	100	101	101	24	114	115	118	20	116	119	123	21	114	116	119	24	107	108	109	20
7/7	110	111	111	23	100	101	101	24	115	116	117	23	116	118	121	23	112	114	117	24	107	107	108	24
7/8	108	108	109	23	100	101	101	24	113	114	115	23	114	116	120	23	113	114	117	24	107	109	110	24
7/9	110	112	113	23	100	101	101	24	115	115	116	23	116	118	121	20	113	116	118	24	108	108	109	24
7/10	109	109	110	24	100	101	101	24	114	115	117	24	114	117	121	24	120	126	132	24	108	108	109	24
7/11	108	108	109	24	100	101	101	24	114	115	117	24	115	117	121	24	112	115	117	24	106	107	107	24
7/12	106	107	107	23	100	101	101	24	114	115	117	23	114	117	121	23	113	115	117	24	107	107	107	24
7/13	107	108	110	23	100	101	101	24	113	114	115	23	114	116	120	23	113	116	118	24	107	108	108	24
7/14	112	113	114	23	100	101	101	24	116	116	118	23	119	119	121	7	113	116	118	24	108	108	109	24
7/15	112	113	114	23	100	101	101	24	116	117	118	23	115	115	115	8	115	117	120	24	108	108	108	24
7/16	111	113	113	23	100	101	101	24	115	116	116	23	116	118	120	23	115	117	119	24	108	109	110	24

¹ Data provided by the Corps of Engineers.

² Dissolved gas readings and averages have been rounded to the nearest integer.

Two-Week Summary of Passage Indices

Yearling Chinook

Date	Hatchery							Hatchery/Wild Combined			
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
07/03/98	---	---	---	---	281	64	8	5	779	329	0
07/04/98	---	---	---	---	241	57	8	12	1,041	280	62
07/05/98	---	---	---	---	300	70	24	16	940	102	0
07/06/98	---	---	---	---	229	81	0	3	323	0	0
07/07/98	---	---	---	---	249	40	0	38	403	0	49
07/08/98	---	---	---	---	712	70	4	13	131	0	11
07/09/98	---	---	---	---	264	157	4	7	218	0	0
07/10/98	---	---	---	---	88	215	8	4	107	0	0
07/11/98	---	---	---	---	79	391	4	3	120	0	0
07/12/98	---	---	---	---	72	181	8	7	106	68	0
07/13/98	---	---	---	---	40	80	8	4	38	0	0
07/14/98	---	---	---	---	57	58	8	20	69	0	14
07/15/98	---	---	---	---	39	25	0	21	1	202	0
07/16/98	---	---	---	---	49	40	12	24	39	0	0
Total:	0	0	0	0	2,700	1,529	96	177	4,315	981	136
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	193	109	7	13	308	70	10

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
07/03/98	---	---	---	---	658	103	4
07/04/98	---	---	---	---	423	171	8
07/05/98	---	---	---	---	454	144	4
07/06/98	---	---	---	---	276	183	8
07/07/98	---	---	---	---	209	199	0
07/08/98	---	---	---	---	1,005	452	4
07/09/98	---	---	---	---	319	455	4
07/10/98	---	---	---	---	22	785	0
07/11/98	---	---	---	---	20	2,117	12
07/12/98	---	---	---	---	13	1,500	28
07/13/98	---	---	---	---	9	1,040	8
07/14/98	---	---	---	---	4	306	12
07/15/98	---	---	---	---	4	255	8
07/16/98	---	---	---	---	13	175	0
Total:	0	0	0	0	3,429	7,885	100
# Days:	0	0	0	0	14	14	14
Average:	0	0	0	0	245	563	7

Wild Subyearling Chinook

	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
	653	284	84
	1,035	437	109
	1,213	397	161
	989	622	224
	1,461	661	324
	6,194	791	236
	6,821	1,064	660
	2,849	2,643	1,224
	2,082	5,109	824
	2,221	2,173	696
	857	1,794	784
	2,249	1,148	888
	2,873	864	980
	2,536	1,215	864
Total:	34,033	19,202	8,058
# Days:	14	14	14
Average:	2,431	1,372	576

The data presented in the following passage index section is preliminary and has been derived from various sources. For verification and/or origin of data, contact the operators of the Fish Passage Data System at (503) 230-4099.

Smolt indices, wild & hatchery or combined, are presented in the following order: yearling chinook (chinook 1's), subyearling chinook (chinook 0's), steelhead, coho, and sockeye. Two classes of fish counts are shown in these tables: collection counts, which account for sample rates but are not adjusted for flow; and passage indices, which are collection counts divided by the proportion of water passing through the sampling system. Collection counts may be constrained due to sampling effort or river flow. 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 hour period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Two-Week Summary of Passage Indices

Date	Hatchery Subyearling Chinook							Combined Subyearling Chinook			
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
07/03/98	---	---	---	---	0	5	4	180	447,962	69,289	6,286
07/04/98	---	---	---	---	0	0	0	393	413,149	78,006	13,172
07/05/98	---	---	---	---	0	6	8	209	462,642	49,261	4,099
07/06/98	---	---	---	---	0	4	8	206	203,094	19,340	3,764
07/07/98	---	---	---	---	0	2	0	200	287,051	13,357	5,066
07/08/98	---	---	---	---	0	0	0	413	611,760	12,926	2,793
07/09/98	---	---	---	---	0	0	8	223	345,069	15,491	22,570
07/10/98	---	---	---	---	0	16	24	146	356,429	12,929	8,253
07/11/98	---	---	---	---	0	21	0	172	437,808	22,731	3,574
07/12/98	---	---	---	---	0	21	8	122	154,541	21,955	8,019
07/13/98	---	---	---	---	0	20	24	200	351,837	21,320	2,757
07/14/98	---	---	---	---	0	28	4	216	358,718	19,072	2,667
07/15/98	---	---	---	---	0	10	8	275	251,082	33,453	6,192
07/16/98	---	---	---	---	0	0	12	260	184,273	40,396	4,022
Total:	0	0	0	0	0	133	108	3,215	4,865,415	429,526	93,234
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	0	10	8	230	347,530	30,680	6,660

Date	All Coho										
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
07/03/98	---	---	---	---	160	67	12	7	129	0	48
07/04/98	---	---	---	---	108	66	8	10	260	0	25
07/05/98	---	---	---	---	146	40	12	12	133	0	56
07/06/98	---	---	---	---	216	97	8	3	0	0	26
07/07/98	---	---	---	---	318	77	16	1	0	0	86
07/08/98	---	---	---	---	1,071	151	4	7	0	0	148
07/09/98	---	---	---	---	725	125	0	3	120	0	759
07/10/98	---	---	---	---	773	175	8	0	35	0	60
07/11/98	---	---	---	---	323	240	4	0	119	0	148
07/12/98	---	---	---	---	269	200	8	1	0	0	141
07/13/98	---	---	---	---	123	230	16	1	0	0	0
07/14/98	---	---	---	---	172	140	12	1	0	0	0
07/15/98	---	---	---	---	171	100	12	0	0	0	102
07/16/98	---	---	---	---	257	135	0	0	0	0	0
Total:	0	0	0	0	4,832	1,843	120	46	796	0	1,599
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	345	132	9	3	57	0	114

Definitions for Smolt Index Counts

WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts
 GRN (Collection) = Grande Ronde River Trap : 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) }

IMN (Collection) = Imnaha River Trap : Collection Counts
 LEW (Collection) = Snake River Trap at Lewiston : Collection Counts

Two-Week Summary of Passage Indices

Hatchery Steelhead

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
07/03/98	---	---	---	---	1,138	340	128	0	0	0	0
07/04/98	---	---	---	---	694	275	101	0	0	0	0
07/05/98	---	---	---	---	934	250	108	0	1	0	0
07/06/98	---	---	---	---	829	195	92	1	0	0	0
07/07/98	---	---	---	---	554	361	84	0	1	0	0
07/08/98	---	---	---	---	839	611	52	0	0	0	0
07/09/98	---	---	---	---	505	450	88	0	0	0	0
07/10/98	---	---	---	---	442	556	164	0	35	0	0
07/11/98	---	---	---	---	257	645	72	1	0	0	0
07/12/98	---	---	---	---	342	221	28	0	100	0	0
07/13/98	---	---	---	---	119	270	68	0	1	71	0
07/14/98	---	---	---	---	185	135	120	0	0	0	0
07/15/98	---	---	---	---	145	85	100	0	0	0	0
07/16/98	---	---	---	---	173	80	80	0	0	0	0
Total:	0	0	0	0	7,156	4,474	1,285	2	138	71	0
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	511	320	92	0	10	5	0

Wild Steelhead

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
07/03/98	---	---	---	---	56	16	12	0	0	0	12
07/04/98	---	---	---	---	39	14	4	4	0	0	0
07/05/98	---	---	---	---	30	17	12	3	134	0	0
07/06/98	---	---	---	---	26	13	4	1	0	0	0
07/07/98	---	---	---	---	26	17	4	1	0	0	0
07/08/98	---	---	---	---	9	14	24	3	0	0	0
07/09/98	---	---	---	---	11	0	16	0	0	0	0
07/10/98	---	---	---	---	11	11	4	0	0	0	0
07/11/98	---	---	---	---	26	32	16	0	0	0	0
07/12/98	---	---	---	---	13	20	4	0	0	0	0
07/13/98	---	---	---	---	4	30	4	4	0	0	0
07/14/98	---	---	---	---	0	5	16	0	0	0	0
07/15/98	---	---	---	---	0	7	12	0	0	0	0
07/16/98	---	---	---	---	4	11	16	1	0	0	0
Total:	0	0	0	0	255	207	148	17	134	0	12
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	18	15	11	1	10	0	1

Definitions for Smolt Index Counts.

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouses 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) }

BO1 (Index)= Bonneville Dam First Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 1 Flow / (Powerhouses 1 & 2 +Flow + Spill)}

Two-Week Summary of Passage Indices

Hatchery Sockeye

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
07/03/98	---	---	---	---	13	32	12	0	0	0	0
07/04/98	---	---	---	---	22	14	12	1	0	0	25
07/05/98	---	---	---	---	17	12	12	3	0	0	101
07/06/98	---	---	---	---	35	63	4	0	0	0	170
07/07/98	---	---	---	---	17	16	12	1	133	0	197
07/08/98	---	---	---	---	4	24	12	0	0	0	171
07/09/98	---	---	---	---	11	12	4	0	0	0	353
07/10/98	---	---	---	---	0	12	12	0	0	0	0
07/11/98	---	---	---	---	13	11	0	0	0	0	134
07/12/98	---	---	---	---	0	20	0	0	0	0	28
07/13/98	---	---	---	---	9	10	0	0	0	0	70
07/14/98	---	---	---	---	4	31	4	0	0	0	0
07/15/98	---	---	---	---	4	15	12	0	0	0	38
07/16/98	---	---	---	---	22	0	0	0	0	0	0
Total:	0	0	0	0	171	272	96	5	133	0	1,287
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	12	19	7	0	10	0	92

Wild Sockeye

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
07/03/98	---	---	---	---	0	5	0	0	129	0	0
07/04/98	---	---	---	---	0	2	0	0	130	0	137
07/05/98	---	---	---	---	0	0	0	0	0	0	0
07/06/98	---	---	---	---	0	2	0	3	0	0	26
07/07/98	---	---	---	---	0	0	0	4	0	0	12
07/08/98	---	---	---	---	9	0	0	3	0	0	23
07/09/98	---	---	---	---	0	0	0	0	0	0	12
07/10/98	---	---	---	---	0	0	0	0	0	0	0
07/11/98	---	---	---	---	0	0	0	3	119	0	0
07/12/98	---	---	---	---	0	0	0	1	0	0	0
07/13/98	---	---	---	---	4	0	0	0	0	0	0
07/14/98	---	---	---	---	0	0	0	1	0	0	0
07/15/98	---	---	---	---	0	0	0	0	60	0	0
07/16/98	---	---	---	---	0	0	0	1	0	103	0
Total:	0	0	0	0	13	9	0	16	438	103	210
# Days:	0	0	0	0	14	14	14	14	14	14	14
Average:	0	0	0	0	1	1	0	1	31	7	15

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

JDA and BO1 data collected for the FPC by National Marine Fisheries Service.

RIS data collected for the FPC by Chelan Co. PUD/Washington Dept. of Fish and Wildlife.

LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.

LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife. IMN data collected for the FPC by the Nez Perce Tribe.

Cumulative Adult Passage at Mainstem Dams Through July 16, 1998

	Spring Chinook						Summer Chinook						Fall Chinook					
	1998		1997		10-Yr Avg.		1998		1997		10-Yr Avg.		1998		1997		10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	38,253	762	114,000	963	71,826	2,812	17,999	2,126	24,990	1,154	17,884	2,160						
TDA	25,330	503	69,365	375	44,144	1,889	13,311	1,215	18,223	798	10,075	763						
JDA	22,495	418	62,253	327	34,393	1,541	14,145	943	18,491	691	13,181	1,351						
MCN	19,456	335	57,832	404	33,819	1,722	13,505	915	18,082	672	13,293	1,171						
IHR	12,420	131	41,398	75	18,178	714	5,304	285	8,854	89	4,332	376						
LMN	10,627	126	38,479	146	17,565	767	4,049	266	8,771	79	4,106	385						
LGS	10,218	104	37,874	108	n/a	n/a	4,006	268	8,864	47	n/a	n/a						
LWG	9,881	106	33,855	81	15,110	655	4,138	275	10,099	104	4,056	368						
PRD	4,147	37	6,780	8	10,704	173	9,805	233	8,582	176	9,167	272						
RIS	3,270	54	6,153	52	8,534	192	6,853	346	5,770	130	6,485	316						
RRH	789	53	1,856	10	2,066	52	2,885	76	2,098	62	1,720	86						
WEL	6	4	942	29	1,204	50	971	535	483	12	818	59						

	Coho						Sockeye			Steelhead		
	1998		1997		10-Yr Avg.		10-Yr		10-Yr		10-Yr	
	Adult	Jack	Adult	Jack	Adult	Jack	1998	1997	Avg.	1998	1997	Avg.
BON	1	0	1	0	5	1	12,249	41,900	48,635	23,281	25,445	28,605
TDA	0	0	0	0	0	0	8,113	28,225	37,602	8,829	9,326	11,993
JDA	0	0	0	0	0	0	9,014	30,654	37,281	14,461	9,307	9,470
MCN	0	0	0	0	0	0	8,532	31,649	37,466	6,275	6,656	8,031
IHR	0	0	0	0	0	0	0	0	5	3,823	3,108	5,202
LMN	0	0	0	0	0	0	1	1	6	2,619	2,487	4,272
LGS	0	0	0	0	n/a	n/a	0	2	n/a	2,587	2,108	n/a
LWG	0	0	0	0	0	0	1	1	4	4,669	4,123	6,495
PRD	0	1	0	0	0	0	9,641	31,242	35,094	248	194	564
RIS	9	0	5	0	1	0	6,248	19,859	23,578	160	115	472
RRH	0	0	0	0	1	0	2,655	11,533	11,075	173	94	267
WEL	0	1	0	0	0	0	1,215	6,322	8101	20	57	157

Historic counts (pre-1996) were obtained from CRITFC and compiled by the FPC.

1996, 1997, and 1998 counts were obtained from the Corps of Engineers.

1998 totals at LMN, RIS, and RRH are based on video counts accumulated through July 15.

1998 totals at LGS are based on video counts accumulated through July 14.

Adult count records at LGS have been maintained since 1993.

** - Through June 28, all (spring) chinook are being trapped and removed from the ladder at Wells prior to the counting window.

* - 1998 John Day Steelhead counts will be revised

Transportation Summary Report

Two-Week Transportation Summary from 07/03/98 to 07/16/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	5,642	31,062	6,818	4,412	170	48,104
Bypassed	0	321	0	1	0	322
Trucked	5,604	30,354	6,767	4,327	169	47,221
Barged	0	0	0	0	0	0
Total Transported	5,604	30,354	6,767	4,327	169	47,221
LITTLE GOOSE DAM						
Collected	9,410	19,328	4,677	1,842	281	35,538
Bypassed	0	0	0	0	0	0
Trucked	9,317	18,443	4,594	1,820	276	34,450
Barged	0	0	0	0	0	0
Total Transported	9,317	18,443	4,594	1,820	276	34,450
LOWER MONUMENTAL DAM						
Collected	196	8,164	1,432	120	96	10,008
Bypassed	0	4	11	0	0	15
Trucked	183	8,230	1,382	117	93	10,005
Barged	0	0	0	0	0	0
Total Transported	183	8,230	1,382	117	93	10,005
M McNARY DAM						
Collected	3,415	3,924,795	234	630	450	3,929,524
Bypassed	0	20,187	0	0	0	20,187
Trucked	0	0	0	0	0	0
Barged	3,791	3,917,518	184	618	535	3,922,646
Total Transported	3,791	3,917,518	184	618	535	3,922,646
PROJECT TOTALS						
Collected	18,663	3,983,349	13,161	7,004	997	4,023,174
Bypassed	0	20,512	11	1	0	20,524
Trucked	15,104	57,027	12,743	6,264	538	91,676
Barged	3,791	3,917,518	184	618	535	3,922,646
Total Transported	18,895	3,974,545	12,927	6,882	1,073	4,014,322

Transportation Summary Report

Cumulative Transportation Summary through 07/16/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	1,512,849	45,375	5,024,491	154,520	49,584	6,786,819
Bypassed	102,728	391	124,448	1,426	0	228,993
Trucked	34,261	35,876	54,389	5,567	585	130,678
Barged	1,449,633	8,532	4,888,200	147,145	48,911	6,542,421
Total Transported	1,483,894	44,408	4,942,589	152,712	49,496	6,673,099
LITTLE GOOSE DAM						
Collected	897,799	23,902	1,503,950	49,868	17,558	2,493,077
Bypassed	0	0	0	0	0	0
Trucked	11,581	21,261	8,877	2,262	702	44,683
Barged	874,548	1,663	1,490,712	47,129	16,696	2,430,748
Total Transported	886,129	22,924	1,499,589	49,391	17,398	2,475,431
LOWER MONUMENTAL DAM						
Collected	492,478	14,180	948,527	29,409	14,869	1,499,463
Bypassed	4,255	193	12,491	1,008	639	18,586
Trucked	1,150	10,131	3,896	308	251	15,736
Barged	485,912	3,913	931,488	28,063	13,963	1,463,339
Total Transported	487,062	14,044	935,384	28,371	14,214	1,479,075
M McNARY DAM						
Collected	1,043,592	6,956,815	327,203	125,790	511,895	8,965,295
Bypassed	1,004,308	142,919	316,015	109,189	492,648	2,065,079
Trucked	7,035	70,968	4,888	4,978	4,115	91,984
Barged	28,414	6,476,417	5,892	11,386	12,875	6,534,984
Total Transported	35,449	6,547,385	10,780	16,364	16,990	6,626,968
PROJECT TOTALS						
Collected	3,946,718	7,040,272	7,804,171	359,587	593,906	19,744,654
Bypassed	1,111,291	143,503	452,954	111,623	493,287	2,312,658
Trucked	54,027	138,236	72,050	13,115	5,653	283,081
Barged	2,838,507	6,490,525	7,316,292	233,723	92,445	16,971,492
Total Transported	2,892,534	6,628,761	7,388,342	246,838	98,098	17,254,573