



## Fish Passage Center

# Weekly Report #98 - 17

July 10, 1998

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### SUMMARY OF EVENTS:

**Water Supply:** Precipitation decreased over the region after the two wet months of May and June. Surface runoff flows are in recession all over the region. Temperatures increased across most of the areas east of the Cascades. Temperatures in the mid to high 90s were common in the Snake River Valley. Temperature departures ranged from 3 to 10 degrees above normal.

**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 9, 1998 is shown in the following table:

- Mica continues releasing Treaty outflows of 10 kcfs. The current treaty elevation is about 2447.5 ft. Storing water into Non Treaty Storage ended July 5. Non Treaty releases in the range of 5-7 kcfs began on July 8. The current accounting as on July 8 is showing: US-2.2 MAF and BC-2.06 MAF.
- Arrow Treaty Storage is one foot below full pool. The current actual elevation is only 5.5 ft below the Treaty elevation. The current outflow of about 50 kcfs is almost the same as the Treaty outflow.
- Duncan was operated for bull trout with re-

leases gradually increasing 2-4 kcfs from the beginning of the week. This operation will terminate by the end of the week, and the project will continue to refill by decreasing discharge to 0.1 kcfs.

- Libby decreased discharges to 12 kcfs on July 9 for multispecies operation and will continue with that outflow to the end of the week. The projected elevation at the end of the week is 2458 ft - 2 ft from the full pool.
- Hungry Horse is almost full to one foot of surcharge, and is passing inflows in the range of 3.4-6 kcfs.
- Grand Coulee continues to operate between 1287-1290 ft.
- Brownlee commenced drafting for summer augmentation flows with flows of 25 kcfs (not to exceed hydraulic capacity of the Hells Canyon Dam). IPCo is currently experienced transmission line problems out of Hells Canyon that will affect their ability to pass the full 25 kcfs requested by the Salmon Managers. High ambient temperatures cause thermal problems with the transmission lines. It is uncertain what might be the range of the highest reduction in the outflows if the problems continue. Current outflow is reduced only to 24 kcfs.
- Dworshak will begin ramping up on July 9 gradually to full powerhouse of 10 kcfs on July 11 at 8 am. The temperature of the outflow is to be as low as possible targeting 46-48 degrees Fahrenheit.

### Upper Snake reservoirs:

The system is full. Reservoirs are refilled for the beginning of the high irrigation season. Temperatures increased during previous week and irrigation demands are increas-

ing. Surface runoff volumes are decreasing.

Jackson Lake is currently passing inflow of 4.7 kcfs.

Palisades was refilled and is currently passing inflow of 18 kcfs.

American Falls is full and it will continue to pass inflow of 12.9 kcfs.

Milner flow at the lowest point of the Upper Snake system decreased to 1.5 kcfs on July 7 and it is considered to be the beginning of the augmentation flows from the Upper Snake. Irrigation withdrawal upstream of Minidoka increased up to 8.3 kcfs. It is expected that irrigation demands will start to increase significantly in the coming period.

Boise River Basin:

All three major reservoirs: Anderson, Arrowrock and Lucky Peak are full and the system is continuing to pass inflow. Irrigation demands increased to 1.1 kcfs. The flow at Glenwood Bridge decreased to 1.8 kcfs and remained about 2.2 kcfs at New York Canal.

**System Streamflow:** The weekly average flows are receding. Flows at McNary are already approaching summer target flows of 200 kcfs. The summary of average weekly flows for run of the river projects during the June 26-July 9 period is shown in the following Table:

Project	July 3-9	June 26-July 2
Priest Rapids	136.7 kcfs	156.4 kcfs
McNary	211.8 kcfs	252.6 kcfs
Lower Granite	74.8 kcs	88.4 kcfs
Bonneville	219.6 kcfs	262.2 kcfs

**Spill:** Low levels of spill are occurring at Lower Granite Dam in conjunction with the surface bypass collection research. The summer spill program is now being implemented at Ice Harbor Dam. Spill averaged 58 kcfs at Ice Harbor Dam over the past week.

The lower Columbia River spring spill program ended on June 30, and summer spill began on July 1, 1998. No spill is scheduled to occur at McNary Dam through the summer; however, river flows have resulted in excess

hydraulic capacity spill at this project. Spill averaged 40 kcfs at McNary Dam, 55.2 kcfs at John Day Dam, 99.7 kcfs at The Dalles Dam, and 92.4 kcfs at Bonneville Dam over the past week.

The FERC summer spill program continues at all 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 exceeded the 115% criteria by 1% on two days during the past week. Gas bubble trauma monitoring has ended for the season at the Snake River monitoring sites. Sampling of subyearling chinook 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 have finally overtaken hatchery steelhead as the dominant group in the collections at Lower Granite Dam this week. For hatchery steelhead the passage indices averaged 785 fish during July 3 to 9 at Lower Granite Dam, while for wild subyearling chinook the first five days' passage indices averaged 1,070 fish and the last two days' passage indices jumped to an average of 6,508 fish. By week end the passage index of wild subyearling chinook had risen to 1,064 fish at Little Goose Dam and 660 fish at Lower Monumental Dam, a level well above that of any other group. Parties interested in the PIT tagged subyearling hatchery chinook at Lower Granite, Little Goose, and Lower Monumental dams need to query the PTAGIS database. This is because the PIT tag override of the sample timer operation diverts nearly all PIT tagged subyearling hatchery fish directly back to the river and thus excludes them from the sample.

Columbia River Drainage. In the Mid-Columbia River at Rock Island Dam, this week's (July 3-9) passage indices of subyearling chinook (combined hatchery and wild fish) averaged 261 fish, which is a relatively minor change from the 320 fish average of the previous two weeks. In the lower Columbia River, this week saw the first peak passage index above half a million subyearling chinook at McNary Dam. On July 8, the McNary Dam subyearling chinook passage index double from the previous day to a peak of 611,760 fish. The passage indices of subyearling chinook at John Day Dam the last three days of this week have only averaged 13,925, which is the lowest level observed since June 7. Passage indices at John Day Dam will undoubtedly increase again as subyearling chinook from the recent peak passage at McNary Dam begin arriving at John Day Dam.

**Adult Fish Passage:** At Bonneville Dam, numbers of adult summer chinook ranged from 280 to 366 through the week (July 3 - July 9). The cumulative count at Bonneville Dam through July 9 was 15,954 about 69% of the 1997 and 99.9 % of the 10-year average. The count of summer chinook at McNary Dam was 11,642, about 75% and 103% of the respective 1997 and 10-year average. The turnoff into the Snake River (Ice Harbor Dam count) totaled 5,093, 60% and 125% of the 1997 and 10-year average at the project. Daily counts of adult summer chinook ranged between 5 and 82 at the Snake River projects. The cumulative count of summer chinook at Lower Granite Dam was 3,809 through July 9. The cumulative count of summer chinook at Priest Rapids Dam was 7,374. This total was greater than the 1997 and 10-year average through July 9.

The steelhead run at Bonneville Dam ranged between 565 and 1,000 for this passage week at Bonneville Dam. The season count at Bonneville Dam (March – July 9) was 15,964, and remains below either the 1997 or the 10-year average to date.

Daily sockeye counts at Bonneville Dam were in the range of 261 to 520 for the week with

the total to date of 10,695. This year's run is approximately 28% and 25% of the 1997 and 10-year average count, respectively through July 9. The sockeye passage has been increasing at the Mid-Columbia projects. The high daily count at Priest Rapids occurred on July 5 for the week with the cumulative count for the season now 6,916 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. To date, one sockeye migrating to Red Fish Lake has been detected at Lower Granite Dam.

During the first 4 weeks of summer sampling at Bonneville Dam by CRITFC, it appears that the chinook and sockeye aged 1.3 remains the dominant year class returning to the Columbia River. This year's summer chinook return of 1.3 fish (5-year old fish) accounted for 58% of the 1998 total compared to the 8-year mean of 33%. As well, sockeye aged 1.3 (5-year old fish) accounted for 68% of the sample compared to the 13-year mean average of 11%. What this means is that the 4-year old component of the chinook and sockeye run is severely lacking from the 1998 adult returns to the Columbia River with the older fish, i.e., 5-year old fish dominating the chinook and sockeye runs.

**Hatchery Releases:** Columbia Basin hatcheries completed release of subyearling summer and fall chinook for the year. The number of approximate number of hatchery fish released by River Reach is in Table below.

SNAKE RIVER	MID COLUMBIA	LOWER COLUMBIA
83,000	13,773,000	24,496,948

Of the Lower Columbia releases approximately 15.6 million were tule fall chinook released from Spring Creek Hatchery.

**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
06/26/98	142.9	0.1	147.7	0.0	159.1	12.1	168.2	17.4	168.5	20.3	164.1	6.7	176.8	33.8
06/27/98	118.8	0.1	120.1	0.0	130.1	10.9	136.5	21.1	139.2	20.4	142.7	3.4	148.5	9.2
06/28/98	109.3	0.1	111.7	0.0	121.3	10.1	126.4	8.7	126.4	20.4	126.7	2.1	132.8	1.6
06/29/98	153.2	0.1	148.7	0.0	160.4	12.1	158.7	9.3	154.4	20.3	148.2	2.2	152.2	47.6
06/30/98	151.3	0.1	152.1	0.0	159.3	12.1	168.4	9.5	168.1	27.9	168.1	5.0	173.5	63.9
07/01/98	127.8	0.1	133.3	1.7	145.2	12.2	157.5	17.7	160.3	23.6	160.4	6.1	166.2	42.8
07/02/98	124.5	0.1	125.6	0.0	133.6	10.8	134.5	18.2	135.6	30.8	131.6	20.2	144.9	15.1
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

**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
06/26/98	6.1	0.0	---	---	90.7	0.0	90.0	0.0	94.7	0.0	100.4	61.2
06/27/98	6.3	0.0	---	---	101.3	0.0	100.0	0.0	109.2	0.0	109.7	61.1
06/28/98	6.3	0.0	---	---	98.0	0.0	99.3	0.0	106.5	0.0	110.3	61.1
06/29/98	5.5	0.0	---	---	88.1	0.0	89.7	0.0	96.7	0.0	97.6	61.0
06/30/98	4.6	0.0	---	---	85.1	0.0	83.8	0.0	87.8	0.0	91.3	56.1
07/01/98	4.0	0.0	---	---	77.5	9.1	77.4	7.9	82.1	7.4	83.3	60.2
07/02/98	4.0	0.0	---	---	78.1	5.7	78.2	0.0	81.9	0.0	82.6	58.2
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	2.9	0.0	---	---	71.5	6.5	65.4	0.0	69.8	0.0	73.8	58.7

**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
06/26/98	258.8	93.2	276.6	60.1	270.3	97.0	262.9	90.1	77.0	86.1
06/27/98	275.8	105.5	275.8	59.3	266.8	79.7	285.2	91.7	77.4	106.9
06/28/98	250.8	77.7	257.2	59.0	256.1	141.6	268.7	91.9	82.7	84.9
06/29/98	242.3	76.0	247.5	59.0	248.8	160.0	255.9	91.8	77.6	77.3
06/30/98	235.3	84.2	249.5	59.5	242.8	86.3	246.3	92.1	72.1	72.9
07/01/98	262.9	99.8	267.8	59.5	257.3	169.6	265.3	92.1	83.1	80.9
07/02/98	242.2	67.1	242.8	59.6	240.2	87.2	251.1	93.2	70.6	78.1
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

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
<b>McNary Dam</b>													
	06/30/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/02/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/04/98	SubYrlng Chinook	101	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/07/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/09/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
<b>John Day Dam</b>													
	06/30/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	07/02/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/04/98	SubYrlng Chinook	100	2	1	1.00%	0.00%	1	0	0	0	0	0
	07/07/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/09/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
<b>Bonneville Dam</b>													
	06/30/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/02/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	07/04/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/07/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/09/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
<b>Rock Island Dam</b>													
	07/01/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	1	0	0	0	0	0
	07/06/98	SubYrlng Chinook	100	0	0	0.00%	0.00%	0	0	0	0	0	0
	07/08/98	SubYrlng Chinook	100	1	1	1.00%	0.00%	0	1	0	0	0	0

**Hatchery Release Summary**  
**Schedule for Last Two Weeks**  
**From 06/25/98 - 07/08/98**

Hatchery	Species	FPC LotID	Number Released	Release Dates		Release Site	River Name
				Begin	End		
<b>Nez Perce Tribe</b>							
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
	<b>Agency Total:</b>		83,000				
<b>USFWS</b>							
L White Salmon	FA Chinook	98071	2,000,077	06/25/98	06/26/98	Little White Salmon H	Little White Salmon River
	<b>Agency Total:</b>		2,000,077				
<b>WDFW</b>							
Priest Rapids	FA Chinook	98140	6,700,000	06/15/98	06/25/98	Priest Rapids H	Mid-Columbia River
Ringold	FA Chinook	98145	3,800,000	06/24/98	06/27/98	Ringold Springs H	Mid-Columbia River
Turtle Rock	SU Chinook	98022	509,000	06/22/98	06/30/98	Turtle Rock H	Mid-Columbia River
	SU Chinook	98021	524,000	06/22/98	06/30/98	Turtle Rock H	Mid-Columbia River
	<b>Agency Total:</b>		11,533,000				
	<b>Total Release:</b>		13,616,077				

## Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High<sup>2</sup>

### Total Dissolved Gas Saturation Data at Upper Columbia Sites

Date	<u>Can. Boundary</u>			<u>Grand Coulee</u>			<u>Tlwtr G. Coulee</u>			<u>Chief Joseph</u>			<u>Wells</u>			<u>Rocky Reach</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>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>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
6/26	123	124	124	21	114	114	115	17	113	113	114	17	111	112	112	20	109	109	110	21	109	109	109	23
6/27	123	124	124	21	114	114	115	20	113	113	114	20	111	111	111	15	109	109	109	19	108	109	111	24
6/28	123	124	124	24	114	114	114	24	113	113	114	24	---	---	---	0	109	110	111	23	109	109	111	24
6/29	123	124	124	24	114	114	115	24	113	113	115	24	113	113	114	16	110	110	111	21	110	111	112	22
6/30	123	124	124	21	114	115	115	24	113	113	114	24	113	113	113	23	111	111	112	23	111	112	113	22
7/1	124	124	126	24	114	115	115	24	113	114	115	24	113	114	114	23	112	112	112	21	111	112	112	22
7/2	124	124	125	24	114	114	114	24	113	113	115	24	113	114	114	23	112	112	113	20	112	112	112	23
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

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

Date	<u>Tlwtr. Rocky R.</u>			<u>Rock Island</u>			<u>Tlwtr. Rock Island</u>			<u>Wanapum</u>			<u>Tlwtr Wanapum</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>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>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
6/26	111	112	112	23	111	111	112	23	115	116	116	23	---	---	---	0	---	---	---	0	---	---	---	0
6/27	111	112	113	23	110	110	111	24	116	116	117	24	---	---	---	0	---	---	---	0	---	---	---	0
6/28	112	112	113	24	110	112	112	24	117	117	118	24	---	---	---	0	---	---	---	0	---	---	---	0
6/29	112	112	114	22	110	111	111	23	115	116	116	23	---	---	---	0	---	---	---	0	---	---	---	0
6/30	112	112	113	11	112	112	113	22	118	118	119	22	---	---	---	0	---	---	---	0	---	---	---	0
7/1	---	---	---	0	112	113	113	22	118	119	119	22	---	---	---	0	---	---	---	0	---	---	---	0
7/2	114	114	115	10	112	113	114	23	119	120	120	23	---	---	---	0	---	---	---	0	---	---	---	0
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

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

Date	<u>Dwnstr P Rapids</u>			<u>Dworshak</u>			<u>Clearwater</u>			<u>SNAKE-Lewiston</u>			<u>Lower Granite</u>			<u>Tlwtr L. Granite</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>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>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
6/26	---	---	---	0	101	102	102	24	100	101	101	24	101	102	102	24	102	102	103	24	104	104	104	2
6/27	---	---	---	0	101	101	102	10	100	101	101	24	101	101	101	5	102	102	104	21	---	---	---	0
6/28	---	---	---	0	103	104	105	24	---	---	---	0	103	105	106	24	103	104	105	24	---	---	---	0
6/29	---	---	---	0	104	104	105	24	102	103	104	24	103	105	106	24	104	104	106	13	104	104	105	11
6/30	---	---	---	0	104	105	106	24	103	104	105	24	103	105	106	24	---	---	---	0	105	105	106	24
7/1	---	---	---	0	103	103	103	24	102	103	104	24	103	104	106	24	106	107	109	24	107	108	111	23
7/2	---	---	---	0	103	103	104	24	102	103	104	23	102	104	106	24	106	107	109	24	106	106	107	24
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

## Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High<sup>2</sup>

Total Dissolved Gas Saturation Data at Snake Sites

Date	<u>Little Goose</u>			<u>TIwtr L. Goose</u>				<u>Lower Mon.</u>				<u>TIwtr L. Mon</u>				<u>Ice Harbor</u>				<u>TIwtr Ice Harbor</u>				
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#
	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr
6/26	103	103	104	24	102	102	103	24	104	104	105	24	105	106	106	24	106	107	108	24	117	119	119	24
6/27	102	102	103	21	101	101	102	20	102	102	103	7	104	104	104	7	104	105	107	21	117	118	120	22
6/28	102	102	104	24	101	101	101	24	104	105	108	24	103	104	104	24	104	104	106	24	118	119	120	24
6/29	104	106	109	24	100	101	101	24	105	106	108	24	104	104	105	24	103	103	104	24	117	118	119	24
6/30	103	104	105	24	101	101	102	24	105	106	109	24	104	104	104	24	103	104	105	24	117	118	119	24
7/1	104	104	105	24	105	109	117	24	104	104	106	24	106	108	115	24	103	103	105	24	117	118	119	24
7/2	106	106	107	24	103	104	105	20	104	105	109	24	104	104	105	24	103	104	106	24	117	119	121	24
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

Total Dissolved Gas Saturation Data at Lower Columbia Sites

Date	<u>McNary-Oregon</u>			<u>McNary-Wash.</u>				<u>TIwtr McNary</u>				<u>John Day</u>				<u>TIwtr John Day</u>				<u>The Dalles</u>				
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#
	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr
6/26	105	106	106	24	104	104	105	24	115	119	119	24	104	104	105	20	111	119	121	24	106	107	111	16
6/27	106	108	110	21	104	105	107	21	116	118	119	21	103	103	103	15	110	115	121	21	106	106	111	15
6/28	108	110	114	24	109	111	113	24	115	119	120	24	---	---	---	0	---	---	---	0	---	---	---	0
6/29	110	112	114	24	111	112	113	24	115	119	119	24	106	107	111	16	109	112	120	19	111	112	114	16
6/30	112	113	116	24	110	112	113	24	116	119	119	24	108	109	112	23	112	118	120	24	109	112	115	23
7/1	111	112	114	24	110	111	111	24	117	118	119	24	110	110	111	23	114	119	121	24	108	110	112	23
7/2	112	113	114	24	110	111	111	24	114	114	115	24	111	111	111	23	114	119	121	24	109	112	114	23
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

Total Dissolved Gas Saturation Data at Lower Columbia Sites

Date	<u>Dnstr T. Dalles</u>			<u>Bonneville</u>				<u>Warrendale</u>				<u>Skamania</u>				<u>Camas/Wash.</u>				<u>Wauna Mill</u>				
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#
	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr	Avg	Avg High	hr
6/26	109	109	112	16	109	109	110	15	113	113	115	16	113	115	117	24	110	111	113	20	107	107	108	20
6/27	112	112	113	15	100	101	101	24	116	116	117	15	116	116	118	19	113	115	118	20	107	107	108	20
6/28	---	---	---	0	100	101	101	24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
6/29	113	114	115	16	100	101	101	24	115	116	116	16	117	117	120	20	115	117	120	20	108	108	109	20
6/30	114	115	116	23	100	101	101	24	116	118	118	23	118	120	122	23	114	116	118	24	107	107	108	24
7/1	109	110	111	23	100	101	101	24	114	115	116	23	114	117	120	23	113	115	117	24	107	107	107	24
7/2	110	110	111	23	100	101	101	24	113	114	115	23	114	115	119	23	112	113	116	24	107	108	108	24
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

<sup>1</sup> Data provided by the Corps of Engineers.

<sup>2</sup> 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)
06/26/98	---	---	---	---	381	93	8	6	1,732	196	0
06/27/98	---	---	---	---	276	124	4	4	321	0	14
06/28/98	---	---	---	---	510	132	16	11	4,763	193	13
06/29/98	---	---	---	---	372	66	12	2	3,327	975	0
06/30/98	---	---	---	---	312	90	4	22	295	402	0
07/01/98	---	---	---	---	230	87	17	17	160	196	0
07/02/98	---	---	---	---	242	40	0	7	892	0	0
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
<b>Total:</b>	0	0	0	0	4,599	1,171	109	163	15,325	2,673	149
<b># Days:</b>	0	0	0	0	14	14	14	14	14	14	14
<b>Average:</b>	0	0	0	0	329	84	8	12	1,095	191	11

### Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
06/26/98	---	---	---	---	347	106	8
06/27/98	---	---	---	---	184	178	24
06/28/98	---	---	---	---	366	157	16
06/29/98	---	---	---	---	630	218	16
06/30/98	---	---	---	---	222	109	16
07/01/98	---	---	---	---	77	108	4
07/02/98	---	---	---	---	142	116	8
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
<b>Total:</b>	0	0	0	0	5,312	2,699	124
<b># Days:</b>	0	0	0	0	14	14	14
<b>Average:</b>	0	0	0	0	379	193	9

### Wild Subyearling Chinook

LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	
913	267	56	
548	216	184	
966	412	292	
498	528	352	
840	469	264	
466	363	325	
755	190	200	
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	
<b>Total:</b>	23,352	6,701	3,471
<b># Days:</b>	14	14	14
<b>Average:</b>	1,668	479	248

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)
06/26/98	---	---	---	---	0	46	12	316	258,990	65,161	3,208
06/27/98	---	---	---	---	0	13	4	406	164,772	80,501	4,907
06/28/98	---	---	---	---	0	88	8	562	336,845	86,253	14,836
06/29/98	---	---	---	---	0	31	16	457	368,425	53,615	8,520
06/30/98	---	---	---	---	0	40	8	338	220,378	59,893	3,170
07/01/98	---	---	---	---	0	12	4	267	321,053	59,669	3,819
07/02/98	---	---	---	---	0	10	4	234	364,687	42,704	2,933
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
<b>Total:</b>	0	0	0	0	0	257	84	4,404	4,805,877	705,466	99,143
<b># Days:</b>	0	0	0	0	14	14	14	14	14	14	14
<b>Average:</b>	0	0	0	0	0	18	6	315	343,277	50,390	7,082

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)
06/26/98	---	---	---	---	163	79	24	17	157	0	65
06/27/98	---	---	---	---	36	50	28	10	0	0	57
06/28/98	---	---	---	---	102	53	24	19	159	0	31
06/29/98	---	---	---	---	234	69	44	10	151	0	134
06/30/98	---	---	---	---	168	70	32	1	147	0	33
07/01/98	---	---	---	---	192	22	9	3	317	0	28
07/02/98	---	---	---	---	211	37	12	4	0	0	0
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
<b>Total:</b>	0	0	0	0	3,850	1,003	233	107	1,573	0	1,496
<b># Days:</b>	0	0	0	0	14	14	14	14	14	14	14
<b>Average:</b>	0	0	0	0	275	72	17	8	112	0	107

**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) }

# 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)
06/26/98	---	---	---	---	1,765	284	48	4	2	0	0
06/27/98	---	---	---	---	1,451	227	175	0	0	191	0
06/28/98	---	---	---	---	2,322	498	336	0	0	0	0
06/29/98	---	---	---	---	2,238	495	292	1	0	0	0
06/30/98	---	---	---	---	1,991	582	249	1	0	0	0
07/01/98	---	---	---	---	1,687	430	230	0	0	196	14
07/02/98	---	---	---	---	1,567	234	124	0	0	0	0
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
<b>Total:</b>	0	0	0	0	18,514	5,232	2,107	7	4	387	14
<b># Days:</b>	0	0	0	0	14	14	14	14	14	14	14
<b>Average:</b>	0	0	0	0	1,322	374	151	1	0	28	1

## 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)
06/26/98	---	---	---	---	77	24	12	1	0	0	0
06/27/98	---	---	---	---	64	25	32	7	0	0	0
06/28/98	---	---	---	---	60	29	48	4	0	0	0
06/29/98	---	---	---	---	78	32	36	4	0	0	0
06/30/98	---	---	---	---	51	31	22	3	0	0	0
07/01/98	---	---	---	---	77	19	22	3	0	0	0
07/02/98	---	---	---	---	78	16	8	4	0	0	0
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
<b>Total:</b>	0	0	0	0	682	267	256	38	134	0	12
<b># Days:</b>	0	0	0	0	14	14	14	14	14	14	14
<b>Average:</b>	0	0	0	0	49	19	18	3	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)
06/26/98	---	---	---	---	77	90	40	1	0	0	0
06/27/98	---	---	---	---	48	68	20	0	161	0	0
06/28/98	---	---	---	---	90	76	20	0	0	0	0
06/29/98	---	---	---	---	18	47	12	0	0	0	0
06/30/98	---	---	---	---	36	56	8	0	147	0	0
07/01/98	---	---	---	---	51	16	4	0	0	0	0
07/02/98	---	---	---	---	35	26	0	0	148	0	0
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
<b>Total:</b>	0	0	0	0	474	552	172	6	589	0	1,017
<b># Days:</b>	0	0	0	0	14	14	14	14	14	14	14
<b>Average:</b>	0	0	0	0	34	39	12	0	42	0	73

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)
06/26/98	---	---	---	---	4	2	4	7	159	196	33
06/27/98	---	---	---	---	0	0	0	1	161	191	29
06/28/98	---	---	---	---	0	0	0	7	159	0	0
06/29/98	---	---	---	---	0	2	0	1	151	195	0
06/30/98	---	---	---	---	0	0	0	1	147	0	0
07/01/98	---	---	---	---	0	0	0	0	0	0	0
07/02/98	---	---	---	---	0	0	0	1	0	0	0
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
<b>Total:</b>	0	0	0	0	13	13	4	28	1,036	582	272
<b># Days:</b>	0	0	0	0	14	14	14	14	14	14	14
<b>Average:</b>	0	0	0	0	1	1	0	2	74	42	19

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 09, 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	15,954	1,751	23,135	817	15,974	1,736						
TDA	25,330	503	69,365	375	44,144	1,889	11,846	842	16,531	577	10,075	763						
JDA	22,495	418	62,253	327	34,393	1,541	12,287	747	16,784	478	11,620	1,063						
MCN	19,456	335	57,832	404	33,819	1,722	11,642	678	15,531	428	11,252	879						
IHR	12,420	131	41,398	75	18,178	714	5,093	233	8,495	69	4,082	331						
LMN	10,627	126	38,479	146	17,565	767	3,688	217	8,336	70	3,835	331						
LGS	10,218	104	37,874	108	n/a	n/a	3,684	204	8,350	37	n/a	n/a						
LWG	9,881	106	33,855	81	15,110	655	3,809	209	9,402	89	3,703	307						
PRD	4,147	37	6,780	8	10,704	173	7,374	123	6,008	82	6,631	184						
RIS	3,270	54	6,153	52	8,534	192	4,490	131	3,640	53	4,243	180						
RRH	789	53	1,856	10	2,066	52	1,329	24	1,060	43	956	50						
WEL	6	4	942	29	1,204	50	310	110	287	2	395	29						

	Coho						Sockeye			Steelhead		
	1998		1997		10-Yr Avg.		1998	1997	10-Yr Avg.	1998	1997	10-Yr Avg.
	Adult	Jack	Adult	Jack	Adult	Jack						
BON	0	0	0	0	0	0	10695	38,009	43,043	15,964	19,217	21,008
TDA	0	0	0	0	0	0	7,082	25,130	32,285	6,104	6,203	8,082
JDA	0	0	0	0	0	0	7,724	26,082	31,004	12,432	7,264	7,177
MCN	0	0	0	0	0	0	6,914	24,084	29,080	4,541	4,699	6,131
IHR	0	0	0	0	0	0	0	0	4	2,801	2,278	4,231
LMN	0	0	0	0	0	0	0	0	4	1,799	1,791	3,550
LGS	0	0	0	0	n/a	n/a	0	1	n/a	2,331	1,733	n/a
LWG	0	0	0	0	0	0	1	1	3	4,400	3,843	6,230
PRD	0	1	0	0	0	0	6,916	18,118	23,077	105	142	372
RIS	9	0	5	0	1	0	3,121	7,044	12,417	92	81	336
RRH	0	0	0	0	1	0	1,064	3,307	5,312	137	68	191
WEL	0	0	0	0	0	0	341	1,112	3324	7	49	100

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 08.

1998 totals at LGS are based on video counts accumulated through July 07.

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.

## Transportation Summary Report

Two-Week Transportation Summary from 06/26/98 to 07/09/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
<b>LOWER GRANITE DAM</b>						
Collected	9,374	21,672	18,409	3,584	466	53,505
Bypassed	217	261	0	0	0	478
Trucked	8,988	15,780	19,036	2,981	513	47,298
Barged	0	0	0	0	0	0
<b>Total Transported</b>	<b>8,988</b>	<b>15,780</b>	<b>19,036</b>	<b>2,981</b>	<b>513</b>	<b>47,298</b>
<b>LITTLE GOOSE DAM</b>						
Collected	3,866	6,951	5,495	1,002	565	17,879
Bypassed	0	0	0	0	0	0
Trucked	3,282	5,894	5,280	931	595	15,982
Barged	0	0	0	0	0	0
<b>Total Transported</b>	<b>3,282</b>	<b>5,894</b>	<b>5,280</b>	<b>931</b>	<b>595</b>	<b>15,982</b>
<b>LOWER MONUMENTAL DAM</b>						
Collected	232	3,528	2,342	232	176	6,510
Bypassed	0	0	69	0	0	69
Trucked	236	3,050	2,338	250	221	6,095
Barged	0	0	0	0	0	0
<b>Total Transported</b>	<b>236</b>	<b>3,050</b>	<b>2,338</b>	<b>250</b>	<b>221</b>	<b>6,095</b>
<b>MCNARY DAM</b>						
Collected	10,410	3,503,269	104	1,100	1,101	3,515,984
Bypassed	0	4,005	0	0	0	4,005
Trucked	0	0	0	0	0	0
Barged	10,114	3,444,388	85	1,081	1,070	3,456,738
<b>Total Transported</b>	<b>10,114</b>	<b>3,444,388</b>	<b>85</b>	<b>1,081</b>	<b>1,070</b>	<b>3,456,738</b>
<b>PROJECT TOTALS</b>						
Collected	23,882	3,535,420	26,350	5,918	2,308	3,593,878
Bypassed	217	4,266	69	0	0	4,552
Trucked	12,506	24,724	26,654	4,162	1,329	69,375
Barged	10,114	3,444,388	85	1,081	1,070	3,456,738
<b>Total Transported</b>	<b>22,620</b>	<b>3,469,112</b>	<b>26,739</b>	<b>5,243</b>	<b>2,399</b>	<b>3,526,113</b>

## Transportation Summary Report

### Cumulative Transportation Summary through 07/09/98

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
<b>LOWER GRANITE DAM</b>						
Collected	1,512,385	31,143	5,022,927	152,624	49,532	6,768,611
Bypassed	102,728	294	124,448	1,425	0	228,895
Trucked	33,291	15,826	52,388	3,074	523	105,102
Barged	1,449,633	8,532	4,888,200	147,145	48,911	6,542,421
<b>Total Transported</b>	<b>1,482,924</b>	<b>24,358</b>	<b>4,940,588</b>	<b>150,219</b>	<b>49,434</b>	<b>6,647,523</b>
<b>LITTLE GOOSE DAM</b>						
Collected	890,631	8,840	1,501,842	48,648	17,459	2,467,420
Bypassed	0	0	0	0	0	0
Trucked	3,850	5,894	6,377	936	595	17,652
Barged	874,548	1,663	1,490,712	47,129	16,696	2,430,748
<b>Total Transported</b>	<b>878,398</b>	<b>7,557</b>	<b>1,497,089</b>	<b>48,065</b>	<b>17,291</b>	<b>2,448,400</b>
<b>LOWER MONUMENTAL DAM</b>						
Collected	492,362	7,840	947,823	29,349	14,841	1,492,215
Bypassed	4,255	189	12,487	1,008	639	18,578
Trucked	1,033	3,050	3,118	250	221	7,672
Barged	485,912	3,913	931,488	28,063	13,963	1,463,339
<b>Total Transported</b>	<b>486,945</b>	<b>6,963</b>	<b>934,606</b>	<b>28,313</b>	<b>14,184</b>	<b>1,471,011</b>
<b>M McNARY DAM</b>						
Collected	1,043,179	5,212,598	327,072	125,660	511,745	7,220,254
Bypassed	1,004,308	126,737	316,015	109,189	492,648	2,048,897
Trucked	7,035	70,968	4,888	4,978	4,115	91,984
Barged	28,098	4,944,481	5,793	11,258	12,729	5,002,359
<b>Total Transported</b>	<b>35,133</b>	<b>5,015,449</b>	<b>10,681</b>	<b>16,236</b>	<b>16,844</b>	<b>5,094,343</b>
<b>PROJECT TOTALS</b>						
Collected	3,938,557	5,260,421	7,799,664	356,281	593,577	17,948,500
Bypassed	1,111,291	127,220	452,950	111,622	493,287	2,296,370
Trucked	45,209	95,738	66,771	9,238	5,454	222,410
Barged	2,838,191	4,958,589	7,316,193	233,595	92,299	15,438,867
<b>Total Transported</b>	<b>2,883,400</b>	<b>5,054,327</b>	<b>7,382,964</b>	<b>242,833</b>	<b>97,753</b>	<b>15,661,277</b>