

The Dalles Dam Fishway Status Report

THE DALLES DAM

10/5/2014
Inspection Period: 9/28/2014 to 10/04/2014



**US Army Corps
of Engineers**
Portland District

The Dalles Project-Fisheries
P.O. Box 564
The Dalles, OR 97058-9998
Phone: 541-506-3800

Fishways are inspected twice daily plus one SCADA inspection

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections:		Temperature:
			Comments		66.4 F
Secchi: > 5.0 feet					
NORTH FISHWAY					
Exit differential	0	≤ 0.5'			
Count station differential	0	≤ 0.3'			
Weir crest depth	0	1.0' ± 0.1'			
Entrance differential	0	1.0' - 2.0'	Average	1.3	
Entrance weir N1	0	depth (≥ 8')	Average	9.4	
Entrance weir N2	0	Closed			
PUD Intake differential	0	≤ 0.5'			
EAST FISHWAY					
Exit differential	0	≤ 0.5'			
Removable weirs 154-157	0	Per forebay	Auto adjusts 1' increments.		East exit weir 156 out.
Weir 158-159 differential	0	1.0' ± 0.1'			
Count station differential	0	≤ 0.3'	Window cleaned as needed.		
Weir crest depth	0	1.0' ± 0.1'			
Junction pool weir JP6	0	depth (≥ 7')	Average	10.4	Manually adjusted as needed.
East entrance differential	0	1.0' - 2.0'	Average	1.6	
Entrance weir E1	0	No criteria	Average	5.7	Manually adjusted as needed.
Entrance weir E2	0	depth (≥ 8')	Average	12.5	
Entrance weir E3	0	depth (≥ 8')	Average	12.2	
Collection channel velocity	0	1.5 - 4 fps	Average	2.8	
Transportation channel velocity	0	1.5 - 4 fps	Average	2.7	
North channel velocity	0	1.5 - 4 fps	Average	3.3	
South channel velocity	0	1.5 - 4 fps	Average	3.5	
West entrance differential	0	1.0' - 2.0'	Average	1.6	
Entrance weir W1	0	depth (≥ 8')	Average	10.0	
Entrance weir W2	0	depth (≥ 8')	Average	9.7	
Entrance weir W3	0	No criteria	Closed		
South entrance differential	0	1.0' - 2.0'	Average	1.5	
Entrance weir S1	0	depth (≥ 8')	Average	9.0	
Entrance weir S2	0	depth (≥ 8')	Average	9.0	
JUVENILE PASSAGE					
Sluiceway operation	0	1, 8, 18			
Turbine trashrack drawdown	0	<1.5', wkly	Range	0.3-0.7	
Spill volume	0	40% ±1%	Average	On seal.	
Spill Pattern	0	per FPP	Spillbay	On seal.	
Turbine Unit Priority	0	per FPP			
Turbine 1% Efficiency	0	per FPP			

OTHER ISSUES:

Birds/Sea lions:

Bird observation data collected once daily. Refer to Avian Zone Map. Common mergansers showing up, piscivorous birds targeting emerging juvenile shad

Operations:

Entrance weir E3 in manual due to sticking. E1 and E2 set in auto. All maintaining criteria depth.

Entrance weir W1 in manual also due to sticking. Maintaining depth criteria.

Calibration completed 10/5. West entrance differential out by 0.1'.

Gatewell drawdown check 9/27. All values within criteria.

Current Outages:

T8 (MU15 & MU16) de-rated to single unit full load ops through 9/14/2017.

MU10 out 9/8 to 10/9/2014 for Annual.

MU9 out 9/8 to 10/9/2014 for Annual.

MU15 out 9/29 to 1700 10/9/2014 for Annual.

Maintenance:

North fishway pump motor replacement installed. Finishing electrical.

Parts to be ordered for equalizing valve on PUD intake bulkhead.

Entrance weirs E3 and W1 sticking in guide. Repair during winter fishway outage. Does not affect criteria operation.

Permanent east fishway exit boom purchased. Delivery Oct30. Install date to be determined.

Charter approved for repair of north fishway rock walls. PM assigned. Awaiting planning start.

Exit weir fabrication for 158 weir complete. Staged at exit for winter install. Exploring feasibility for in house fabrication of new exit weirs for 154-157.

Long term repair plans funding dependent; Upgrade east exit weirs 154-157, stabilize north ladder rock walls, remove collection channel diffusers, replace all entrance weir wheels with plastic composite wheels and repair/modify all east fishway dewatering pumps.

Fish related but non-fish funded items; spillway evaluation, spillway crane rehab, spillgate 9 wire rope replacement, HDC update fish unit reliability assessment, planning upgrade fish unit breakers and fish unit transformer replacement.

All spillway items on Critical Infrastructure list and Unfunded Requirement list.

Studies:

EFL Backup. Plans/Specs underway for 10' hole through dam, under roadway and into AWS conduit at junction pool. Construction winter '15/'16.

Test for passage with 1400cfs flow to be discussed via FPOM and FFDRWG.

PUD 'freedom' second turbine proposal underway. Field test proposal being reviewed.

Spill test for more fish passage to north fishladder completed. Benefit evaluation to be reviewed through FPOM.

Overflow passage rates observed in attempts to determine overcrowding behavior changes. Final results pending, but no obvious differences.

Spillgate Repair - No new developments for spill gate 9 repair.

Research/Contractors:

PSMFC PIT tag monitoring continues at count stations.

Dam Angling: Total 2,102 pikeminnow removed.

Normandeau fish counters at north and east count stations 16 hours/day 4/1-10/30. Investigating visibility improvements for video at north count station.

Dreissenid sampling via monthly plankton tows ongoing until water temperatures go below 50°F. Samples sent to PSU for analysis.

University of Idaho maintaining antennas and continuing downloads. Installing two additional antennas upstream and down stream of navlock for winter steelhead monitoring.

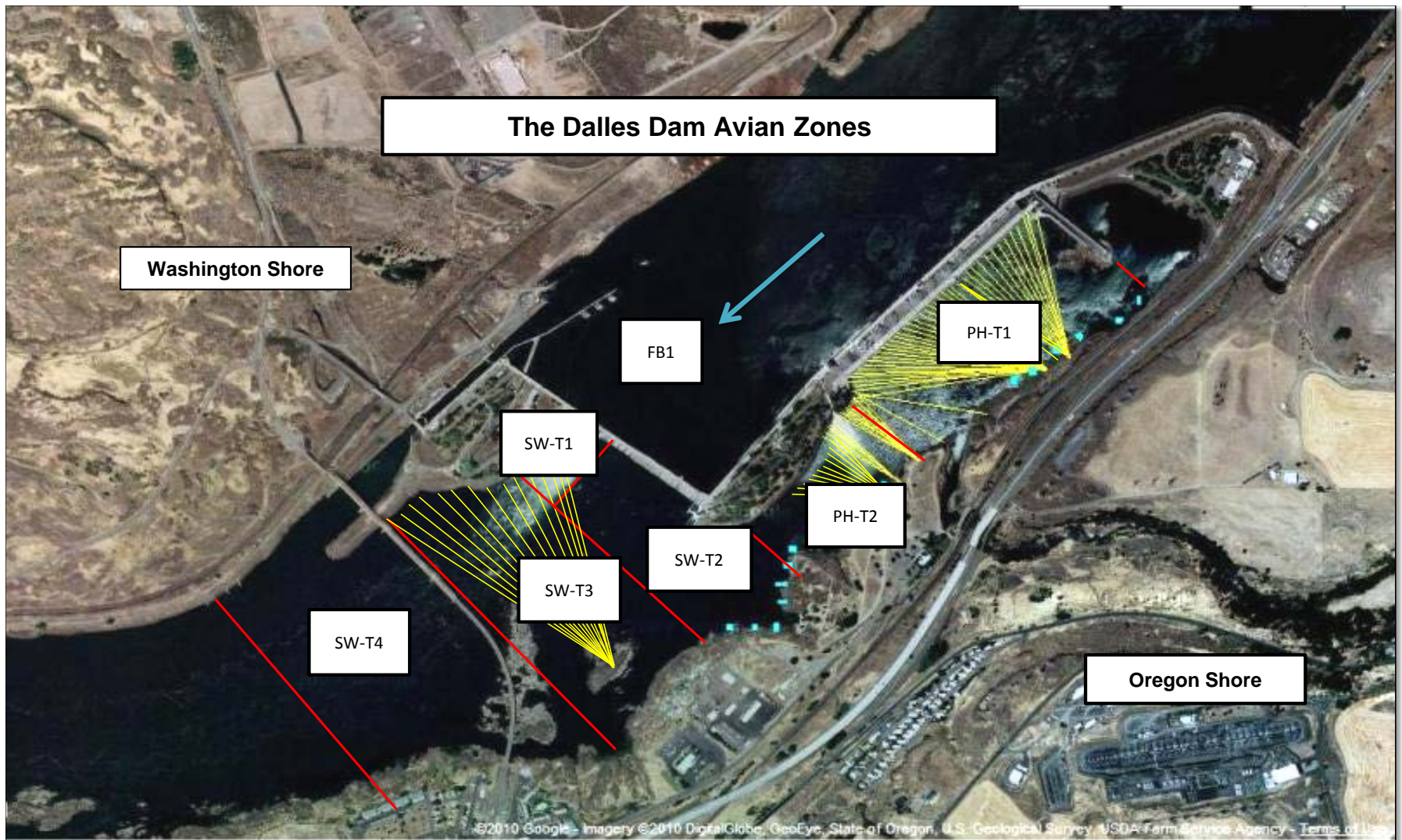
Approved by: Mike Colesar for Ron Twiner
Operation Project Manager The Dalles Dam

The Dalles East

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
9/28	7854	6331	1523	2694	1915	779	2765	2701	64	0	0	1	6
9/29	7466	6625	841	3398	2286	1112	2910	2780	130	0	0	2	12
9/30	6378	4646	1732	2239	1561	678	1637	1519	118	0	0	0	6
10/1	3942	2837	1105	1934	1236	698	1587	1474	113	0	0	0	2
10/2	5052	3708	1344	2017	1417	600	1299	1207	92	0	0	0	8
10/3	5507	4211	1296	1909	1229	680	1558	1457	101	0	0	0	2
10/4	6473	4782	1691	1999	1362	637	1976	1814	162	0	0	0	6
total	42672	33140	9532	16190	11006	5184	13732	12952	780	0	0	3	42

The Dalles North

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
9/28	898	666	232	306	199	107	597	589	8	0	0	0	4
9/29	844	676	168	326	218	108	329	299	30	0	0	0	10
9/30	885	661	224	240	145	95	355	335	20	0	0	0	4
10/1	493	402	91	172	107	65	208	198	10	0	0	0	0
10/2	582	422	160	162	115	47	203	197	6	0	0	0	4
10/3	272	198	74	98	64	34	86	82	4	0	0	0	1
10/4	469	314	155	136	96	40	155	151	4	0	0	0	0
total	4443	3339	1104	1440	944	496	1933	1851	82	0	0	0	23



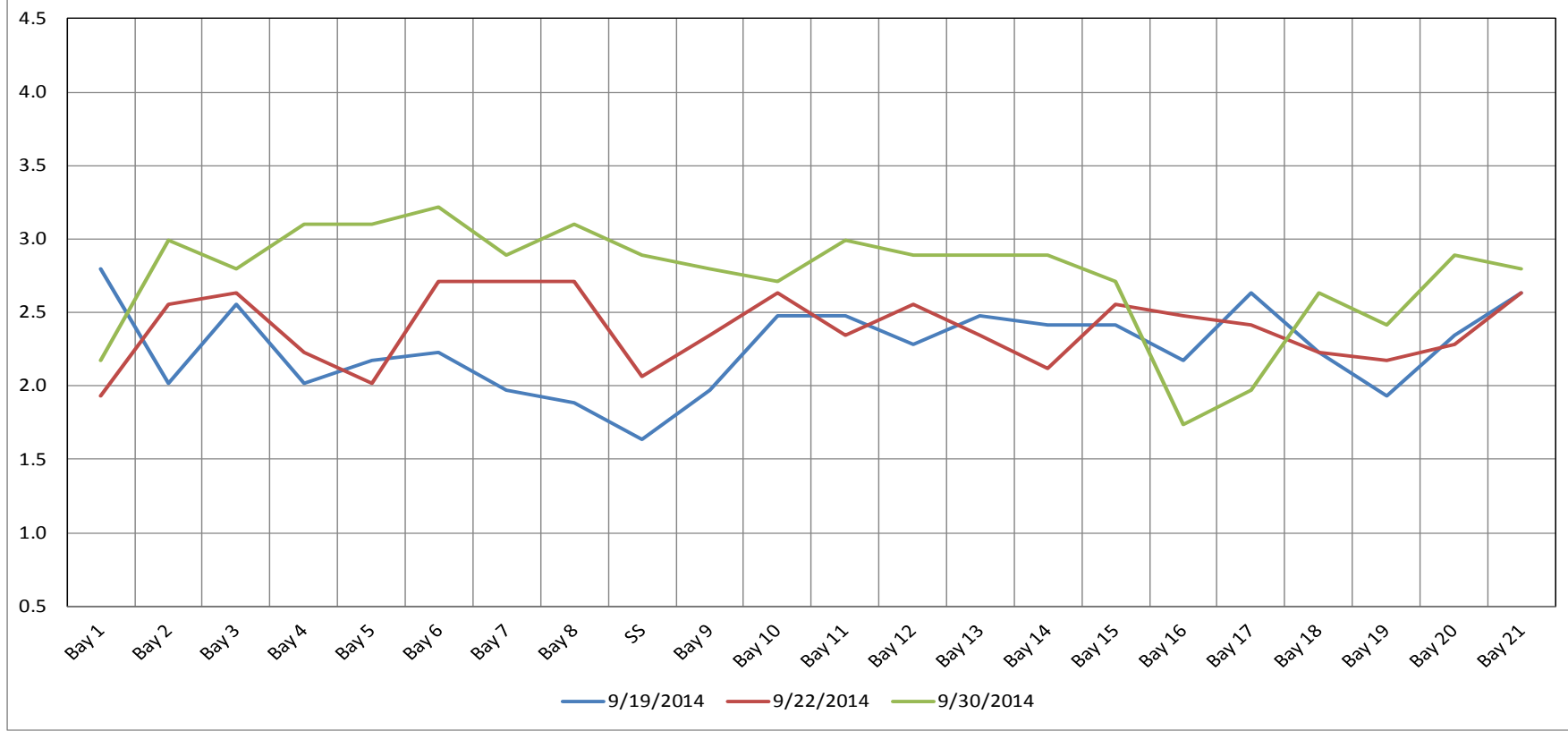
Avian lines in yellow, zones in red.

2014 Piscivorous Bird Counts

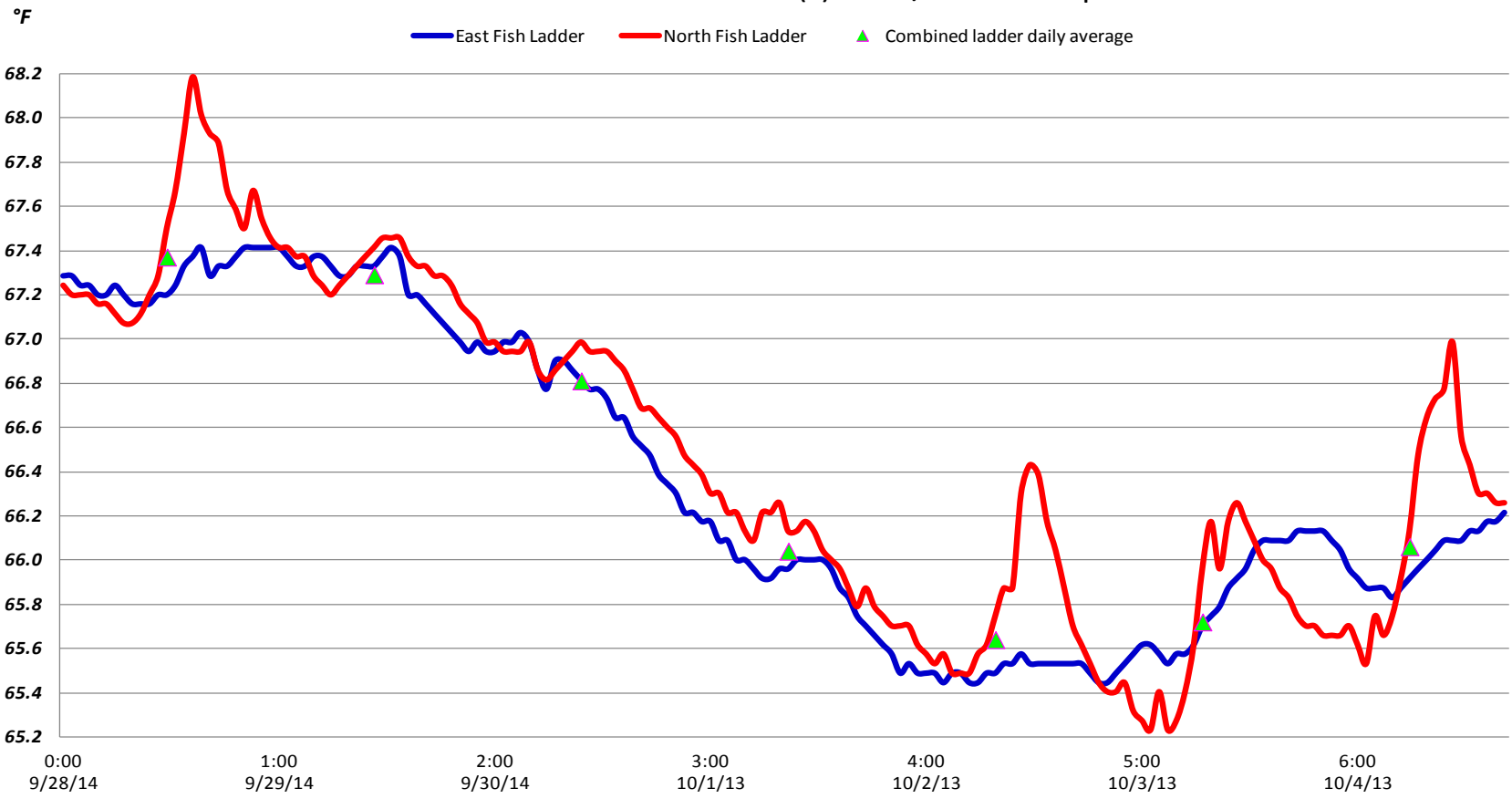
F=foraging, NF=non-foraging

Date	Session	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Other		Total birds in zone	Observer	Notes
				F	NF	F	NF	F	NF	F	NF			
9/28/14	1	14:28	FB	0	0	0	5	0	0	0	0	5	EHK	
		14:01	PH1	0	0	2	19	0	0	0	0	21		
		14:05	PH2	2	0	0	0	0	0	0	0	2		
		14:36	SW1	0	0	0	0	0	0	0	0	0		
		14:08	SW2	0	0	0	0	0	0	0	0	0		
		14:41	SW3	0	0	0	33	0	0	0	0	33		
		14:42	SW4	7	0	0	0	0	0	0	0	7		
9/29/14	1	9:33	FB	0	0	0	19	0	0	0	0	19	EHK	
		8:53	PH1	0	0	0	0	0	0	0	0	0		
		8:59	PH2	1	0	0	0	0	0	0	0	1		
		9:54	SW1	0	0	0	0	0	0	0	0	0		
		9:03	SW2	0	0	0	0	0	0	0	0	0		
		9:57	SW3	0	0	0	24	0	0	0	0	24		
		10:00	SW4	1	26	0	0	0	0	0	0	27		
9/30/14	1	15:05	FB	0	0	0	0	0	0	0	0	0	PSK	resting on rocks
		13:14	PH1	0	0	0	12	0	0	0	0	12		
		14:02	PH2	0	0	0	0	0	0	0	0	0		
		15:11	SW1	0	0	0	0	0	0	0	0	0		
		14:16	SW2	0	1	1	0	0	0	0	0	2		
		15:26	SW3	0	0	1	0	0	0	0	0	1		
		15:29	SW4	0	0	0	9	0	0	0	0	9		
10/1/14	1	11:17	FB	0	0	0	6	0	0	0	0	6	PSK	other = great blue heron
		10:15	PH1	0	0	0	10	0	0	0	1	11		
		10:20	PH2	0	0	0	0	0	0	0	0	0		
		11:40	SW1	0	0	0	0	0	0	0	0	0		
		10:29	SW2	0	0	1	0	0	0	0	0	1		
		11:45	SW3	0	0	0	25	0	0	0	0	25		
		11:47	SW4	0	12	0	0	0	0	0	0	12		
10/2/14	1	15:11	FB	0	0	0	0	0	0	0	0	0	PSK	
		14:02	PH1	0	0	0	0	0	0	0	0	0		
		14:16	PH2	0	0	0	0	0	0	0	0	0		
		15:00	SW1	0	0	0	0	0	0	0	0	0		
		14:18	SW2	0	0	0	0	0	0	0	0	0		
		15:17	SW3	0	0	0	0	0	0	0	0	0		
		15:21	SW4	0	0	0	0	0	0	0	0	0		
10/3/14	1	9:46	FB	0	0	0	63	0	0	0	1	64	jwr	GBHE 1X GBHE, 3X COME GBHE
		8:12	PH1	0	0	0	2	0	0	0	4	6		
		8:20	PH2	0	0	0	0	0	0	0	0	0		
		9:50	SW1	0	3	0	0	0	0	0	1	4		
		8:24	SW2	0	1	3	0	0	0	0	0	4		
		9:54	SW3	0	0	0	39	0	0	0	0	39		
		9:56	SW4	0	51	0	10	0	0	0	0	61		
10/4/14	1	13:32	FB	0	0	2	3	0	0	0	0	5	jwr	6X COME
		13:06	PH1	0	1	0	31	0	0	0	6	38		
		13:10	PH2	13	3	0	0	0	0	0	0	16		
		13:28	SW1	0	0	0	0	0	0	0	0	0		
		13:14	SW2	0	0	0	0	0	0	0	0	0		
		13:24	SW3	0	2	2	43	0	0	0	0	47		
		13:26	SW4	0	48	0	1	0	0	0	0	49		

The Dalles Dam Collection Channel Velocities (In Criteria 1.5 - 4.0 fps)



The Dalles Dam Adult Fish Ladder(s) River/Water Temperatures



Temperatures

67.4
67.3
66.8
66.0
65.6
65.7
66.1
AVG: 66.4

Secchi:

5.0
5.0
5.0
5.0
5.0
5.0
5.0
AVG: 5.0

**The Dalles Dam Daily Readings and Averages for
Temperatures, Secchi, Entrances, and Spill**

= out of criteria

North Ladder			East Ladder												Spill KCFS		
North Entrance		East Entrance						West Entrance			South Entrance						
Date:	Differential	N1 Depth	Differential	E1 Depth	E2 Depth	E3 Depth	JP 6	Differential	W1 Depth	W2 Depth	W3 Depth	Differential	S1 Depth	S2 Depth			
9/28			1.7	7.0	13.0	12.7	10.6	1.5	10.3	9.5	Closed	1.6	8.7	8.7	On Seal		
	1.3	9.5	1.7	6.9	12.1	12.4	10.5	1.6	10.0	9.6		1.6	8.6	8.6			
	1.4	9.4	1.8	6.9	13.0	12.4	10.4	1.5	10.1	9.5		1.5	9.0	9.0			
9/29																	
	1.2	9.4	1.7	7.0	13.1	12.0	10.0	1.5	9.6	9.4		1.4	9.0	9.0			
	1.3	9.4	1.8	7.0	13.0	12.2	10.2	1.5	9.8	9.6		1.4	9.1	9.1			
9/30			1.7	7.1	13.0	12.2	10.1	1.6	9.6	9.5			1.5	9.0		9.0	
	1.2	9.4	1.7	7.3	13.0	12.2	10.1	1.5	9.7	9.6		1.4	9.1	9.0			
	1.3	9.4	1.7	7.1	12.9	12.2	10.2	1.5	9.9	9.6		1.5	8.9	9.0			
10/1																	
	1.4	9.3	1.7	7.1	13.1	12.4	10.4	1.6	10.0	9.6		1.4	9.1	9.1			
	1.3	9.3	0.9	9.2	13.0	13.1	10.5	1.6	10.1	9.4		1.5	9.0	9.0			
10/2			1.1	3.4	12.2	13.2	10.4	1.5	10.2	9.6			1.5	10.2		9.6	
	1.2	9.3	1.7	2.3	12.1	11.8	10.3	1.7	9.9	9.4		1.6	9.0	9.0			
	1.4	9.2	1.5	2.7	12.1	12.2	10.7	1.6	10.1	9.6		1.6	9.0	9.0			
10/3			1.7	2.5	12.0	12.0	10.5	1.8	10.1	9.5		1.6	9.0	9.0			
	1.3	9.3	1.6	5.1	12.0	11.8	10.3	1.5	10.1	10.1	1.6	9.0	9.0				
	1.4	9.4	1.5	5.9	12.0	11.8	10.3	1.5	10.1	10.0	1.5	8.9	9.0				
10/4			1.4	6.0	12.0	12.0	10.5	1.6	10.0	10.0		1.6	8.9	9.0			
	1.3	9.4	1.5	4.0	11.9	11.9	10.4	1.5	10.0	10.0	1.6	8.9	8.9				
	1.4	9.3	1.5	4.1	12.0	12.0	10.5	1.5	10.0	10.1	1.5	9.0	9.0				
AVG:	1.3	9.4	1.6	5.7	12.5	12.2	10.4	1.6	10.0	9.7	Closed	1.5	9.0	9.0			