

The Dalles Dam Fishway Status Report

Date: 8/17/2014
Inspection Period: 8/10-16/14

THE DALLES DAM



US Army Corps
of Engineers
Portland District

The Dalles Project-Fisheries
P.O. Box 564
The Dalles, OR 97058-9998
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Fishways are inspected twice daily plus one SCADA inspection

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections:		Temperature:	
			21	Comments	72.1	F
Secchi: 4.9 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.			
Weir 158-159 differential	0	1.0' ± 0.1'				
Count station differential	0	≤ 0.3'	Window cleaned 7/31/2014.			
Weir crest depth	0	1.0' ± 0.1'				
Junction pool weir JP6	0	depth (≥ 7')	Average	8.8	Manually adjusted as needed.	
East entrance differential	3	1.0' - 2.0'	Average	1.8	Fish unit outage 8/15-8/16	
Entrance weir E1	0	No criteria	Average	2.8		
Entrance weir E2	3	depth (≥ 8')	Average	12.2		
Entrance weir E3	2	depth (≥ 8')	Average	9.2		
Collection channel velocity	0	1.5 - 4 fps	Average	2.6		
Transportation channel velocity	0	1.5 - 4 fps	Average	2.8		
North channel velocity	0	1.5 - 4 fps	Average	2.4		
South channel velocity	0	1.5 - 4 fps	Average	4.0		
West entrance differential	3	1.0' - 2.0'	Average	1.3		
Entrance weir W1	3	depth (≥ 8')	Average	7.9		
Entrance weir W2	4	depth (≥ 8')	Average	7.6		
Entrance weir W3	0	No criteria	Closed			
South entrance differential	3	1.0' - 2.0'	Average	1.3		
Entrance weir S1	4	depth (≥ 8')	Average	8.1		
Entrance weir S2	4	depth (≥ 8')	Average	7.9		
JUVENILE PASSAGE						
Sluiceway operation	11	1, 8, 18	Closed for VBS removal and sealing orifices; reset incorrectly but has since been fixed			
Turbine trashrack drawdown	0	<1.5', wkly	Range	0.0' - 0.3'		
Spill volume	0	40% ±1%	Average	40.0	See average tab for daily averages.	
Spill Pattern	0	per FPP				
Turbine Unit Priority	6	per FPP	Main Units 13 and 14 OOS for maintenance. See Current Outages below.			
Turbine 1% Efficiency	0	per FPP				

OTHER ISSUES:

Birds/Sea lions:

Bird observation data collected once daily. Refer to Avian Zone Map.

Cormorants continue to forage in forebay near east fishway exit. Easily hazed by walking on forebay deck.

Operations:

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

Gatewell drawdown check 8/3. All in criteria.

Calibration check 8/10. All within 0.3 limit.

Current Outages:

F1 forced out of service ~noon 8/15 due to leaking lower guide bearing cooler

F2 forced out of service ~ 8PM 8/15 due to water in lower guide bearing cooler

MU12 out of service 8/11 to 8/21/2014 for Annual and VBS Removal

MU13 out of service 7/21 to 8/28/2014 for Annual

MU14 out of service 7/21 to 8/28/2014 for overhaul

T8 (MU15 & MU16) de-rated to single unit full load ops

Maintenance:

Fish units F1 and F2 were forced out of service 8/15 for lower guide bearing leaking cooling system. Maintenance was immediately notified to be brought in on overtime and pulled off other jobs. A cooler normally used for main units was modified and installed. Investigation is underway to determine why this affected both units. A possible water hammer was a result of valve closures. Operational changes may be applied. Spare coolers for both lower and upper guide bearing coolers will also be fabricated.

North fishway pump motor replacement delivered. Installation prep starting. To be installed prior to Jan 2015 dewatering.

Collection channel pump #1 removed 8/4 for motor failure repair. Refer to Pic tab. Repair underway.

Parts on order for install of equalizing valve on PUD intake bulkhead for next winter dewatering.

East entrance weir E3 sticking in guide. To be addressed this winter. Does not affect criteria operation.

Permanent boom to be purchased for protecting east fishway from upstream oil spills. Specs determined. Purchase underway.

Long term repair plans funding dependent; Upgrade east exit weirs 154-157, awaiting PM assignment to 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 and/or 10/11 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.

New weir 158 leafs fabricated. Wheel and seal install next. Completion by Oct1. Installation mid Dec.

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 pits excavation between fishladder and fishlock parking area in Nov. ADCP flow velocity survey also in Nov.

PUD - PUD 'freedom' second turbine proposal for north fishway in FERC review process. Corps comments provided.

Spill Attraction - Record fall Chinook runs expected in 2014. Concern for overcrowding in east fish ladder. ERDC model trip planned for Aug 25-28 to determine potential spill operation to attract more fish to the north fish ladder. Field observations planned to monitor possible passage changes.

Spillgate Repair - District determining funding source for repair of spillgate 9 or spillgate 10/11. Will run both at ERDC model trip to help in decision.

Spill pattern would use these bays for river flow over 445 kcfs. Fish passage benefit of these bays is to be determined.

Research/Contractors:

PSMFC PIT tag monitoring continues at count stations.

Columbia River Northern Pikeminnow Management Dam Angling: weekly total 75 pikeminnow for grand total of 1,747 pikeminnow removed.

Nez Perce continuing lamprey collection at east count station traps through end of Aug. No count report provided.

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

PSMFC sampling at PUD completed for season.

USDA bird hazing completed for season.

Zebra mussel monitoring with plankton samples ongoing. Samples provided to PSU for analysis.

University of Idaho maintaining antennas and continuing downloads.

Removal last set of 3 derelict Vertical Barrier Screens from MU 12 gate well slot completed.

Approved by: Mike Colesar

Acting Operation Project Manager The Dalles Dam

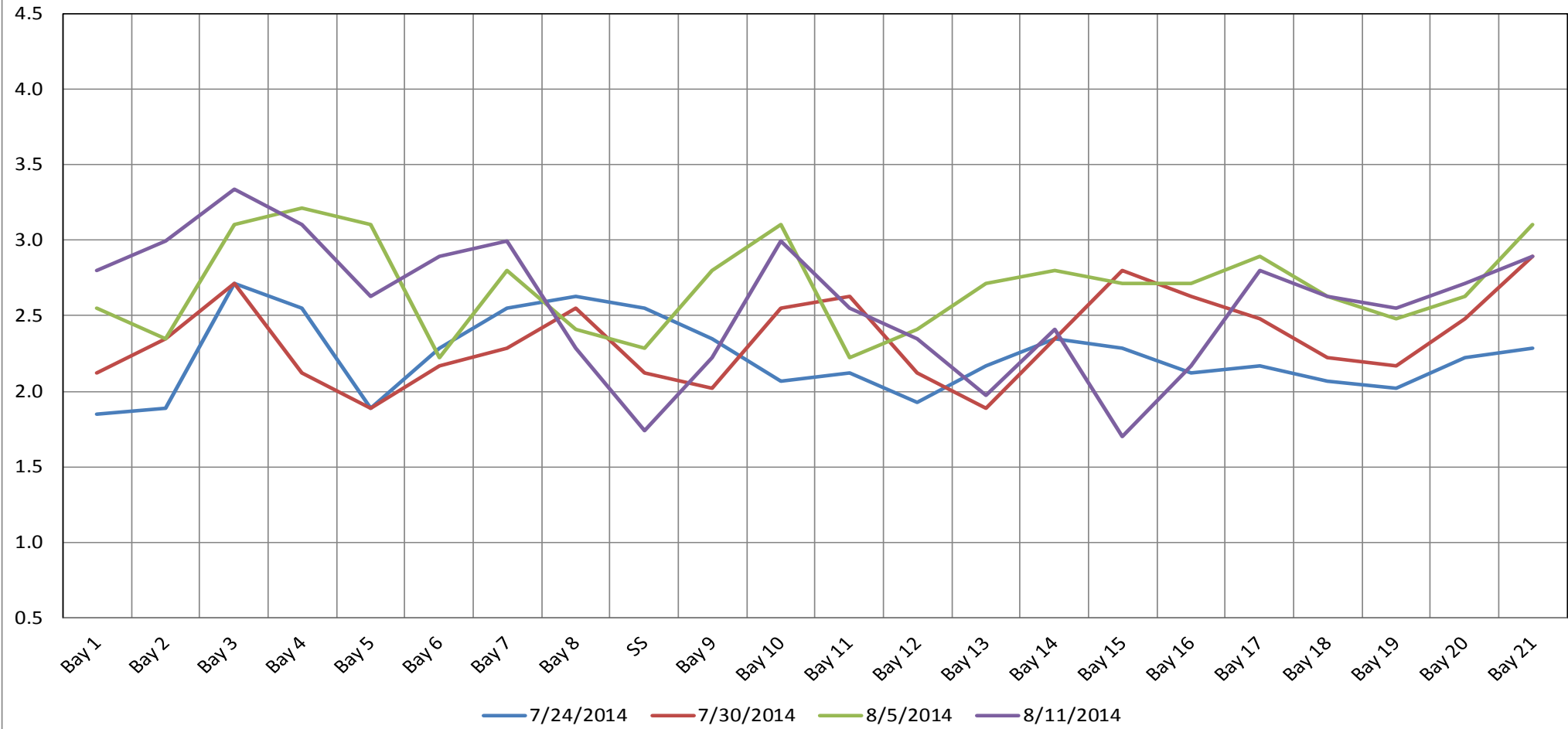
The Dalles East

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
10-Aug-14	438	300	138	1146	589	557	0	0	0	40	0	0	74
11-Aug-14	506	358	148	921	413	508	0	-1	1	19	0	0	53
12-Aug-14	515	400	115	888	416	472	0	0	0	19	0	0	109
13-Aug-14	756	504	252	689	341	348	1	1	0	13	0	0	43
14-Aug-14	737	517	220	694	347	347	2	2	0	7	0	0	66
15-Aug-14	580	395	185	642	308	334	0	0	0	8	0	0	18
16-Aug-14	42	16	26	116	67	49	2	1	1	0	0	0	5
total	3574	2490	1084	5096	2481	2615	5	3	2	106	0	0	368

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
10-Aug-14	103	79	24	595	295	300	0	0	0	20	0	0	96
11-Aug-14	119	94	25	516	247	269	0	0	0	12	0	0	97
12-Aug-14	121	95	26	330	168	162	0	0	0	18	0	0	91
13-Aug-14	191	154	37	219	100	119	0	0	0	2	0	0	98
14-Aug-14	287	235	52	359	172	187	0	0	0	11	0	0	59
15-Aug-14	211	168	43	353	161	192	1	1	0	2	0	0	64
16-Aug-14	639	559	80	824	408	416	0	0	0	0	0	0	56
total	1671	1384	287	3196	1551	1645	1	1	0	65	0	0	561

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





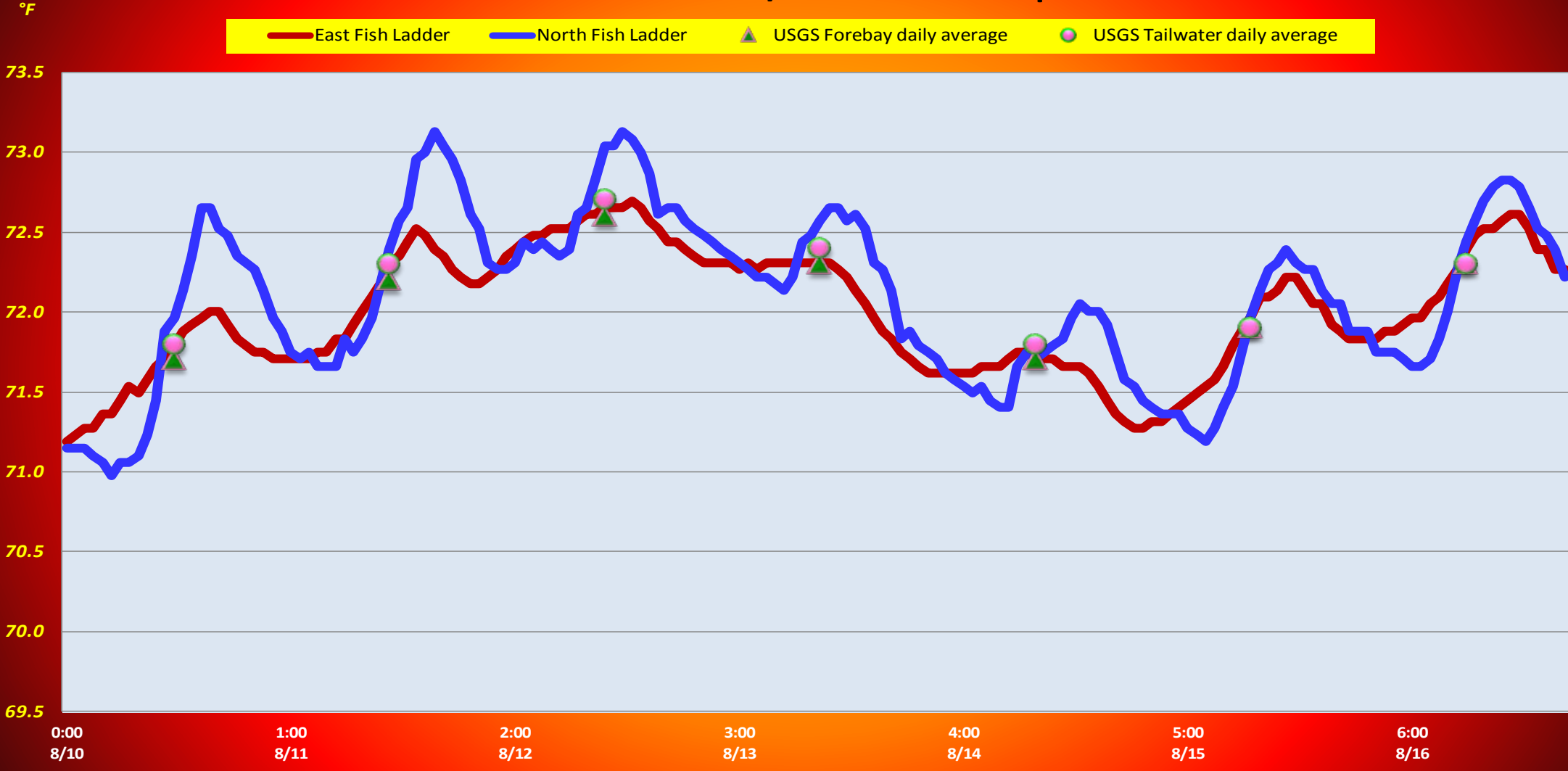
Hazing activity primarily in SW-T3 and SW-T4

2014 Piscivorous Bird Counts

F=foraging, NF=non-foraging

Date	Session	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Other		Total birds in	Observer	Notes
				F	NF	F	NF	F	NF	F	NF			
8/10/14	1	13:20	FB	0	0	1	32	0	0	0	0	33	jwr	other=osprey
		12:35	PH1	0	0	0	0	0	0	0	1	1		
		12:41	PH2	0	0	0	0	0	0	0	0	0		
		13:21	SW1	13	0	0	0	0	0	0	0	13		
		12:44	SW2	0	0	0	0	0	0	0	0	0		
		13:35	SW3	11	35	0	1	0	0	0	0	47		
		13:17	SW4	7	26	0	4	0	0	0	0	37		
8/11/14	1	9:39	FB	0	0	1	97	0	0	0	4	102	jwr	other=osprey other=osprey other=osprey
		8:50	PH1	0	0	2	0	0	0	0	1	3		
		9:01	PH2	0	0	0	0	0	0	0	0	0		
		9:36	SW1	2	9	0	0	0	0	0	0	11		
		9:05	SW2	1	0	0	0	0	0	1	0	2		
		9:33	SW3	22	28	0	0	0	0	0	0	50		
		9:35	SW4	1	24	0	0	0	0	0	0	25		
8/12/14	1	14:45	FB	0	0	0	10	0	0	0	0	10	PSK	4 cormorants resting on rocks.
		13:19	PH1	0	0	4	4	0	0	0	0	8		
		13:31	PH2	0	0	0	0	0	0	0	0	0		
		14:25	SW1	0	0	0	0	0	0	0	0	0		
		13:35	SW2	0	0	1	0	0	0	0	0	1		
		14:10	SW3	5	0	0	0	0	0	0	0	5		
		14:14	SW4	19	33	0	3	0	0	0	0	55		
8/13/14	1	8:29	FB	0	0	18	82	0	0	0	0	100	jwr	they may have been spooked off tuff boom? other=osprey
		7:41	PH1	0	0	0	0	0	0	0	1	1		
		7:48	PH2	0	0	0	0	0	0	0	0	0		
		8:28	SW1	0	7	0	0	0	0	0	0	7		
		7:50	SW2	0	0	0	0	0	0	0	0	0		
		7:57	SW3	14	11	0	0	0	0	0	0	25		
		8:01	SW4	1	16	0	0	0	0	0	0	17		
8/14/14	1	13:35	FB	0	0	3	37	0	0	2	0	42	jwr	osprey GBH
		12:52	PH1	0	0	0	0	0	0	0	1	1		
		21:25	PH2	0	0	0	0	0	0	0	0	0		
		13:30	SW1	0	0	0	0	0	0	0	0	0		
		13:00	SW2	0	0	0	0	0	0	0	0	0		
		13:38	SW3	1	23	2	0	0	0	0	0	26		
		13:40	SW4	1	6	4	0	0	0	0	0	11		
8/15/14	1	8:45	FB	0	0	25	35	0	0	0	0	60	ehk	GBH
		8:18	PH1	0	0	0	0	0	0	0	1	1		
		8:28	PH2	0	0	0	0	0	0	0	0	0		
		9:19	SW1	0	0	0	0	0	0	0	0	0		
		8:31	SW2	0	0	0	0	0	0	0	0	0		
		9:04	SW3	0	0	0	0	0	0	0	0	0		
		9:07	SW4	0	6	0	0	0	0	0	0	6		
8/16/14	1	15:18	FB	0	0	0	23	0	0	0	0	23	ehk	
		14:26	PH1	0	0	0	6	0	0	0	0	6		
		14:34	PH2	0	0	0	0	0	0	0	0	0		
		15:06	SW1	0	0	0	0	0	0	0	0	0		
		14:37	SW2	0	0	0	0	0	0	0	0	0		
		14:55	SW3	0	0	1	0	0	0	0	0	1		
		14:57	SW4	36	39	0	0	0	0	0	0	75		

The Dalles Dam Ladder/River Water Temperatures



	Forebay	Tailwater	Secchi:
USGS Data	71.7	71.8	5.0
	72.2	72.3	5.0
	72.6	72.7	5.0
	72.3	72.4	5.0
	71.7	71.8	5.0
	71.9	71.9	4.0
AVG:	72.1		AVG: 4.9

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

= out of criteria

Date:	North Ladder		East Ladder											Spill%	
	North Entrance		East Entrance					West Entrance				South Entrance			
	Differential	N1 Depth	Differential	E1 Depth	E2 Depth	E3 Depth	JP 6	Differential	W1 Depth	W2 Depth	W3 Depth	Differential	S1 Depth	S2 Depth	
8/10/14			1.6	2.0	13.5	10.2	9.2	1.4	10.0	10.0	Closed	1.5	9.6	9.4	
	1.2	10.0	1.6	1.9	13.4	10.1	9.1	1.4	9.9	9.9		1.5	9.5	9.5	
	1.3	9.9	1.5	2.0	13.5	10.5	9.5	1.4	10.0	10.0		1.6	9.5	9.4	
8/11/14	1.7	2	13.5	8.7	13.5	8.7	7.7	1.4	9	9		1.4	9.6	9.6	
	1.2	9.9	1.5	3.4	13.6	8.8	7.8	1.5	9	8.9		1.5	9.4	9.6	
	1.4	10.1	1.6	4.6	13.5	9.6	8.6	1.6	8.9	9.0		1.5	9.4	9.4	
8/12/14			1.4	4.4	13.4	9.8	8.8	1.6	9.1	9.0		1.5	9.5	9.6	
	1.2	9.9	1.4	3.6	13.4	9.4	8.4	1.6	9.0	9.0		1.4	9.6	9.5	
	1.3	10.1	1.6	3.6	13.6	10.4	9.4	1.7	9.1	9.0		1.5	9.6	9.5	
8/13/14			1.4	3.5	13.6	10.4	9.4	1.6	8.9	9.0		1.6	9.3	9.4	
	1.2	10.0	1.4	0.4	13.5	10.3	9.3	1.5	9.5	9.5		1.5	9.5	9.4	
	1.3	10.0	1.6	3.4	13.5	10.9	9.9	1.6	9.5	9.4		1.5	9.5	9.5	
8/14/14			1.6	3.3	13.3	8.8	7.8	1.4	9.4	9.5		1.5	9.5	9.4	
	1.1	10.0	1.5	3.5	13.5	8.8	7.8	1.5	8.9	9.0		1.4	9.4	9.5	
	1.2	10.0	1.6	3.6	13.6	9.7	8.7	1.6	9.0	9.1		1.5	9.5	9.6	
8/15/14			1.4	3.5	13.4	9.3		1.5	8.9	9.1	1.5	9.6	9.5		
	1.2	9.7	1.4	3.6	13.5	9.8	8.8	1.6	8.9	9.0	1.5	9.5	9.6		
	1.3	9.7	1.1	0.0	7.0	8.0	8.8	1.4	8.1	2.1	1.6	7.9	3.9		
8/16/14			0.0	0.0	6.3	6.3		0.0	0.0	0.0	0.0	0.0	0.0		
	1.3	9.8	0.0	0.0	5.9	5.9	8.5	0.0	0.0	0.0	0.0	0.0	0.0		
	1.4	9.7	0.0	0.0	8.1	8.1	8.8	0.0	0.0	0.0	0.0	0.0	0.0		
AVG:	1.3	9.4	1.8	2.8	12.2	9.2	8.8	1.3	7.9	7.6	Closed	1.3	8.1	7.9	40.0

Spill % values represent daily average from operations status report

Fish units forced out of service ~noon 8/15 and 8/16