

The Dalles Dam Fishway Status Report

Date: 9/27/2014
 Inspection Period: 9/21/2014 to 9/27/2014

THE DALLES DAM



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: 21		Temperature: 67.5 F
			Comments		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	1.4	
Entrance weir N1	0	depth (≥ 8')	Average	9.3	
Entrance weir N2	0	Closed			
PUD Intake differential	0	≤ 0.5'			
EAST FISHWAY					
Exit differential	0	≤ 0.5'			
Removable weirs 154-157	1	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	11.2	Manually adjusted as needed.
East entrance differential	0	1.0' - 2.0'	Average	1.6	
Entrance weir E1	0	No criteria	Average	10.3	Manually adjusted as needed.
Entrance weir E2	0	depth (≥ 8')	Average	13.0	
Entrance weir E3	0	depth (≥ 8')	Average	13.1	
Collection channel velocity	0	1.5 - 4 fps	Average	2.4	
Transportation channel velocity	0	1.5 - 4 fps	Average	2.3	
North channel velocity	0	1.5 - 4 fps	Average	2.3	
South channel velocity	0	1.5 - 4 fps	Average	3.2	
West entrance differential	0	1.0' - 2.0'	Average	1.5	
Entrance weir W1	0	depth (≥ 8')	Average	10.7	
Entrance weir W2	0	depth (≥ 8')	Average	9.0	
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	8.7	
Entrance weir S2	0	depth (≥ 8')	Average	8.7	
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	2	per FPP	MU 9 & 10 out of service.		
Turbine 1% Efficiency	0	per FPP			

OTHER ISSUES:

Birds/Sea lions:

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

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 9/26. Electricians notified about east entrance; all other values were in criteria.

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

Current Outages:

T8 (MU15 & MU16) de-rated to single unit 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.

Maintenance:

Awaiting parts for north fishway pump motor replacement. Will be operational for Jan 2015 dewatering.

Parts on order for install of equalizing valve on PUD intake bulkhead. Modification November 2014.

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

Permanent east fishway exit boom purchase approved. 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. No new developments.

Spill test for more fish passage to north fishladder completed. Increased passage was observed. Benefit to be evaluated through FPOM.

Overcrowding observations made on east ladder during peak passage. Overflow passage rates observed. Final results pending.

Spillgate Repair - ERDC model confirmed spill gate 9 repair as most beneficial over spill gates 10 and 11. FPOM approved new priority.

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.

Zebra mussel monitoring with plankton samples ongoing. Samples provided 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: Ron Twiner

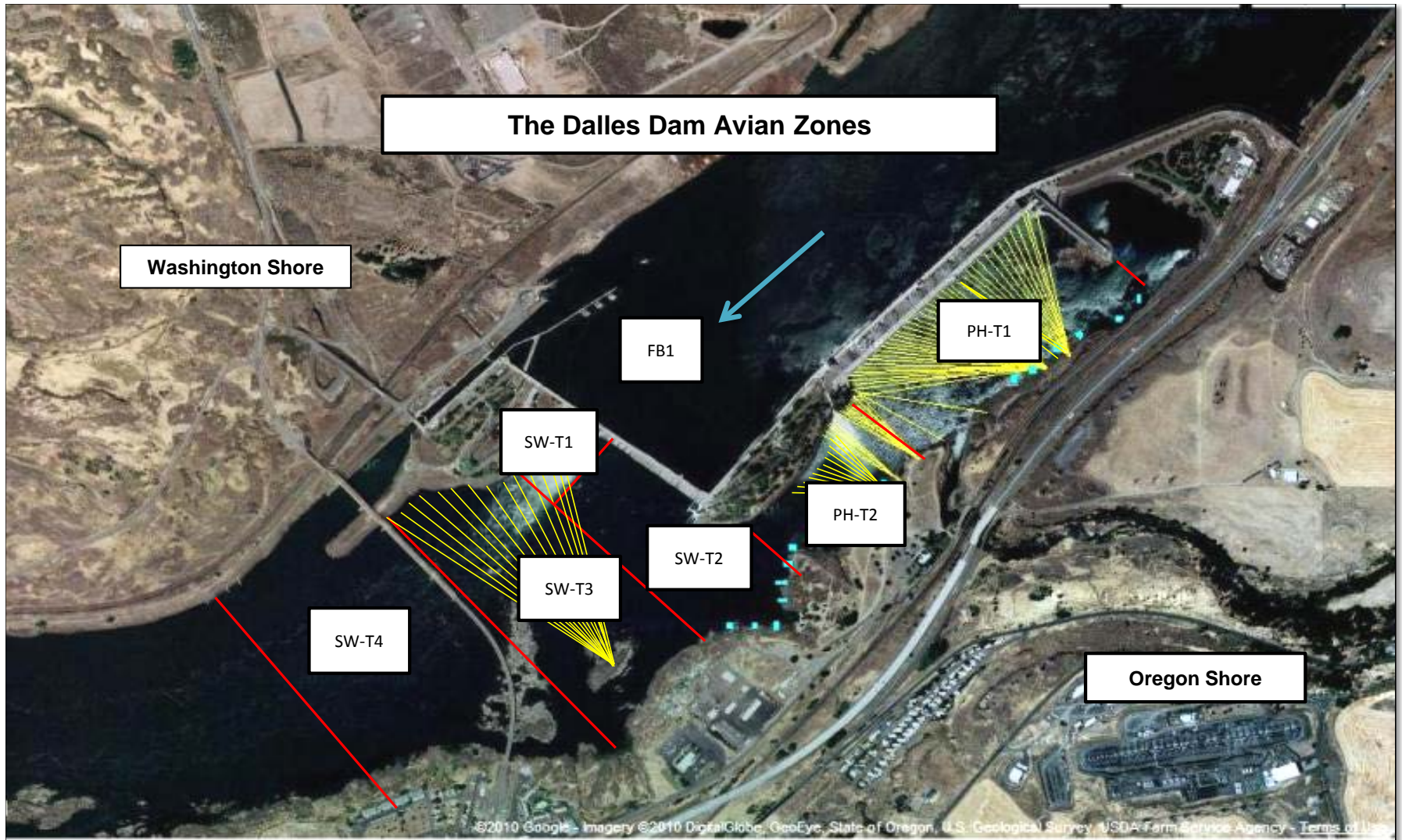
Operation Project Manager The Dalles Dam

The Dalles East Ladder

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
21-Sep-14	16636	14296	2340	4256	3049	1207	5617	5324	293	0	0	0	18
22-Sep-14	16529	12838	3691	3944	2731	1213	3278	3054	224	0	0	0	22
23-Sep-14	12693	10585	2108	3525	2506	1019	3237	2873	364	0	0	0	14
24-Sep-14	11370	8309	3061	2851	2010	841	1914	1748	166	0	0	0	23
25-Sep-14	6767	5257	1510	1920	1307	613	2178	1998	180	0	0	0	13
26-Sep-14	10230	8516	1714	2976	2148	828	2099	2023	76	0	0	0	14
27-Sep-14	10863	8816	2047	3438	2375	1063	3448	3347	101	0	0	0	13
Total	85088	68617	16471	22910	16126	6784	21771	20367	1404	0	0	0	117

The Dalles North Ladder

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
21-Sep-14	1579	1224	355	371	270	101	474	460	14	1	0	0	7
22-Sep-14	843	700	143	420	278	142	432	424	8	0	0	0	4
23-Sep-14	930	707	223	321	241	80	411	403	8	0	0	0	6
24-Sep-14	307	233	74	198	137	61	132	118	14	0	0	0	2
25-Sep-14	512	338	174	263	178	85	279	265	14	0	0	0	2
26-Sep-14	934	740	194	197	133	64	362	355	7	0	0	0	6
27-Sep-14	1683	1375	308	309	217	92	605	595	10	0	0	0	2
Total	6788	5317	1471	2079	1454	625	2695	2620	75	1	0	0	29



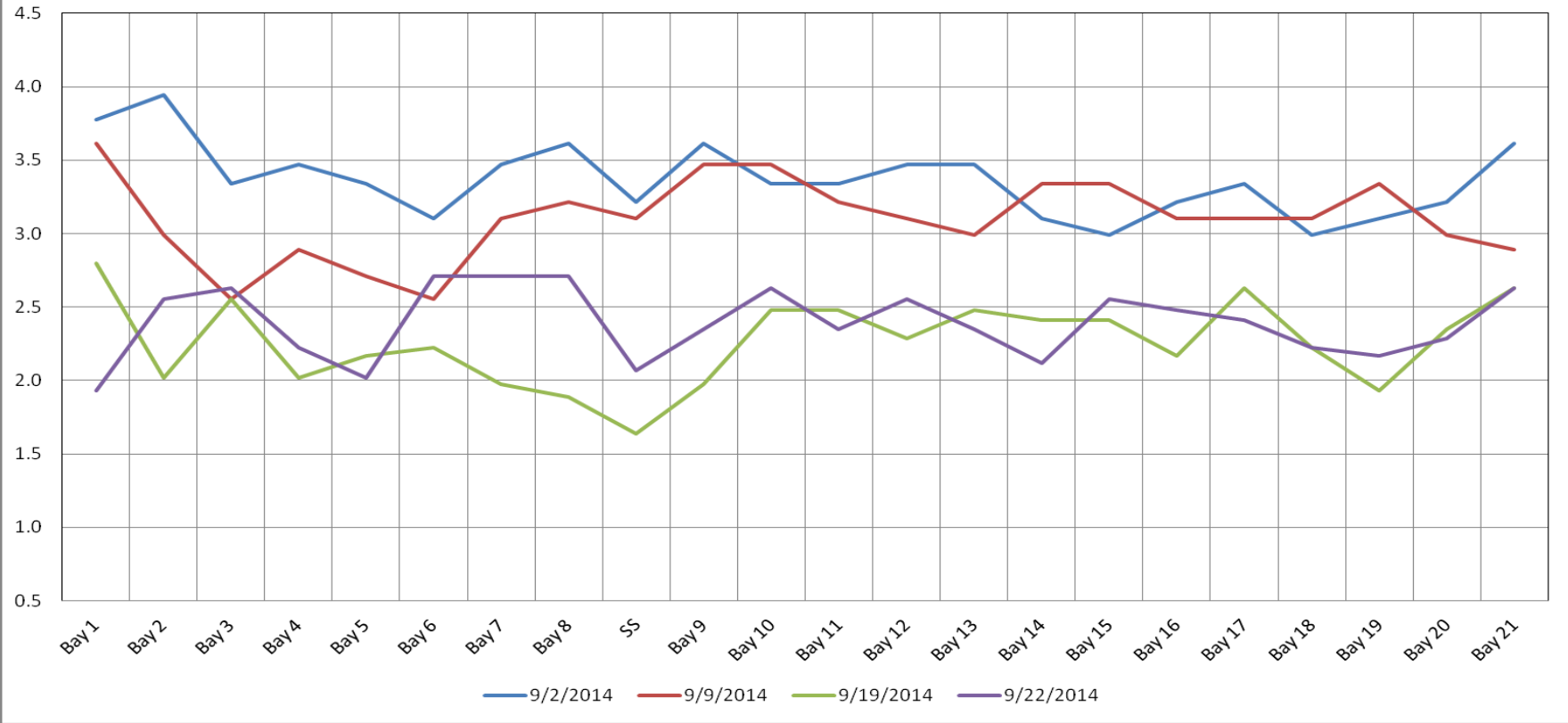
Avian lines in yellow, zones in red.

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			
9/21/14	1	14:20	FB	0	1	0	7	0	0	0	0	8	PSK	other = osprey
		13:19	PH1	0	0	1	35	0	0	0	0	36		
		13:28	PH2	0	0	0	0	0	0	0	0	0		
		14:35	SW1	0	0	0	0	0	0	0	1	1		
		13:33	SW2	0	0	0	2	0	0	0	0	2		
		14:54	SW3	0	0	0	20	0	0	0	0	20		
		15:57	SW4	0	3	0	22	0	0	0	0	25		
9/22/14	1	13:40	FB	0	0	1	8	0	0	0	0	9	jwr	GBHE
		13:02	PH1	0	0	0	24	0	0	0	0	24		
		13:08	PH2	0	0	0	0	0	0	0	0	0		
		13:36	SW1	0	0	0	0	0	0	0	1	1		
		13:10	SW2	0	0	0	0	0	0	0	0	0		
		13:28	SW3	0	4	3	45	0	0	0	0	52		
		13:33	SW4	0	21	0	0	0	0	0	0	21		
9/23/14	1	9:54	FB	0	0	0	88	0	0	0	0	88	PSK	roosting on north side electrical towers
		8:24	PH1	0	0	3	2	0	0	0	0	5		other = great blue heron
		9:14	PH2	0	0	0	0	0	0	0	0	0		
		10:20	SW1	0	0	0	0	0	0	0	1	0		
		9:18	SW2	0	2	0	1	0	0	0	1	4		
		10:40	SW3	0	0	1	27	0	0	0	0	28		
		10:42	SW4	0	0	0	14	0	0	0	0	14		
9/24/14	1	15:00	FB	0	0	0	14	0	0	0	0	14	PSK	roosting on north side electrical towers
		14:19	PH1	0	0	0	6	0	0	0	0	6		resting on rocks
		14:32	PH2	0	0	0	0	0	0	0	0	0		
		15:23	SW1	0	0	0	0	0	0	0	0	0		
		14:39	SW2	0	1	1	0	0	0	0	0	2		
		15:35	SW3	0	0	0	11	0	0	0	0	11		
		15:38	SW4	0	10	0	30	0	0	0	0	40		
9/25/14	1	10:56	FB	0	0	0	51	0	0	0	0	51	jwr	
		10:37	PH1	0	0	2	6	0	0	0	0	8		
		10:43	PH2	0	0	0	0	0	0	0	0	0		
		10:54	SW1	0	0	0	0	0	0	0	0	0		
		10:47	SW2	0	0	4	0	0	0	0	0	4		
		10:48	SW3	0	0	0	26	0	0	0	0	26		
		10:50	SW4	0	14	0	11	0	0	0	0	25		
9/26/14	1	14:53	FB	0	0	0	3	0	0	0	0	3	EHK	
		14:28	PH1	0	0	2	17	0	0	0	0	19		
		14:32	PH2	0	1	0	0	0	0	0	0	1		
		14:58	SW1	0	0	0	0	0	0	0	0	0		
		14:34	SW2	0	0	0	0	0	0	0	0	0		
		15:05	SW3	0	0	0	28	0	0	0	0	28		
		15:06	SW4	0	16	0	15	0	0	0	0	31		
9/27/14	1	9:52	FB	0	0	0	34	0	0	0	0	34	EHK	
		8:49	PH1	0	0	0	6	0	0	0	0	6		
		9:20	PH2	0	0	0	0	0	0	0	0	0		
		10:05	SW1	0	0	0	0	0	0	0	0	0		
		9:28	SW2	0	0	0	1	0	0	0	0	1		
		10:09	SW3	0	0	0	37	0	0	0	0	37		
		10:10	SW4	0	25	0	2	0	0	0	0	27		

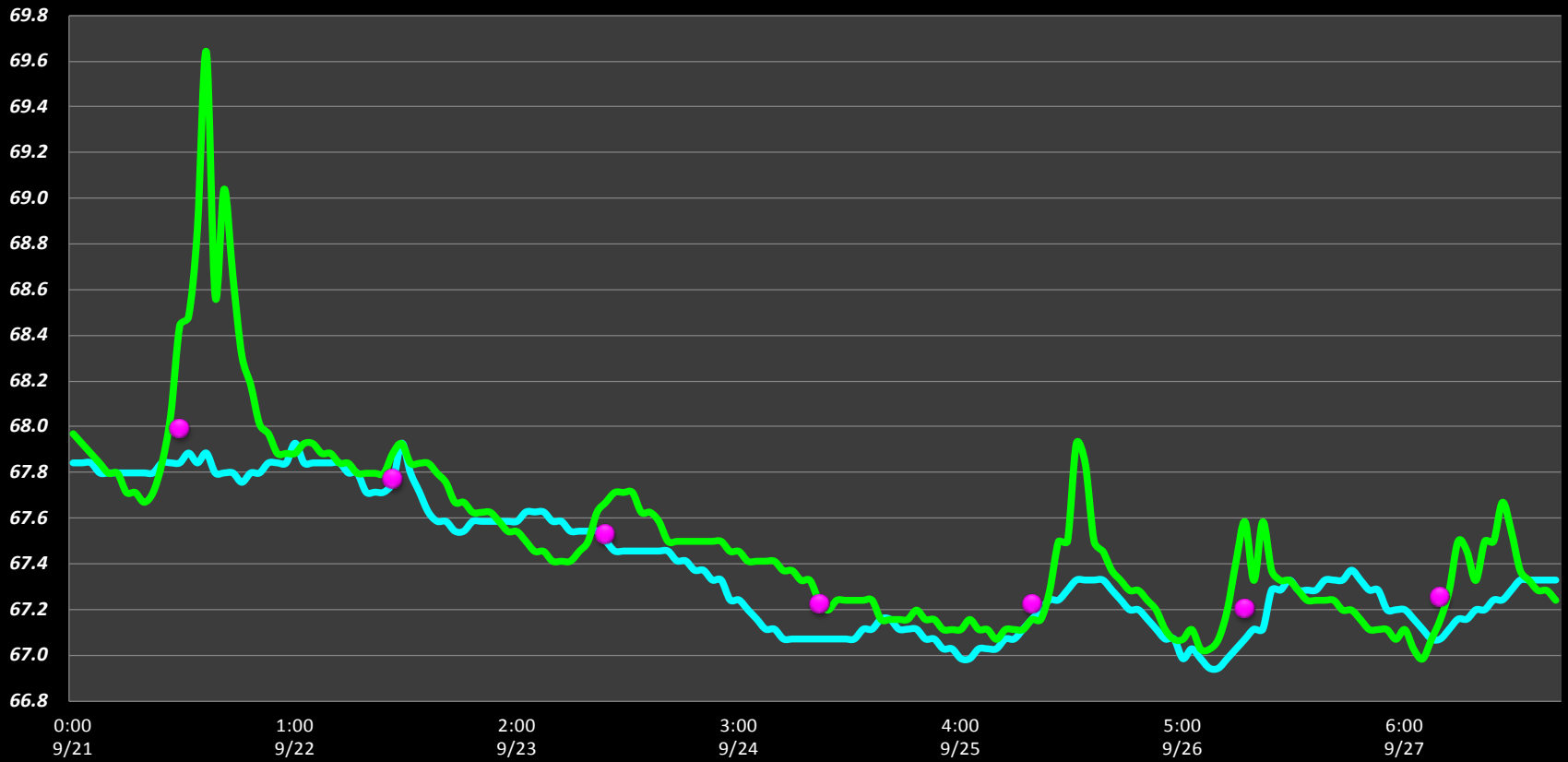
The Dalles Dam Collection Channel Velocities (In Criteria 1.5 - 4.0 fps)



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

°F

— East Fish Ladder — North Fish Ladder ● Combined Ladder Daily Average



Temperatures

68.0
67.8
67.5
67.2
67.2
67.2
67.3
AVG: 67.5

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												
North Entrance			East Entrance					West Entrance			South Entrance			Spill KCFS	
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
9/21/14	1.3	9.3	1.5	11.5	12.9	12.4		1.5	10.0	9.1		1.5	8.7	8.7	On Seal
	1.4	9.3	1.5	11.5	12.9	12.3	10.3	1.5	9.9	9.0		1.5	8.8	8.6	
9/22/14			1.6	11.4	12.9	12.5	10.5	1.5	10.1	9.0		1.5	8.8	8.8	
			1.5	10.9	13.0	12.6		1.6	10.3	8.9		1.5	8.6	8.7	
	1.3	9.5	1.6	10.9	13.0	12.6	10.6	1.6	10.3	8.9		1.5	8.6	8.7	
9/23/14	1.4	9.3	1.6	11.0	13.1	12.7	10.7	1.5	10.4	9.1		1.6	8.8	8.8	
			1.5	11.1	13.1	13.5		1.5	10.9	9.0		1.6	8.6	8.6	
	1.4	9.5	1.4	11.1	13.0	13.5	11.4	1.5	10.8	8.9		1.5	8.8	8.8	
9/24/14	1.4	9.3	1.6	10.9	13.0	13.8	11.8	1.5	11.3	8.9		1.6	8.7	8.7	
			1.6	11.0	13.1	13.7		1.5	11.1	9.1		1.5	8.7	8.7	
	1.3	9.4	1.6	11.0	13.1	13.3	11.2	1.5	10.9	9.1		1.5	8.8	8.7	
9/25/14	1.4	9.3	1.6	11.0	12.9	14.3	12.2	1.5	11.7	8.9		1.6	8.6	8.7	
			1.5	11.1	13.1	13.2		1.6	10.6	8.9		1.6	8.6	8.7	
	1.4	9.2	1.5	10.8	12.9	13.6	11.6	1.5	11.1	9.0		1.6	8.6	8.7	
9/26/14	1.4	9.3	1.6	10.9	12.9	13.2	11.2	1.5	10.8	9.0	1.5	8.7	8.8		
			1.5	10.8	12.9	13.6	11.6	1.5	11.1	9.0	1.5	8.7	8.8		
	1.3	9.3	1.5	11.1	13.0	13.2	11.2	1.5	10.6	9.0	1.5	8.6	8.7		
9/27/14	1.4	9.3	1.8	7.0	13.1	13.3	11.3	1.6	10.7	9.1	1.5	8.8	8.7		
			1.7	7.0	12.9	13.0		1.6	10.6	9.0	1.6	8.8	8.6		
	1.4	9.3	1.7	7.1	13.0	13.1	11.0	1.6	10.5	9.0	1.6	8.6	8.6		
AVG:	1.4	9.3	1.8	7.0	12.9	13.1	11.1	1.5	10.6	9.5		1.5	8.8	8.8	
AVG:	1.4	9.3	1.6	10.3	13.0	13.1	11.2	1.5	10.7	9.0	Closed	1.5	8.7	8.7	



New exit weir 158 staged for installation.