

The Dalles Dam Fishway Status Report

11/2/2014
 Inspection Period: 10/26/2014 to 11/01/2014

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: 60.9 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	9.2	
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 as needed.		
Weir crest depth	0	1.0' ± 0.1'			
Junction pool weir JP6	0	depth (≥ 7')	Average	11.2	
East entrance differential	0	1.0' - 2.0'	Average	1.5	
Entrance weir E1	0	No criteria	Average	4.4	Manually adjusted as needed.
Entrance weir E2	0	depth (≥ 8')	Average	12.1	
Entrance weir E3	0	depth (≥ 8')	Average	12.8	
Collection channel velocity	0	1.5 - 4 fps	Average	2.9	
Transportation channel velocity	0	1.5 - 4 fps	Average	2.6	
North channel velocity	0	1.5 - 4 fps	Average	3.1	
South channel velocity	0	1.5 - 4 fps	Average	3.9	
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	10.0	
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	9.1	
Entrance weir S2	0	depth (≥ 8')	Average	9.1	
JUVENILE PASSAGE					
Sluiceway operation	0	1, 8, 18			
Turbine trashrack drawdown	0	<1.5', wkly	Range	0.0 - 0.3	
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. 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.

Gatewell drawdown completed 10/26. All differences between the forebay and gatewells in criteria.

Current Outages:

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

MU15 out of service 9/29 to 11/6/2014 for Annual.

Maintenance:

Dive plan for spillwall repair in review by Dive Safety Office. Construction start 12/10/2014.

Dive planned to inspect/clear north and south entrance bulkhead sill for debris 11/25/14.

Four collection channel dewatering pumps require removal and rehab. Parts on hand for completion of two. Remaining pumps to be inspected this winter.

Weirs E3 and W1 sticking in guide. Repair during winter fishway outage with wheel replacement and guide repair. Does not affect criteria operation.

Permanent east fishway exit boom purchased. Delivery end of Dec. Contractor install before March. Further assessment for oil spill protection continues.

Charter approved for repair of north fishway rock walls. PM assigned. Awaiting start. Planning for winter inspection/assessment.

Exit weir fabrication of 158 weir complete. Staged at exit for winter install. Investigating possible 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.

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 60% review underway. Includes 10' pipe from forebay to AWS. A 1400cfs winter test planned. Flow survey via boat Nov 4-6 to prepare for winter '15/'16 construction.

PIT data showing potential 15mi creek and mill creek steelhead overshooting The Dalles. Data to be reviewed by FPOM.

PUD 'freedom' second turbine proposal underway. Field test proposal for summer 2015 being reviewed. FPOM agenda item for November.

Spill test for more fish passage to north fishladder completed. Results showed benefit. East ladder overflow passage rates observed for overcrowding behavior changes. Conclusion; no overflow passage ratio changes with increasing ladder passage. FPOM to determine path forward.

Disrict working on justification for spillgate 9 repair.

Research/Contractors:

PSMFC PIT tag monitoring continues at count stations. Investigating potential interference from north count station recommended video upgrades.

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. Installed 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

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
10/25	477	358	119	691	379	312	495	457	38	0	0	0	0
10/26	570	458	112	663	299	364	383	359	24	0	0	0	1
10/27	527	403	124	788	374	414	264	245	19	0	0	0	2
10/28	366	276	90	613	296	317	211	200	11	0	0	0	0
10/29	227	175	52	338	174	164	64	60	4	0	0	0	0
10/30	255	200	55	230	132	98	116	112	4	0	0	0	0
10/31	204	175	29	235	119	116	116	106	10	0	0	0	0
total	2626	2045	581	3558	1773	1785	1649	1539	110	0	0	0	3

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
10/25	54	37	17	147	77	70	178	172	6	0	0	0	0
10/26	25	23	2	29	6	23	47	46	1	0	0	0	0
10/27	16	16	0	71	40	31	45	43	2	0	0	0	0
10/28	88	77	11	52	26	26	36	36	0	0	0	0	2
10/29	41	23	18	72	36	36	30	28	2	0	0	0	0
10/30	30	20	10	40	23	17	22	22	0	0	0	0	0
10/31	56	48	8	51	23	28	25	24	1	0	0	0	0
total	310	244	66	462	231	231	383	371	12	0	0	0	2



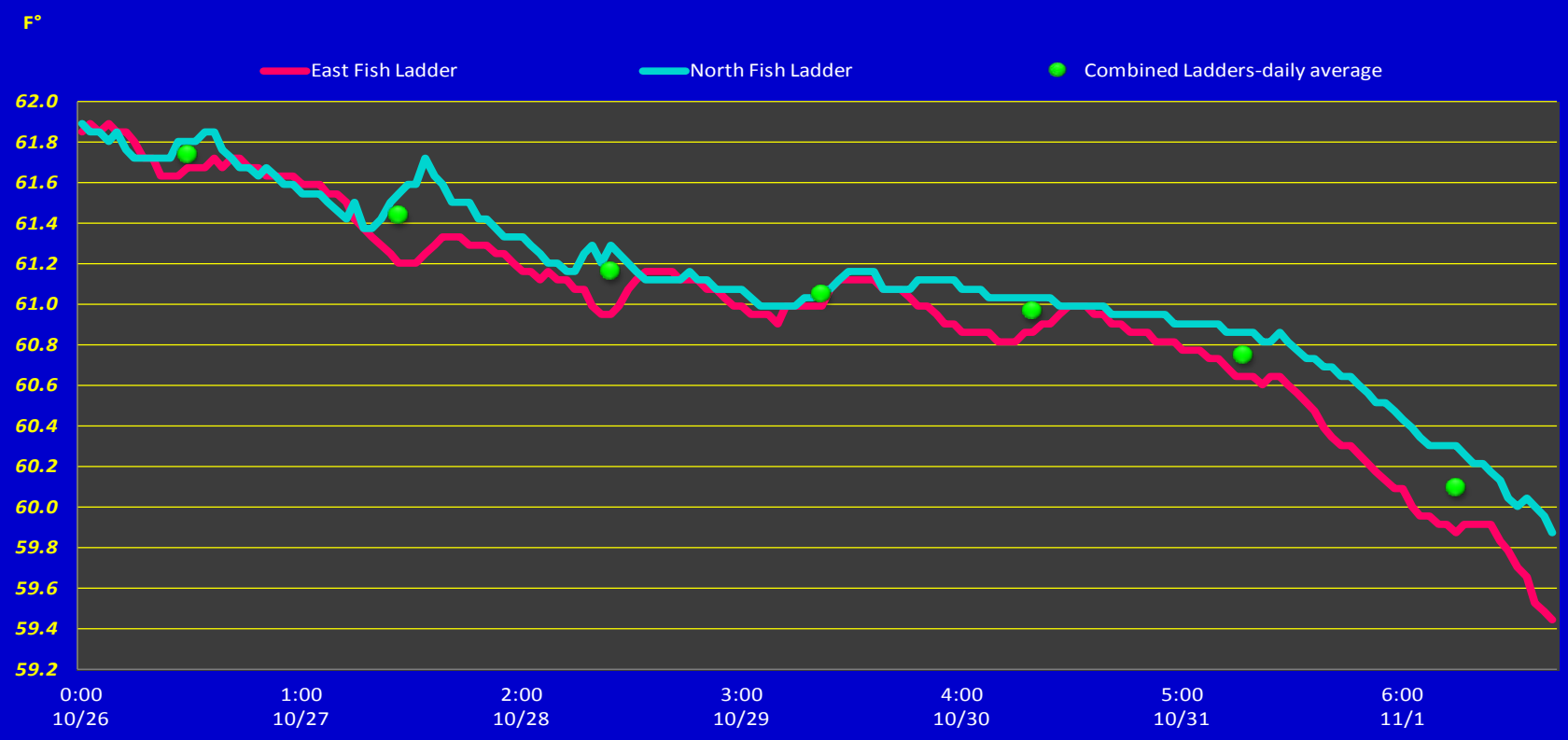
Avian lines in yellow, zones in red.

2014 Piscivorous Bird Counts

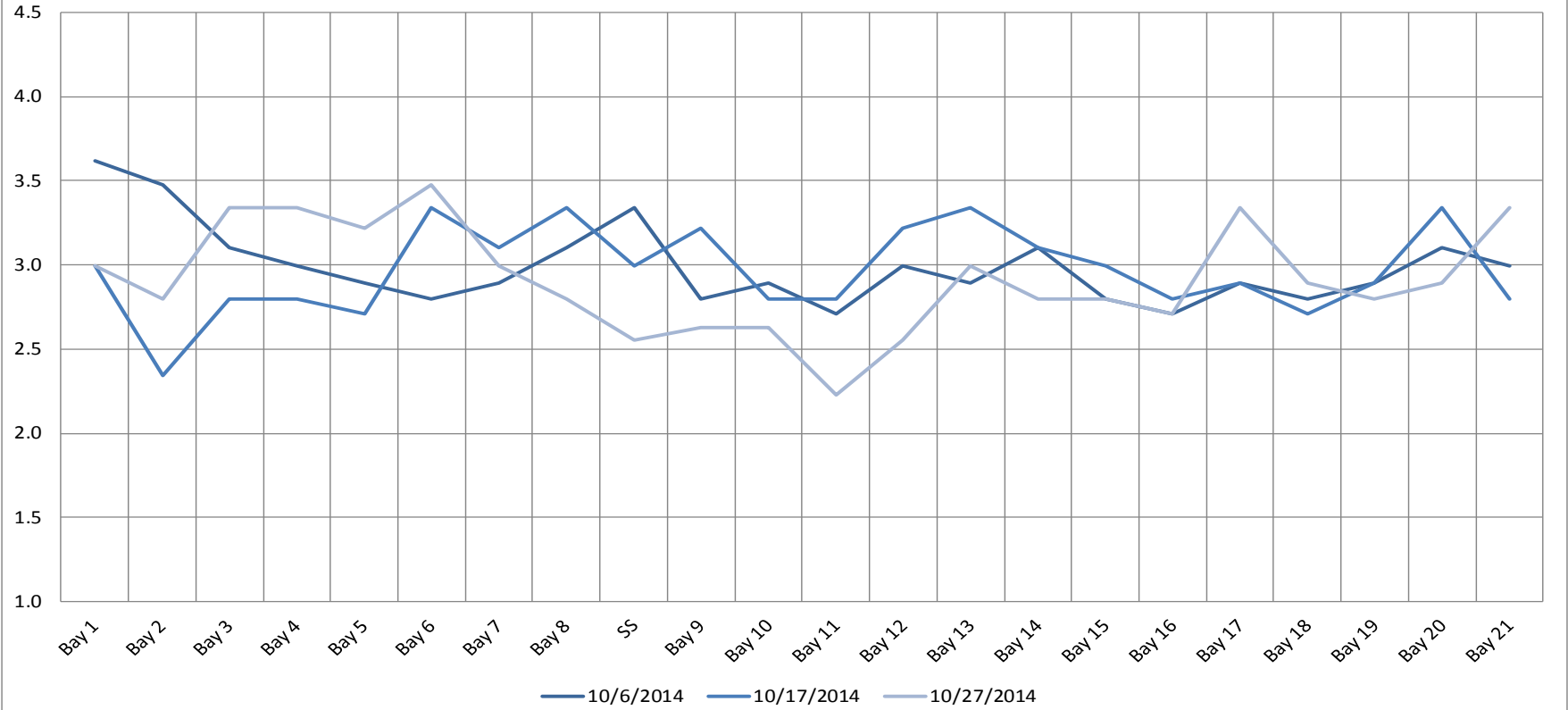
F=foraging, NF=non-foraging

Date	Observer	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Other		Total	Notes
				F	NF	F	NF	F	NF	F	NF		
10/26/14	EHK	15:20	PH1	0	0	0	27	0	0	0	1	28	mergansers
		15:25	PH2	22	0	0	0	0	0	0	0	22	
		15:52	SW1	0	10	0	0	0	0	0	0	10	
		15:28	SW2	0	1	0	0	0	0	0	0	1	
		16:10	SW3	0	0	0	28	0	0	0	0	28	
		16:14	SW4	0	0	0	0	0	0	0	0	0	
10/27/14	EHK	9:59	FB	0	0	0	12	0	0	0	54	66	grebes mergansers
		8:50	PH1	0	0	6	16	0	0	0	12	34	
		9:02	PH2	15	0	0	0	0	0	0	0	15	
		10:03	SW1	0	6	0	0	0	0	0	0	6	
		9:05	SW2	3	0	0	0	0	0	0	0	3	
		10:23	SW3	0	44	0	61	0	0	0	0	105	
		10:24	SW4	0	17	0	8	0	0	0	0	25	
10/28/14	PSK	14:33	FB	0	1	0	0	0	0	0	80	81	other = grebes other = mergansers gulls on spillwall
		13:41	PH1	0	0	0	11	0	0	0	25	36	
		13:53	PH2	50	0	0	0	0	0	0	0	50	
		14:47	SW1	0	12	0	0	0	0	0	0	12	
		15:19	SW2	7	0	1	2	0	0	0	0	10	
		14:59	SW3	3	42	3	60	0	0	0	0	108	
		15:03	SW4	0	40	0	12	0	0	0	0	52	
10/29/14	JWR	10:31	FB	0	6	0	7	0	0	0	86	99	other = grebes other = mergansers gulls on spillwall other = mergansers other = AWPE
		9:31	PH1	2	1	6	13	0	0	2	25	49	
		9:41	PH2	26	0	0	0	0	0	0	0	26	
		10:29	SW1	0	4	0	0	0	0	0	0	4	
		9:55	SW2	8	0	0	0	0	0	0	0	8	
		10:02	SW3	5	81	2	90	0	0	0	3	181	
		10:27	SW4	3	41	0	0	0	0	0	1	45	
10/30/14	PSK	14:47	FB	0	2	0	0	0	0	0	101	103	other = 1 great blue heron and 100 grebes other = 30 mergansers roosting on spillwall
		13:55	PH1	0	1	1	44	0	0	0	30	76	
		14:06	PH2	15	0	0	1	0	0	0	0	16	
		15:08	SW1	0	14	0	0	0	0	0	0	14	
		14:12	SW2	21	0	0	2	0	0	0	0	23	
		15:20	SW3	0	10	0	50	0	0	0	0	60	
		15:25	SW4	14	43	0	22	0	0	0	0	79	
10/31/14	JWR	10:57	FB	2	0	2	0	0	0	0	98	102	other = grebes other = mergansers other = AWPE
		10:38	PH1	0	0	3	16	0	0	0	33	52	
		9:38	PH2	35	0	0	0	0	0	0	0	35	
		10:54	SW1	0	0	0	0	0	0	0	0	0	
		9:42	SW2	8	0	4	0	0	0	0	0	12	
		9:50	SW3	17	78	0	72	0	0	0	0	167	
		10:52	SW4	0	64	0	59	0	0	0	1	124	
11/1/14	JWR	13:37	FB	1	45	3	0	0	0	0	93	142	other = grebes other = mergansers
		12:55	PH1	0	0	5	7	0	0	0	37	49	
		13:02	PH2	11	0	8	0	0	0	0	0	19	
		13:34	SW1	0	25	1	0	0	0	0	0	26	
		13:05	SW2	0	0	0	0	0	0	0	0	0	
		13:44	SW3	0	14	1	61	0	0	0	0	76	
		13:47	SW4	0	19	0	77	0	0	0	0	96	

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



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



Temperatures

61.6
61.4
61.1
61.0
60.9
60.7
59.5
AVG: 60.9

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

Date:	North Ladder		East Ladder											Spill KCFS			
	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			
10/26			1.3	8.4	12.4	10.9	8.9	1.8	8.9	9.0	Closed	1.7	8.2	8.2	On Seal		
	1.5	8.9	1.1	7.5	12.1	11.8	9.8	1.6	9.4	9.5		1.6	8.7	8.7			
	1.3	9.1	1.2	8.6	12.0	11.3	9.3	1.6	9.3	9.4		1.5	8.7	8.7			
10/27																	
	1.4	9.1	1.2	5.3	12.0	12.7	10.7	1.7	9.7	9.8		1.7	8.7	8.7			
	1.4	9.1	1.3	4.6	12.1	12.2	10.2	1.6	9.9	9.9		1.6	8.8	8.8			
10/28			1.6	4.5	12.1	12.6	10.6	1.5	10.1	10.1			1.4	9.2		9.2	
	1.5	9.0	1.4	3.5	12.1	13.0	11.0	1.6	10.0	10.2			1.6	9.0		9.0	
	1.5	9.1	1.4	3.5	12.1	13.2	11.2	1.7	10.0	10.2			1.6	9.0		9.1	
10/29			1.5	3.4	11.9	12.7	10.7	1.7	9.8	9.9			1.7	8.8		8.8	
	1.4	9.2	1.6	3.6	12.0	12.8	10.8	1.6	10.1	10.0			1.4	9.6		9.5	
	1.4	9.2	1.6	3.5	11.9	13.2	11.2	1.7	9.9	9.9			1.5	9.5		9.4	
10/30			1.5	3.5	12.0	13.4	11.4	1.6	10.2	10.2			1.3	9.7		9.6	
	1.5	9.2	1.5	2.0	12.0	13.6	11.6	1.5	10.4	10.5			1.4	9.6		9.6	
	1.5	9.3	1.5	4.0	12.1	13.1	13.6	1.5	10.5	10.5			1.4	9.6		9.6	
10/31			1.5	4.1	12.0	13.0	12.0	1.5	10.6	10.5		1.4	9.6	9.6			
	1.4	9.2	1.6	3.9	12.0	13.0	12.0	1.5	10.2	10.2		1.4	9.2	9.2			
	1.4	9.4	1.5	4.1	12.2	13.4	12.4	1.5	10.2	10.3		1.6	9.2	9.2			
11/1			1.6	4.0	12.0	13.0	12.0	1.5	10.3	10.2		1.5	9.2	9.3			
	1.5	9.2	1.6	4.0	12.0	13.0	12.0	1.5	10.2	10.2		1.6	9.2	9.2			
	1.5	9.3	1.6	2.0	12.1	13.1	12.1	1.6	9.9	9.9		1.6	9.1	9.1			
AVG:	1.4	9.2	1.5	4.4	12.1	12.8	11.2	1.6	10.0	10.0	Closed	1.5	9.1	9.1			