

The Dalles Dam Fishway Status Report

Date: 5/5/2014
 Inspection Period: 4/27/2014 to 5/3/2014

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:
			20	50.7	F
			Comments	Secchi:	4.1 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'			
Entrance weir N1	0	depth (≥ 8')			
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'			
Weir crest depth	0	1.0' ± 0.1'			
Junction pool weir JP6	0	depth (≥ 7')	Manually adjusted as needed.		
East entrance differential	0	1.0' - 2.0'	Average 1.5	Daily differentials & weir depths, see AVGS tab.	
Entrance weir E1	0	No criteria	Average 8.5	Manually adjusted.	
Entrance weir E2	0	depth (≥ 8')	Average 12.4		
Entrance weir E3	0	depth (≥ 8')	Average 9.5		
Collection channel velocity	0	1.5 - 4 fps	Average 2.2		
Transportation channel velocity	0	1.5 - 4 fps	Average 2.7		
North channel velocity	0	1.5 - 4 fps	Average 2.4		
South channel velocity	0	1.5 - 4 fps	Average 3.1		
West entrance differential	0	1.0' - 2.0'	Average 1.5		
Entrance weir W1	0	depth (≥ 8')	Average 8.8		
Entrance weir W2	0	depth (≥ 8')	Average 8.8		
Entrance weir W3	closed	No criteria	Average closed		
South entrance differential	0	1.0' - 2.0'	Average 1.5		
Entrance weir S1	0	depth (≥ 8')	Average 9.5		
Entrance weir S2	0	depth (≥ 8')	Average 9.4		
JUVENILE PASSAGE					
Sluiceway operation	0	1, 8, 18			
Turbine trashrack drawdown	0	<1.5', wkly	Range 0.2' - 0.5'		
Spill volume	5	40%	Average 41.6	Spill in criteria when ±1% of target spill of 40%.	
Spill Pattern	0	per FPP			
Turbine Unit Priority	0	per FPP			
Turbine 1% Efficiency	0	per FPP			

OTHER ISSUES:**Birds/Sea lions:**

Bird observation data collected once daily. Gull numbers are increasing down stream of the bridge. See avian zones map for details.
Sea lion observed at west entrance several times. USDA notified for hazing.

Operations:

Calibration completed 4/29. Weir E1 off by 0.3'. Weir still maintaining criteria depth.
Gatewell drawdown completed 4/28, all well within criteria.

Current Outages:

T8 (MU15 & MU16) de-rated to single unit full load ops through 9/14/2017.
MU22 out of service 3/24 - 5/1/2014 for overhaul.
MU6 out of service 4/21 - 4/24/2014 for annual.

Maintenance:

All parts for new weir 158/159 ordered. Wheels and shafts being assembled this week.
North fishway pump motor replacement ordered.
Disassembly started of failed east fishway collection channel dewatering pump. Other pumps to be inspected for similar problem.
Planning for equalizing valve for PUD intake bulkhead for next winter dewatering.
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 10/11 wire rope replacement, update fish unit reliability assessment, planning upgrade fish unit breakers, Fish unit transformer replacement.
All spillway items on Critical Infrastructure list and Unfunded Requirement list

Studies:

PIT - PSMFC PIT tag monitoring continues at count stations. No issues.
EFL - Backup pipe through dam, under roadway and into AWS conduit at junction pool. Starting Plans and Specs. Construction winter 2015.
East fishway backup water supply; test pits to be excavated between fishladder and fishlock parking area this summer. ADCP flow velocity survey in forebay near east exit this summer. Planning/approval underway for both.
PUD - PUD 'freedom' turbine; second turbine proposal for north fishway in FERC approval process. COE reviewed and commented.
Lamprey - Skin plate planned for downstream face of 159 weir for lamprey improvement. Planning for tribal lamprey collection from count stations.

Research/Contractors:

Zebra/Quagga mussel adult substrate traps placed into both fish ladders, river temperatures >50°f=Quagga and Zebra mussel viability
Columbia River Inter-Tribal Fish Commission picked up frozen larval lamprey specimens collected from main unit scroll case strainers 5/1.
Fish counters on site at north and east count stations 16 hours a day 1 April through 30 October. Spring Chinook numbers increasing.
PSMFC PUD weekly sampling 4/30; 12 Chinook yearling, 20 fry, one steelhead, and one sockeye.
Normandeau fish counting program started conducting live counts 4/1 through 10/31.
USDA gull hazers on site launching pyrotechnics from downstream navlock peninsula. Gull numbers moderate. USDA also called to haze sea lion from taking fish at west entrance.
University of Idaho maintaining antennas.
Removal last set of 3 derelict Vertical Barrier Screens from MU 12 gatewell slot scheduled week of Aug11. Coordination in progress.
WDFW starts next Tuesday to conduct hook and line removals of predatory northern pikeminnow from the BRZ adjacent to the project.
Research approval letter forwarded for Yakama Nation. Yakama Nation Fisheries Resource Management Program (FRMP) proposes to collect up to 374 adult Pacific lampreys from The Dalles Project. Traps to be placed behind picket leads at count stations.

Approved by;
Ron D. Twiner
Operation Project Manager
The Dalles Dam

DART THE DALLES ADULT LADDER DAILY USAGE with Spill Percent and Outflow

Date	Chinook				Jack Chinook				Steelhead				Steelhead Wild				Sockeye		Coho		Jack Coho		Lamprey		Spill Pct [Right]	Outflow (kcfs)
	Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladd	Right Ladd	Left Ladd	Right Ladd	Left Ladd	Right Ladd				
	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#		
27-Apr-14	90.9%	2759	9.1%	277	100.0%	30	0.0%	0	100.0%	2	0.0%	0		0		0	0	0	0	0	0	0	0	0	41.5%	245.1
28-Apr-14	90.9%	4726	9.1%	475	100.0%	90	0.0%	0	100.0%	18	0.0%	0	100.0%	2	0.0%	0	0	0	0	0	0	0	0	0	40.0%	249.7
29-Apr-14	97.6%	3722	2.4%	92	100.0%	52	0.0%	0	100.0%	9	0.0%	0	100.0%	5	0.0%	0	0	0	0	0	0	0	0	0	40.0%	276.3
30-Apr-14	92.7%	4841	7.3%	383	100.0%	98	0.0%	0	100.0%	9	0.0%	0	100.0%	1	0.0%	0	0	0	0	0	0	0	0	0	42.1%	244.8
1-May-14	89.0%	6148	11.0%	763	100.0%	132	0.0%	0	91.7%	11	8.3%	1		0		0	0	0	0	0	0	0	0	0	40.0%	239
2-May-14	80.0%	10752	20.0%	2686	98.1%	254	1.9%	5	100.0%	14	0.0%	0		0		0	0	0	0	0	0	0	0	0	39.1%	240.8
3-May-14	83.9%	9414	16.1%	1810	99.5%	397	0.5%	2	100.0%	15	0.0%	0	100.0%	5	0.0%	0	0	0	0	0	0	0	0	0	38.9%	250.2
Date	Chinook				Jack Chinook				Steelhead				Steelhead Wild				Sockeye		Coho		Jack Coho		Lamprey		Spill Pct	Outflow
YTD	Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladd	Right Ladd	Left Ladd	Right Ladd	Left Ladd	Right Ladd	Left Ladd	Right Ladd		
	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#		
	86.7%		13.3%		99.3%		0.7%		98.7%		1.3%		100.0%		0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

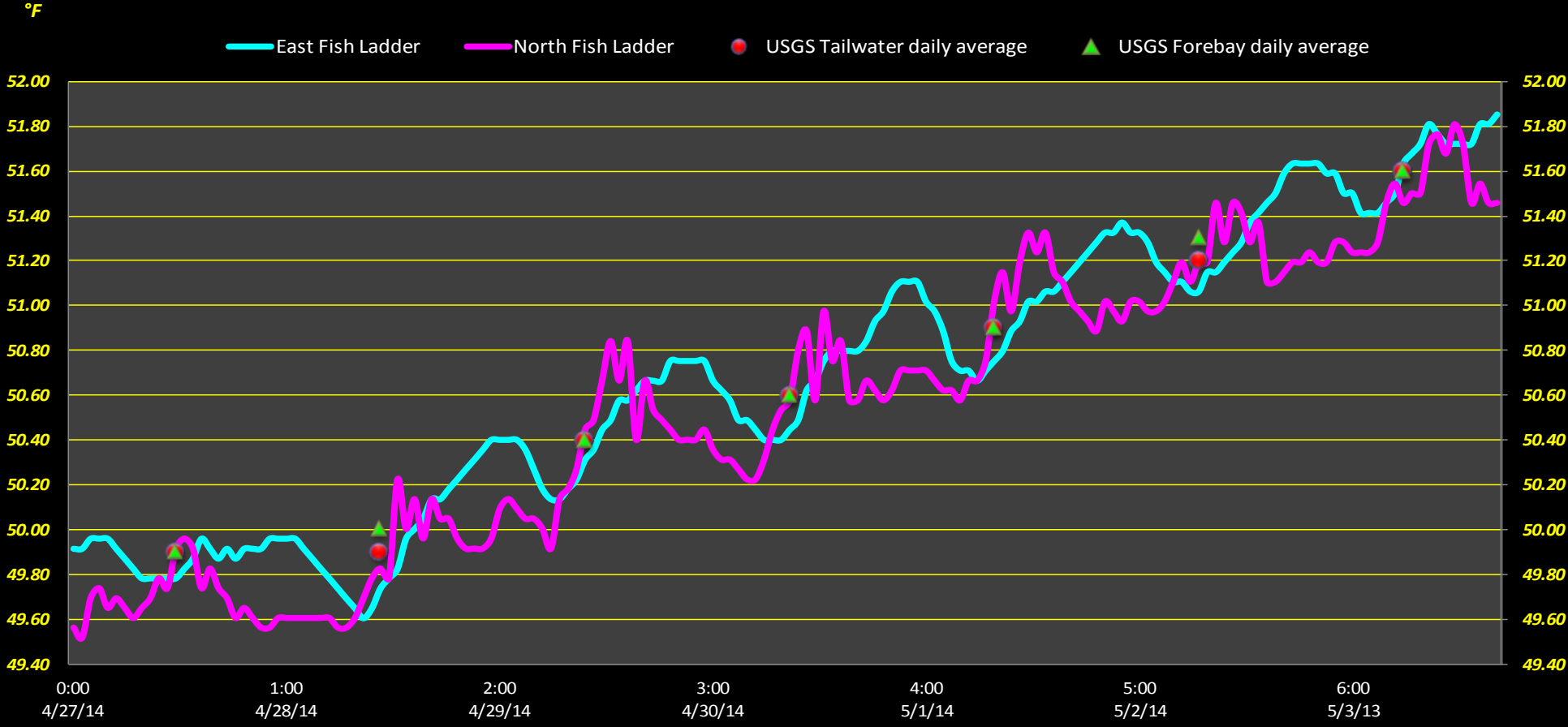
NOTES:

1. The species passage percent is not calculated for either ladder on a day, if either the Right Ladder or Left Ladder species count is: negative or null for the day.
2. Ladder orientations reference the side of the river when facing downstream.
3. Data Provided Courtesy of U.S. Army Corps of Engineers

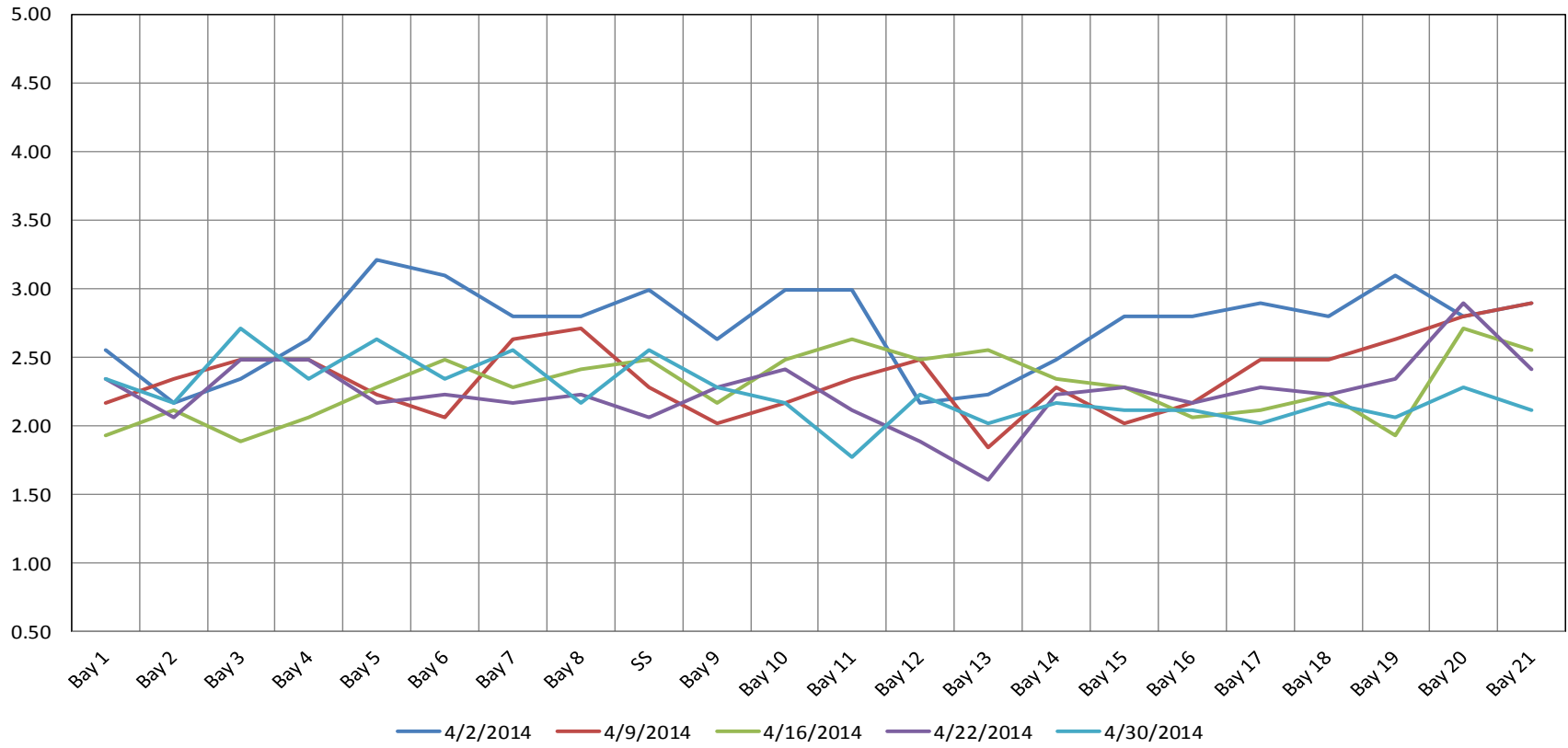


Hazing activity primarily in SW-T4

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



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



Temp:			Secchi:	
49.9	SUN		3.5	
50.0	MON		4.0	
50.4	TUES		4.5	
50.6	WED		4.5	
50.9	THUR		4.5	
51.3	FRI		4.5	
51.6	SAT		3.3	
AVG: 50.7	AVG:		4.1	

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

= out of criteria

Date:	North Fish Ladder		East Fish Ladder					East Fish Ladder				South Entrance			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	
4/27/14			1.5	9.1	12.5	9.6		1.4	9.0	9.0	C l o s e d	1.3	10.3	10.3	
	1.3	10.1	1.5	8.9	12.4	9.3	12.6	1.5	8.9	8.9		1.3	10.2	10.1	40.0
	1.4	10.0	1.4	9.0	12.5	9.5	12.8	1.5	9.0	9.0		1.3	10.2	10.2	47.6
4/28/14			1.6	9.0	12.6	9.6		1.4	9.0	9.2		1.3	10.2	10.2	
	1.3	9.9	1.4	9.1	12.6	9.5	12.6	1.4	9.0	9.0		1.4	10.1	10.1	40.4
	1.4	10.0	1.5	9.1	12.5	9.5	12.2	1.4	8.9	9.1		1.3	10.2	10.2	49.2
4/29/14			1.5	8.9	12.4	9.5		1.5	8.9	9.0		1.3	10.2	10.2	
	1.3	9.9	1.5	9.0	12.5	9.5	12.7	1.5	9.0	9.0		1.5	8.5	8.5	40.6
	1.4	10.0	1.6	9.0	12.5	9.5	12.9	1.6	8.9	8.9		1.7	8.6	8.6	40.4
4/30/14			1.6	9.1	12.6	9.6		1.5	9.1	9.1		1.4	9.6	9.7	
	1.4	9.9	1.5	9.1	12.5	9.5	11.7	1.6	8.9	9.0		1.4	9.6	9.6	43.8
	1.3	10.0	1.5	8.9	12.5	9.5	12.9	1.6	8.9	8.9		1.5	9.4	9.4	42.0
5/1/14			1.4	8.9	12.4	9.4		1.5	9.0	8.9		1.5	9.5	9.5	
	1.3	10.1	1.5	9.0	12.5	9.5	12.6	1.5	9.1	9.2		1.5	9.5	9.5	39.5
	1.4	9.9	1.5	7.5	12.5	9.6	11.4	1.5	8.5	8.5		1.6	9.0	9.0	40.2
5/2/14			1.3	7.5	12.6	9.6		1.5	8.5	8.6	1.5	9.1	9.1		
	1.4	9.9	1.5	7.4	10.5	9.5	11.7	1.6	8.4	8.5	1.7	8.9	8.9	40.0	
	1.4	9.9	1.6	7.5	12.6	9.6	11.4	1.5	8.6	8.5	1.6	9.0	9.0	39.3	
5/3/14			1.6	7.5	12.6	9.5		1.5	8.6	8.5	1.5	9.1	9.1		
	1.3	9.9	1.6	7.6	12.7	9.6	11.4	1.5	8.5	8.6	1.6	8.9	8.0	40.4	
	1.3	10.0	1.7	7.6	12.5	9.5	13.0	1.8	8.4	8.3	1.7	8.9	8.8	37.8	
AVG:	1.3	10.0	1.5	8.5	12.4	9.5	12.3	1.5	8.8	8.8		1.5	9.5	9.4	41.5



Fishermen near Boat Restricted Zone, upstream of east exit.