

The Dalles Dam Fishway Status Report

12/22/18

Inspection Period: Dec. 16 - Dec. 22, 2018

THE DALLES DAM



US Army Corps
of Engineers
Portland District

The Dalles Project-Fisheries
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The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections: Comments: FU's off 12/1 for dewatering	Temperature: 45.0 °F Secchi: 5+ 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'	1.3	
Entrance weir N1	0	depth (≥ 8')	10.0	
Entrance weir N2	0	Closed		
PUD Intake differential	0	≤ 0.5'		
EAST FISHWAY - Dewatered for annual maintenance				
Exit differential		≤ 0.5'		
Removable weirs 154-157		Per forebay		
Weir 158-159 differential		1.0' ± 0.1'		
Count station differential		≤ 0.3'		
153 Weir crest depth		1.1' ± 0.1'		
Junction pool weir JP6		0.0		
East entrance differential		1.0' - 2.0'		
Entrance weir E1		No criteria		
Entrance weir E2		depth (≥ 8')		
Entrance weir E3		depth (≥ 8')		
Collection channel velocity		1.5 - 4 fps		
Transportation channel velocity		1.5 - 4 fps		
North channel velocity		1.5 - 4 fps	3.0 fps	
South channel velocity		1.5 - 4 fps		
West entrance differential		1.0' - 2.0'		
Entrance weir W1		depth (≥ 8')		
Entrance weir W2		depth (≥ 8')		
Entrance weir W3		No criteria		
South entrance differential		1.0' - 2.0'		
Entrance weir S1		depth (≥ 8')		
Entrance weir S2		depth (≥ 8')		
JUVENILE PASSAGE				
Sluiceway operation	0	Units 1, 18	MU1 (1-1) & MU18 (18-3) endgate closed	
Turbine trashrack drawdown	0	<1.5', biweekly		
Spill volume/pattern	0	None		
Turbine Unit Priority	0	per FPP	Bus maintenance work	
Turbine 1% Efficiency	0	per FPP		

OTHER ISSUES:

Predators;

Eagle, Gull and Merganser numbers increasing as expected per seasonal trend
No Sea Lion observations

Operation:

East fish ladder dewatered 12/3, East fishway channels dewatered 12/6.
North ladder in service

Current Outages;

FU1 and FU2 OOS for annual/overhaul maintenance and breaker replace. RTS 1/15/18
MU1 and MU2 OOS for FU breaker replace. RTS 12/19/18
MU5 forced OOS blade seals and T3 transformer replace. RTS 3/21/2019
MU6 OOS annual and T3 transformer replace. RTS 3/21/2019
MU12 FOOS through 1700 1/17/2019 for Blade Seals
MU16 OOS exciter replacement. RTS 3/28/2019
MU19 and MU20 forced OOS transformer acetylene production. RTS 10/24/2019

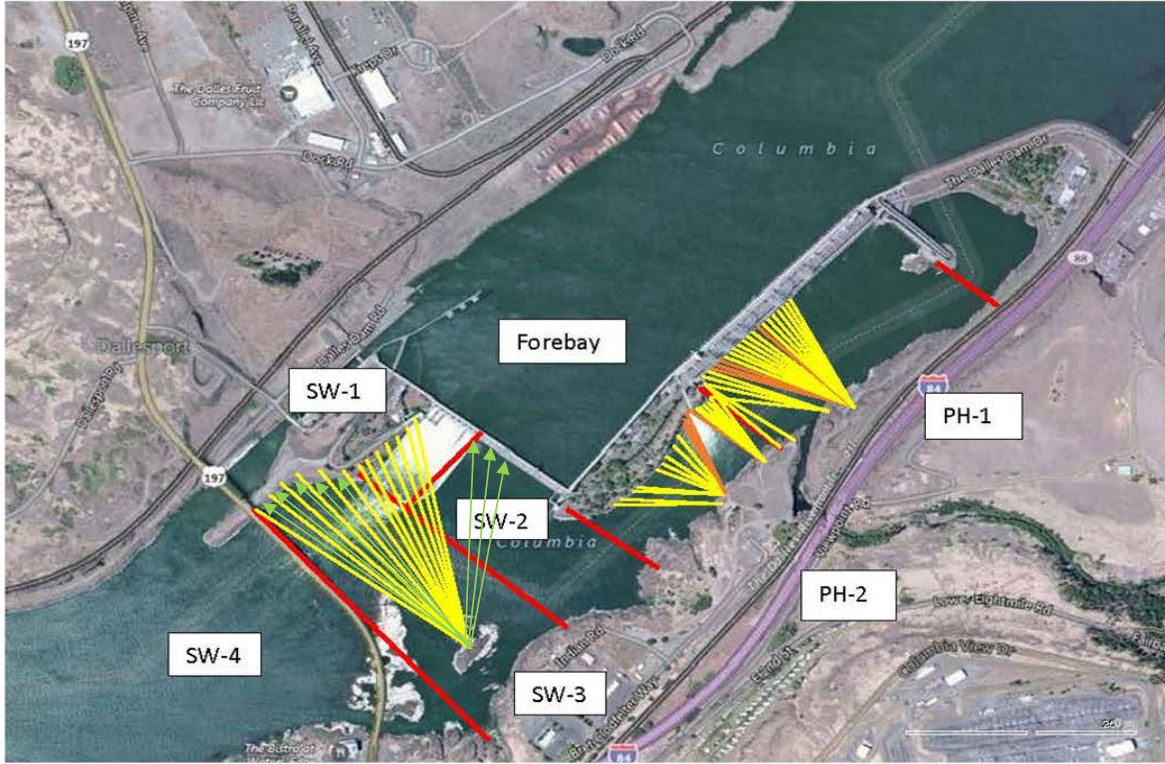
Maintenance

North ladder dewatering Jan 22.
East count station brush frame removed for brush replace.
Count station reflooring started.
Collection channel dewatering pumps 3 and 4 out for rehab.
Assembly starting on fishway automation replacement. Start install winter of 2019/20
East ladder exit weirs 156 and 157 rehab/weir wheel replacement started.
Repair of west entrance diffuser 2-1 delayed due to unanticipated water levels. Remaining diffuser repair in planning. In FPOM review.
Starting vegetation removal from south channel rock walls.
Fish related /non-fish funded items; Spillway assessment underway. Spillway crane replace and spillgate 9 repair included.
All spillway items on Critical Infrastructure. Spillgate 9 on large cap list, projected for 2022. Comprehensive spillway assessment review underway.

Research/Construction/Contractors:

Bathymetry of spillwall and spill basin completed-see last page, District dive/ROV personnel inspected spill basin w/ ROV unit (12/11), awaiting results
Zebra mussel velliger sampling resumes next spring.
Lower Columbia River Forebay Temperature Monitoring completed. Equipment removed. To resume next season.
AWS construction - Commissioning test and operation with single fish unit test completed.
PSMFC weekly sampling completed for the North Wasco County PUD's. New sample collection tank design in review. Installation postponed to winter 2019/20.
PITAGS North and east fishladder data collection at count stations continues. Will maintain equipment during dewatering.
Fish Counters - Resumes 4/1/19.
Pikeminnow dam angling - Caught 1785 YTD. Resumes next spring.
ODFW monthly fishway inspections concluded 10/16
Lamprey minor mods - Rounded entrance weir caps installed south, west, north entrances. East weir to be completed mid Dec.
Univ of Idaho lamprey radiotelemetry completed. Lamprey passage test to resume in May.
Lamprey trapping by tribes completed for season. Awaiting final numbers. Project to construct lift hoist mechanism for next trapping season.
Fish unit breaker replace - Prep work in progress. Installation 12/1/18 - 1/14/19.
Fish unit rehab - Test of AWS backup with single fish unit 11/28 was successful achieving criteria, resulting in new alternative review.
Transformer replacement - Install T8 underway (units 15 and 16). Sequence schedule modified from original

Approved by: Bryan Hert for Ron Twiner
Operation Project Manager The Dalles Dam



Red lines = avian zones

Yellow lines = current wires

Orange lines = down or missing wires

→ Additional avian lines installed 9/2018

2018 Piscivorous Bird Counts

F=foraging, NF=non-foraging

Date	Observer	AM/PM	Zone	Gull		Cormorant		Caspian tern		Grebe		Pelican		Other		Total birds in zone	Notes	
				F	NF	F	NF	F	NF	F	NF	F	NF	F	NF			
12/16	JWR	AM	FB	0	0	11	0	0	0	0	0	0	0	0	0	0	11	
			PH1	9	2	1	17	0	0	0	0	0	0	0	0	0	29	
			PH2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
			SW1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			SW2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
			SW3	0	0	3	29	0	0	0	0	0	0	0	0	0	32	
12/17	JED	am	FB	2	4	0	5	0	0	2	0	0	0	0	2	15		
			PH1	20	16	3	6	0	0	0	0	0	0	24	31	100	1BAEA, 1GBHE	
			PH2	0	0	0	0	0	0	0	0	0	0	0	5	5	54 COME, 1 BAEA	
			SW1	0	0	1	0	0	0	0	0	0	0	2	0	3	4 GBHE, 1BAEA	
			SW2	0	0	0	0	0	0	0	0	0	0	1	0	1	COME	
			SW3	0	7	0	40	0	0	0	0	0	0	6	0	53	GBHE	
12/18	JWR	AM	FB	0	5	8	0	0	0	0	0	0	0	0	0	13		
			PH1	6	0	0	35	0	0	0	0	0	0	0	16	57	COME	
			PH2	0	0	0	0	0	0	0	0	0	0	0	5	5	BAEA	
			SW1	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	0	0	0	29	0	0	0	0	0	0	0	0	29		
12/19	JED	am	FB	0	2	2	0	0	0	0	0	0	1	0	5			
			PH1	0	15	2	40	0	0	0	0	0	0	1	20	78	BAEA	
			PH2	1	0	0	0	0	0	0	0	0	0	0	0	1	COME	
			SW1	0	0	2	0	0	0	0	0	0	0	0	0	2		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	0	0	0	35	0	0	0	0	0	0	0	0	35		
12/20	JED	pm	FB	0	0	2	0	0	0	0	0	0	0	0	0	2		
			PH1	27	0	0	1	0	0	0	0	0	0	0	0	10	78	COME
			PH2	10	0	0	0	0	0	0	0	0	0	0	0	10		
			SW1	1	0	0	0	0	0	0	0	0	0	0	0	1		
			SW2	0	0	0	0	0	0	0	0	0	0	2	0	2		
			SW3	0	40	0	118	0	0	0	0	0	0	0	0	158		
12/21	CEA	PM	FB	0	0	3	0	0	0	1	0	0	0	0	4			
			PH1	1	1	0	4	0	0	0	0	0	0	25	14	45	Pied-billed grebe	
			PH2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW1	0	114	0	0	0	0	0	0	0	0	0	3	117	COME	
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	0	33	3	102	0	0	0	0	0	0	0	0	138		
12/22	CEA	AM	FB	0	0	1	0	0	0	1	0	0	0	0	2			
			PH1	3	0	0	4	0	0	0	0	0	60	30	97	pied-billed grebe		
			PH2	0	0	0	0	0	0	0	0	0	0	7	7	COME + 1 GBHE NF		
			SW1	0	0	0	0	0	0	0	0	0	1	2	3	BAEA		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0	1COME F, 2 GBHE NF	
			SW3	0	3	3	77	0	0	0	0	0	8	1	92	COME F, GBHE NF		
SW4	0	70	0	0	0	0	0	0	0	0	0	0	70					

Key: BAEA = Bald Eagle; GBHE = Great Blue Heron; COME = Common Merganser

The Dalles Dam

—●— Current USGS Daily Average —▲— USGS Daily Average (2007-2017)



	Secchi:		USGS: Temperatures
12/16	5+	Sun	45.3
12/17	5+	Mon	45.2
12/18	5+	Tue	45.2
12/19	5+	Wed	45.1
12/20	5+	Thurs	45.1
12/21	5+	Fri	44.9
12/22	5+	Sat	44.5
	5+	AVG	45.0

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

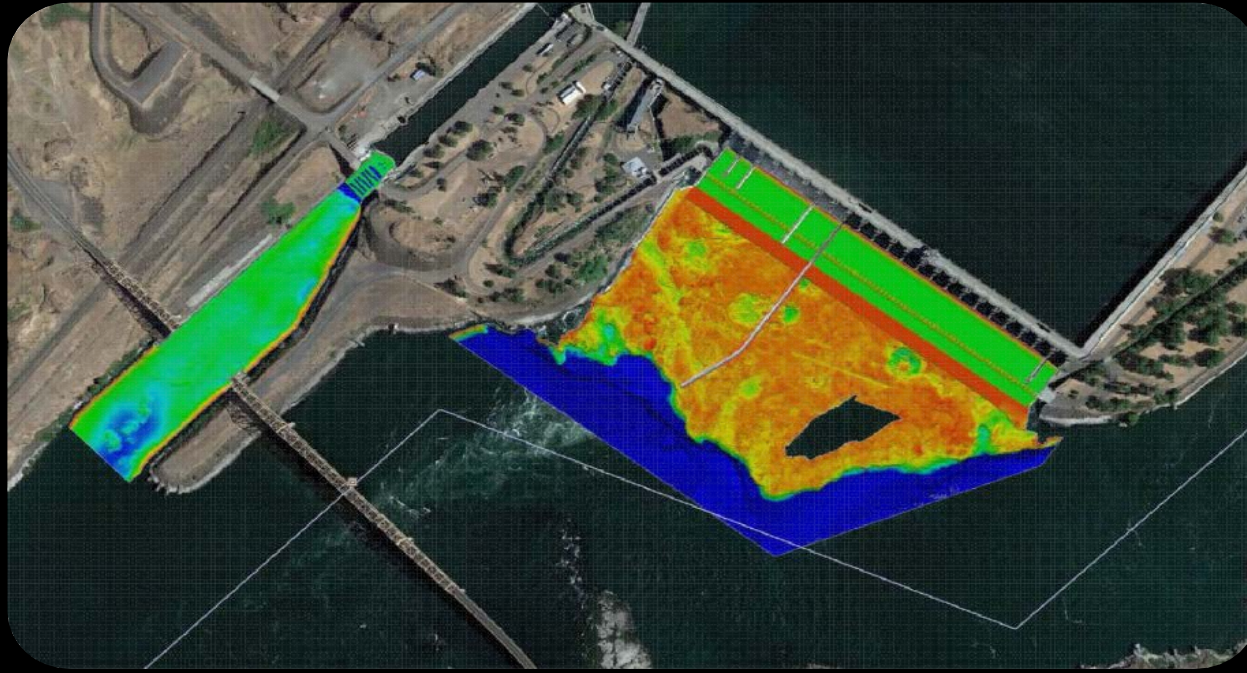
SCADA INSPECTION
= Out of criteria

Date:	North Ladder			East Ladder										
	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
12/16	1.3	10.0												
12/17	1.2	9.9												
12/18	1.3	9.9												
12/19	1.4	9.8												
12/20	1.3	10.1												
12/21	1.4	10.0												
12/22	1.4	10.0												
AVG:	1.3	10.0												

Ladder dewatered for maintainence RTS 01/20/2019

Fishways are inspected twice daily plus one SCADA inspection.

Figure 8. MBES coverage attained at The Dalles Dam spillways, stilling basin, and downstream approach to the navigation lock (November 6-7, 2018). Note data gap in south spillway due to extreme shallow water depths.



Prepared for:

U.S. ARMY CORPS OF ENGINEERS - PORTLAND DISTRICT (CENWP)



Prepared by:



DRAFT

It is important to note that an approximately 150-ft by 300-ft ovular area within the south spillway tailrace was not survey-able at the time of the survey due to shallow waters. In this area water depths were 3 feet or less. The survey coverage is illustrated qualitatively in Figure 8 where warmer colors (i.e., reds) indicate shallow water depths and cooler colors (i.e., blues) indicate deeper water depths.