The Dalles Dam Fishway Status Report

10/18/2015

Inspection Period: 10/11/2015 - 10/17/2015

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 / Comments	Temperature: 64.0 F / 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 1.3	
Entrance weir N1	0	depth (≥ 8')	Average 9.3	
Entrance weir N2	0	Closed	Bulkhead installed.	
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'	Picket leads raked as needed.	
Weir crest depth	0	1.0' ± 0.1'		
Junction pool weir JP6	0	depth (≥ 7')	Average 10.1	Weir pulled to achieve criteria with low tailwater
East entrance differential	0	1.0' - 2.0'	Average 1.5	
Entrance weir E1	0	No criteria	Average No criteria; manually adjusted as needed.	
Entrance weir E2	2	depth (≥ 8')	Average 10.1	low tailwater 7.9 and 7.8 corrected.
Entrance weir E3	0	depth (≥ 8')	Average 11.5	
Collection channel velocity	0	1.5 - 4 fps	Average 3.2	
Transportation channel velocity	0	1.5 - 4 fps	Average 2.5	
North channel velocity	0	1.5 - 4 fps	Average 2.8	
South channel velocity	0	1.5 - 4 fps	Average 3.5	
West entrance differential	0	1.0' - 2.0'	Average 1.4	
Entrance weir W1	0	depth (≥ 8')	Average 10.0	
Entrance weir W2	0	depth (≥ 8')	Average 10.0	
Entrance weir W3	0	No criteria	Average No criteria; manually adjusted as needed.	
South entrance differential	0	1.0' - 2.0'	Average 1.5	
Entrance weir S1	0	depth (≥ 8')	Average 8.3	
Entrance weir S2	0	depth (≥ 8')	Average 8.3	
JUVENILE PASSAGE				
Sluicegate operation	0	Units 1, 8, 18	Sluicegates 1-1,2,3, 8-1,2, and 18-2 open.	
Turbine trashrack drawdown	0	<1.5', wkly	Range: 0.1 - 0.7'	
Spill volume	NA	40%+-1%	Average	Spill closed on 9/1/15
Spill Pattern	NA	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. Refer to Avian Zone map. No sea lion sightings.
USDA hazing contract proposed changes for 2016; boat hazing 5 day / week through May and part of June, depending on available funding.

Operations:
Turbine trashrack drawdown completed 10/12/15. Forebay/gatewell differential in criteria.
Fishway calibration completed 10/17/15, East Exit weirs (159, 158) off, corrected by electrical personnel.
Investigating operational changes needed for potential large oil spill in Columbia. Fishway protection measures to be evaluated. Plan to be presented to FPOM when complete. Permanent boom purchased for east fishway exit (FPOM approved). Working through installation options.

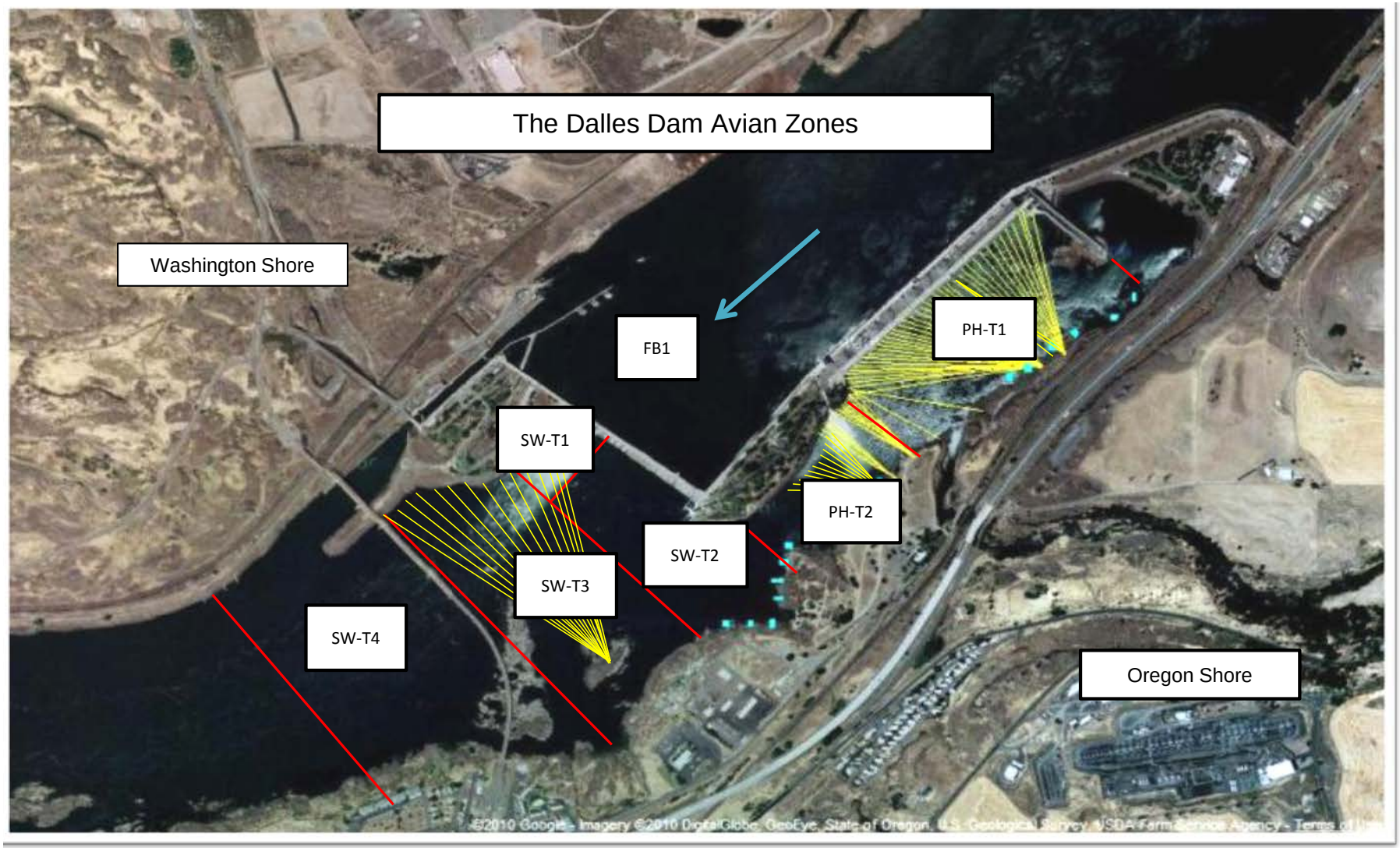
Current Outages:
Transformer T8 (MU15 & MU16) de-rated to 85MW ops through 9/14/2017

Maintenance:
Failed tarp to be removed from ice and trash sluiceway. The end gate will be closed for 30 mins., coordinated through FPOM.
Two failed collection channel dewatering pumps remaining on deck for repair. Awaiting parts.
Entrance/Exit weir sensor and PLC replacement being investigated.
East exit weir electrical panel FCQ7 parts ordered. Installation planned for next 2 outage seasons depending on funding availability.
Doing inventory assessment on fish unit spare parts and infrastructure evaluation.
Purchasing new dewatering pump motor for north fishway entrance.
Investigating cost and feasibility for 154 -157 weir replacement through project labor.
Preparing workload for upcoming winter maintenance period; entrance weir wheel replace, entrance weir guide repair, exit/entrance sensor upgrades.
Long Term repair plans ; removal/permanent closure of collection channel diffusers, repair north failed diffusers,
Fish related /non-fish funded items ; spillway evaluation, spillway crane rehab, spillgate 9 trunnion pin replace, sluiceway chaingate rehab (approx 50% complete), fish unit breaker replace (in planning), and transformer replace (in planning).
All spillway items on Critical Infrastructure list and Unfunded Requirement list. Spill gate 9 repair awaiting funding.

Studies:
North fishladder rehab study for rock wall 90% DDR review. Construction 2017/18. FPOM review ongoing.
Fish count video at north count station recording / testing underway. Result review through FPOM.
East fishladder emergency backup construction this winter likely delayed. Adjusted winter fishway dewater schedule to fit in water work period.
Crane rail replacement on tailrace and intake 2016-2017. First week august rail removal near east exit being coordinated through FPOM.
Transformer replacement planning underway. Plans to eliminate fish unit TA transformers. Work to start 2017.
North spill attraction flow continues to be reviewed through FPOM. Threshold for daily passage amount to use spill remains unresolved.

Research/Contractors:
Normandeau fish counters at east and north count stations 16 hr/day through 10/31.
Northern pikeminnow dam angling caught 4,566 NPM≥ 230mm for the year at The Dalles Dam.

Approved by: Ron Twiner
Operation Project Manager The Dalles Dam



Avian lines in yellow, zones in red, river flow in blue.

2015 Piscivorous Bird Counts

F=foraging, NF=non-foraging

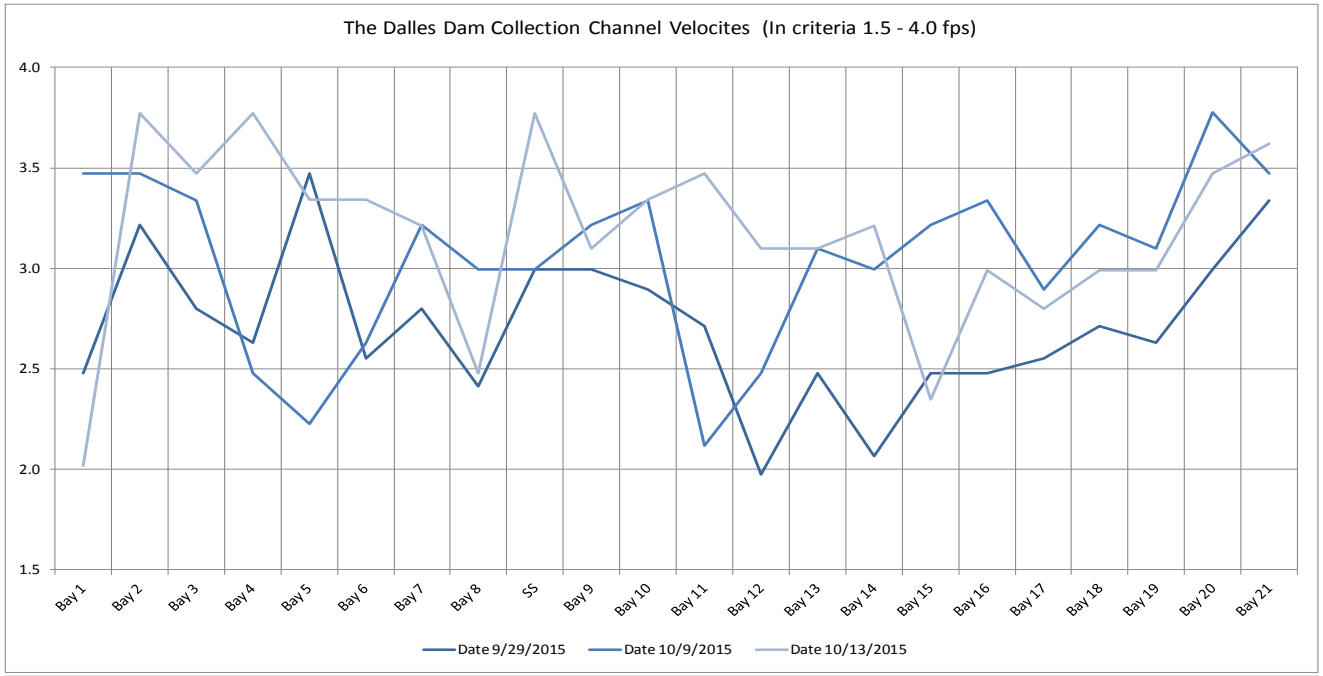
Date	Observer	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Grebe		Pelican		Other		Total birds in	Notes
				F	NF	F	NF	F	NF	F	NF	F	NF	F	NF		
10/11/15	EHK	14:43	FB	0	0	0	11	0	0	0	0	0	0	0	0	11	
		14:14	PH1	0	0	0	12	0	0	0	0	0	0	0	0	12	
		14:19	PH2	0	1	0	0	0	0	0	0	0	0	0	0	1	
		14:52	SW1	0	0	0	1	0	0	0	0	0	0	0	0	1	
		14:25	SW2	0	2	0	0	0	0	0	0	0	0	0	0	2	
		14:28	SW3	0	3	0	44	0	0	0	0	0	0	0	0	47	
		14:29	SW4	0	7	0	0	0	0	0	0	0	0	0	0	7	
10/12/15	EHK	10:01	FB	0	0	0	66	0	0	0	0	0	0	0	0	66	
		9:07	PH1	0	0	0	15	0	0	0	0	0	0	0	6	21	COME
		9:25	PH2	2	0	0	0	0	0	0	0	0	0	0	0	2	
		10:10	SW1	0	0	0	0	0	0	0	0	0	0	0	0	0	
		9:27	SW2	0	1	1	0	0	0	0	0	0	0	0	0	2	
		9:28	SW3	0	2	0	27	0	0	0	0	0	0	0	0	29	
		9:31	SW4	0	28	0	0	0	0	0	0	0	0	0	0	28	
10/13/15	GJF	1452	FB	0	2	0	0	0	0	3	0	0	0	0	0	5	
		1445	PH1	0	0	10	28	0	0	0	0	0	0	0	0	38	
		1425	PH2	0	0	0	0	0	0	0	0	0	0	0	0	0	
		1500	SW1	0	4	1	0	0	0	0	0	0	0	0	1	6	GBH
		1435	SW2	1	1	0	0	0	0	0	0	0	0	0	1	3	GBH
		1436	SW3	0	0	0	30	0	0	0	0	0	0	0	0	30	
		1438	SW4	6	36	0	12	0	0	0	0	0	0	0	0	54	
10/14/15	GJF	1030	FB	1	0	2	62	0	0	12	0	0	0	0	0	77	
		952	PH1	0	1	1	5	0	0	0	0	0	0	0	1	8	COME
		1000	PH2	0	0	0	0	0	0	0	0	0	0	0	0	0	
		1040	SW1	0	2	1	0	0	0	0	0	0	0	0	0	3	
		1005	SW2	0	0	0	4	0	0	0	0	0	0	0	0	4	
		1006	SW3	0	3	0	38	0	0	0	0	0	0	0	4	45	COME
		1007	SW4	0	80	0	10	0	0	0	0	0	0	0	0	90	
10/15/15	GJF	1435	FB	0	1	3	0	0	0	3	0	0	0	0	0	7	
		1350	PH1	0	0	8	0	0	0	0	0	0	0	1	0	9	GBH
		1400	PH2	0	0	0	0	0	0	0	0	0	0	0	0	0	
		1340	SW1	0	4	1	0	0	0	0	0	0	0	0	1	6	GBH
		1411	SW2	0	1	1	1	0	0	0	0	0	0	0	1	4	GBH
		1413	SW3	0	0	0	76	0	0	0	0	0	0	0	0	76	
		1414	SW4	30	57	5	20	0	0	8	0	0	0	0	0	120	
10/16/15	JWR	10:46	FB	0	1	0	62	0	0	0	2	0	0	1	0	66	Loon
		10:04	PH1	0	1	0	16	0	0	0	0	0	0	0	3	20	COME
		9:42	PH2	0	0	0	0	0	0	0	0	0	0	0	0	0	
		10:48	SW1	0	0	0	0	0	0	0	0	0	0	0	0	0	
		9:45	SW2	0	0	1	0	0	0	0	0	0	0	0	0	1	
		9:46	SW3	0	0	1	32	0	0	0	0	0	0	0	0	33	
		9:47	SW4	0	73	0	3	0	0	0	0	0	0	0	0	76	
10/17/15	JWR	13:41	FB	0	0	0	26	0	0	0	2	0	0	0	0	28	Grebe
		12:49	PH1	0	0	1	23	0	0	0	0	0	0	0	8	32	COME
		12:54	PH2	1	1	1	0	0	0	0	0	0	0	0	0	3	
		13:43	SW1	0	0	0	0	0	0	0	0	0	0	1	0	1	
		13:00	SW2	0	0	0	0	0	0	0	0	0	0	0	0	0	Kingfisher
		13:01	SW3	0	0	0	22	0	0	0	0	0	0	0	0	22	
		13:02	SW4	31	0	0	0	0	0	0	0	0	0	0	0	31	

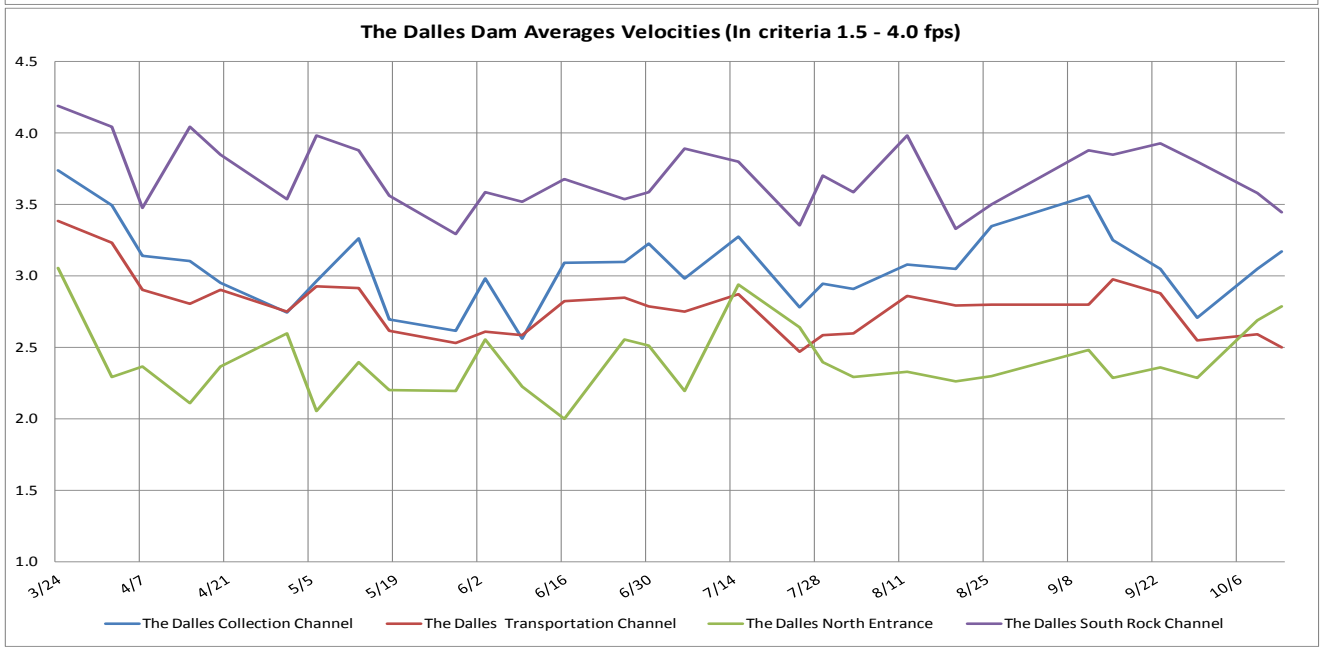
The Dalles East

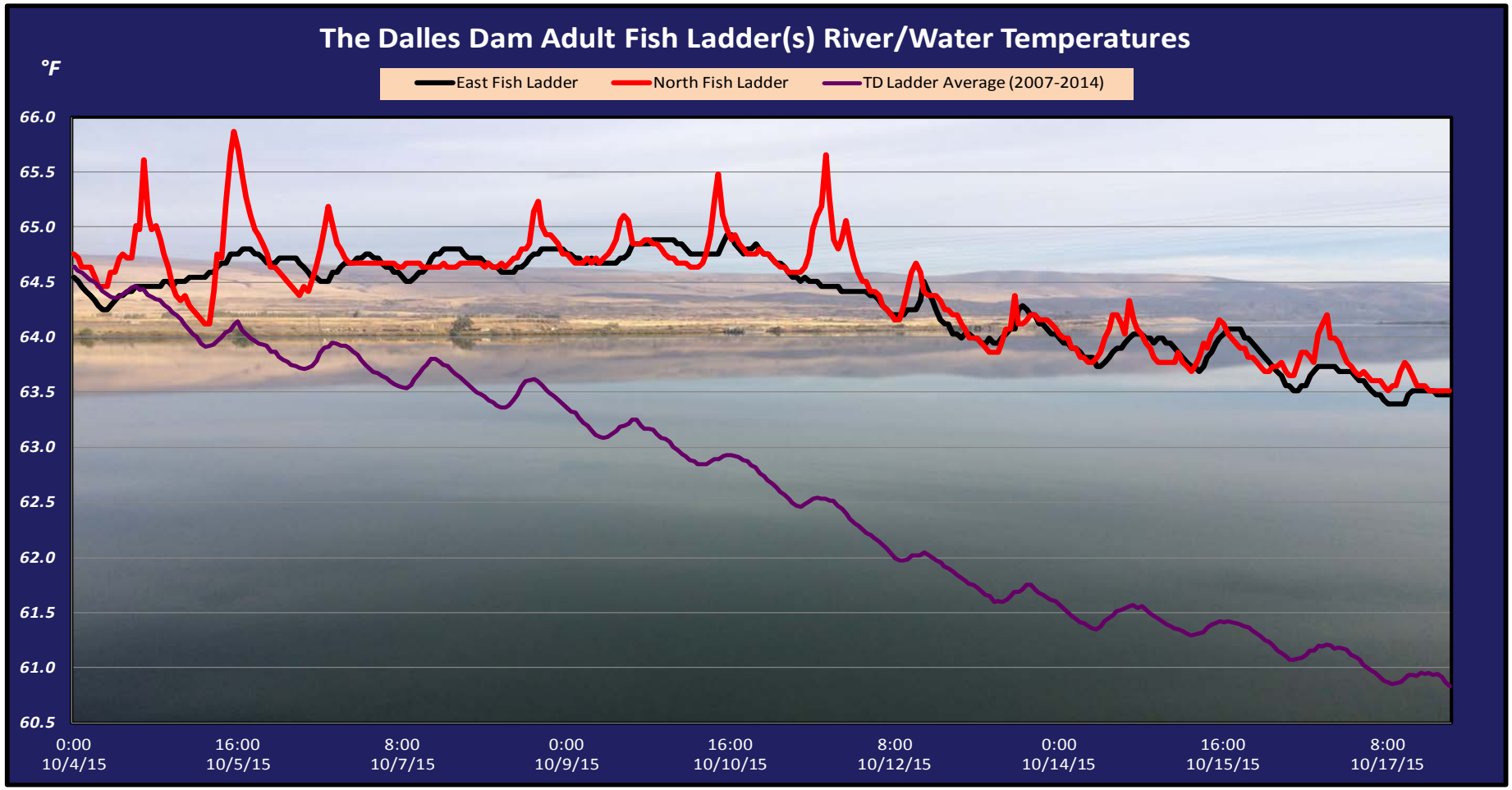
Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
10/11	6437	5425	1012	1213	842	371	77	60	17	0	0	0	0
10/12	4235	3714	521	1727	1048	679	158	156	2	1	0	0	1
10/13	4613	3682	931	1563	1049	514	238	196	42	1	0	1	2
10/14	3563	3240	323	1217	756	461	120	109	11	1	0	0	2
10/15	2959	2531	428	1014	683	331	95	90	5	0	0	0	6
10/16	3833	3522	311	925	535	390	99	89	10	0	0	1	0
10/17	2346	1985	361	556	354	202	118	116	2	-1	0	0	1
total	**27986**	**24099**	**3887**	**8215**	**5267**	**2948**	**905**	**816**	**89**	**2**	**0**	**2**	**12**
% North passage	*4.2%*	*4.1%*	*4.8%*	*8.9%*	*8.2%*	*10.2%*	*8.6%*	*8.3%*	*11.0%*	*50.0%*	*NA*	*0.0%*	*14.3%*

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
10/11	288	262	26	80	52	28	8	7	1	0	0	0	0
10/12	373	306	67	180	97	83	19	14	5	1	0	0	1
10/13	176	160	16	119	55	64	29	24	5	0	0	0	1
10/14	186	136	50	105	65	40	6	5	1	1	0	0	0
10/15	50	40	10	76	48	28	5	5	0	0	0	0	0
10/16	49	43	6	108	71	37	9	8	1	0	0	0	0
10/17	107	84	23	135	80	55	9	11	-2	0	0	0	0
total	**1229**	**1031**	**198**	**803**	**468**	**335**	**85**	**74**	**11**	**2**	**0**	**0**	**2**


The Dalles Dam Collection Channel Velocites (In criteria 1.5 - 4.0 fps)
4.0
3.5
3.0
2.5
2.0
1.5
Bay 1
Bay 2
Bay 3
Bay 4
Bay 5
Bay 6
Bay 7
Bay 8
SS
Bay 9
Bay 10
Bay 11
Bay 12
Bay 13
Bay 14
Bay 15
Bay 16
Bay 17
Bay 18
Bay 19
Bay 20
Bay 21
Date 9/29/2015
Date 10/9/2015
Date 10/13/2015


The Dalles Dam Averages Velocities (In criteria 1.5 - 4.0 fps)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
3/24
4/7
4/21
5/5
5/19
6/2
6/16
6/30
7/14
7/28
8/11
8/25
9/8
9/22
10/6
The Dalles Collection Channel
The Dalles Transportation Channel
The Dalles North Entrance
The Dalles South Rock Channel


The Dalles Dam Adult Fish Ladder(s) River/Water Temperatures
°F
East Fish Ladder
North Fish Ladder
TD Ladder Average (2007-2014)
66.0
65.5
65.0
64.5
64.0
63.5
63.0
62.5
62.0
61.5
61.0
60.5
0:00 10/4/15
16:00 10/5/15
8:00 10/7/15
0:00 10/9/15
16:00 10/10/15
8:00 10/12/15
0:00 10/14/15
16:00 10/15/15
8:00 10/17/15

USGS: tp://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201510.lcol.ht

Secchi:		Temperatures
5.0	Sun	64.6
5.0	Mon	64.3
5.0	Tue	64.0
5.0	Wed	63.8
5.0	Thurs	63.8
5.0	Fri	63.7
5.0	Sat	63.5
5.0	AVG	64.0

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			
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	
10/11			1.4	7.5	11.4	12.8	11.4	1.5	10.6	10.6		1.5	8.4	8.3	
	1.4	9.3	1.4	7.5	11.2	12.6	11.2	1.5	10.5	10.5		1.4	8.4	8.3	
	1.4	9.4	1.6	7.4	11.1	12.5	11.1	1.4	10.6	10.6		1.4	8.4	8.4	
10/12			1.3	8.0	11.2	12.6	11.2	1.4	10.5	10.5		1.5	8.3	8.3	
	1.4	9.3	1.5	7.5	10.9	12.3	10.9	1.5	10.5	10.5		1.5	8.2	8.3	
	1.4	9.3	1.5	7.7	10.9	12.3	10.9	1.4	10.4	10.6		1.5	8.3	8.4	
10/13			1.6	7.6	10.5	11.9	10.5	1.2	10.5	10.5		1.5	8.3	8.3	
	1.4	9.3	1.4	8.2	10.9	12.3	10.9	1.4	10.5	10.5		1.5	8.2	8.2	
	1.3	9.4	1.4	8.1	10.9	12.3	10.9	1.4	10.4	10.5		1.5	8.3	8.3	
10/14			1.4	8.4	10.8	12.2	10.8	1.2	10.5	10.5		1.4	8.3	8.3	
	1.4	9.3	1.4	8.2	10.9	12.3	10.9	1.4	10.5	10.4		1.5	8.3	8.2	
	1.3	9.6	1.3	8.2	11.3	12.7	11.3	1.4	10.6	10.6		1.5	8.3	8.4	
10/15			1.5	8.3	10.4	11.8	10.4	1.3	10.6	10.6		1.4	8.3	8.3	
	1.2	9.4	1.7	7.9	10.0	11.4	10.0	1.6	9.4	9.4		1.5	8.2	8.2	
	1.2	9.4	1.4	10.0	9.7	11.1	9.7	1.5	9.5	9.5		1.4	8.3	8.3	
10/16			1.8	10.0	**7.8**	9.2	7.8	1.4	9.5	9.5		1.4	8.3	8.3	
	1.1	9.2	1.5	12.0	8.7	10.1	8.7	1.7	9.0	9.0		1.4	8.4	8.4	
	1.1	9.2	1.6	12.1	8.6	10.0	8.6	1.6	9.1	9.1		1.4	8.3	8.3	
10/17			1.8	11.4	**7.7**	9.1	7.7	1.4	9.0	9.0		1.4	8.3	8.3	
	1.0	9.1	1.5	12.0	8.3	9.7	8.3	1.6	8.9	8.9		1.4	8.3	8.3	
	1.2	9.2	1.5	10.0	9.2	10.6	9.2	1.6	8.9	8.9		1.5	8.3	8.3	
AVG:	1.3	9.3	1.5	9.0	10.1	11.5	10.1	1.4	10.0	10.0	closed	1.5	8.3	8.3	

S P I L L O N S E A L

Fishways are inspected twice daily plus one SCADA inspection.