U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#17-2018

Project: McNary
Biologist: Bobby Johnson and Denise Griffith
Dates: June 22 to 28, 2018

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 14 turbine units available for service. (See table & comments below for details).	**Hard**	**Soft**
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Table 1. McNary Unit Outages (OOS) and Return to Service (RTS)

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
7	6/18	0617	6/28	1622	Annual maintenance and lubricant replacement.
2	6/25	0715	6/28	1358	Annual maintenance.
9	6/26	1006	6/26	1028	ESBS camera inspections.
10	6/26	1030	6/26	1050	ESBS camera inspections.

Comments: There is nothing to report.

Adult Fish Passage Facilities

McNary fisheries biologists performed adult fishways measured inspections on June 23, 25 and 27. NOAA fisheries personnel did their monthly inspection on June 26. Temperature probe data was downloaded on June 27. Adult fish counting and video review of night time lamprey passage continued.

Fish Ladder Exits:

Yes	No	Location	Criteria	Comments
X		Oregon Exit	Head over weir 1.0’ to 1.3’	
X		Oregon Count Station Differential	0.0’ to 0.5’	
X		Washington Exit	Head over weir 1.0’ to 1.3’	
X		Washington Count Station Differential	0.0’ to 0.5’	

Comments: Debris loads were minimal to light near the Oregon and Washington exits. Picketed leads were cleaned by the general maintenance staff as needed, including Saturday. New incoming debris loads were minimal. At the Oregon exit, on June 18, there was a brief power outage due to electrical switching. At the Washington exit, on June 25, there was a brief power outage due to electrical switching.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			North Oregon Entrance Head Differential	1.0' – 2.0'	
X			NFEW2 Weir Depth	≥ 8.0'	
X			NFEW3 Weir Depth	≥ 8.0'	
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
X			SFEW1 Weir Depth	≥ 8.0'	
X			SFEW2 Weir Depth	≥ 8.0'	
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 1.9 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: There are no problems to report.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X			WA shore Wasco County PUD Turbine Unit
	X		WA shore Wasco PUD Bypass
X			Oregon Ladder Fish Pump 1, Blade angle: 22.
X	X		Oregon Ladder Fish Pump 2, Blade angle: 21 to 22.
X			Oregon Ladder Fish Pump 3, Blade angle: 22.
X			OR North Powerhouse Pool supply from juvenile fishway

Comments: From June 25, at 1342 hours to June 28 at 1740 hours fish pump 2 was in standby due to station service testing and upgrades. During this time, fish pumps 1 and 3 had blade angles of 26 and 24 degrees, respectively. The ladder remained in criteria. On June 26, from 0750 to 0820 and 0828 to 0850 hours, fish pump 3 was out of service due to thrust bearing oil level indicator issues, which were resolved. On June 28, from 1350 to 1400 and 1714 to 1740 hours, fish pumps 1 and 3 were out of service due to the station service upgrade testing, which included station service unit 2, which was recently repaired.

Juvenile Fish Passage Facility

Every other day sampling continued.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to moderate near powerhouse.
X			Trash rack differentials measured this week?	Daily.
X			Trash rack differentials acceptable?	
	X		Any debris seen in gatewells? (% coverage)	
	X		Any oil seen in gatewells?	

Comments: The forebay debris load near the powerhouse was minimal to moderate. Debris accumulation along the spillway was moderate to heavy. New incoming debris loads were minimal. Changes in wind direction moved the debris back and forth across the forebay from the spillway to the Oregon ladder.

No trash racks were cleaned this week. No problems were noted in the gatewell slots.

Extended-length submersible bar screen (ESBSs)/Vertical barrier screen (VBSs):

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
X			ESBSs inspected this week?
X			ESBSs inspection results acceptable?
X			VBSs differentials checked this week?
X			VBSs differentials acceptable?

Comments: The brush cycle for the ESBS in 1C slot remained in timer mode. On June 25, the brush cycle for the ESBS in 14C slot was switched to timer mode after the brush had tripped multiple alarms. On June 28, the brush on the screen in 10A slot tripped an alarm and was reset. ESBS camera inspections in units 9 and 10 revealed no problems. Though operational, the backup camera functioned intermittently. The cable for the primary camera has not yet been returned from the manufacture.

VBS differential monitoring occurred daily. No high differentials were measured. On June 22, 25, 26 and 28, a total of eleven VBSs were cleaned. One smolt mortality was observed.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe:

Yes	No	NA	Item	Number of orifices in service
X			Orifices operating satisfactory?	42
X			Dewatering and cleaning systems operating satisfactory? See note below.	

Comments: Orifices were adjusted for VBS cleaning. Orifice attraction lights and operator air leaks were replaced or repaired as required.

This week, we noted the two side dewatering valves appear to be operating more frequently and the motors appear to be warmer. The fisheries staff will monitor the situation.

The transition screen brush remains out of service until the contractor can resolve the limit switch issues at an undetermined date. On June 25, two transition brush alarms came in. It appears someone tried to run the brush. Fortunately, the breaker for the brush was under a safe clearance lock out.

On June 28, at 1336 and 1712 hours, a brief power outage occurred due to the station service testing. After the first outage, the side screen brush tripped an alarm. After the brush was reset, the brush cycle sequence appeared to "find" itself and return to normal. After the second outage, no alarms occurred. However, the brush cycle sequence again had to "find" itself. The programmed brush cycle sequence continues to be of great concern.

Bypass Facility:

Yes	No	NA	Item
X			Sample gates on?
		X	PIT-tag sampling system on? (Remain off unless a study is occurring.)

Comments: The sample gates were on during secondary bypass for sample collection. This week, 200 juvenile lamprey and 198,103 smolts were bypassed.

On June 26, the winterization drain off of the A side water add in line was found cracked. The drain was closed and will be repaired as soon as the parts come in.

On June 28, at 1303 and 1655 hours, a brief power outage occurred due to the station service testing. Neither outage affected the facility as it was a primary bypass day.

TSW Operations: On June 25, the hoist used in bay 19 was properly attached to the spillgate and the brake issues for the crane used at bay 20 were resolved. After setting the limits on the hoist and crane, at 1600 hours, the spill pattern was returned to Table MCN-9, without TSWs.

River Conditions

Table 2. River Conditions at McNary Dam.

Daily Average River Flow (kcfs)		**Daily Average Spill (kcfs)**		**Water Temperature (°F)**		**Water Clarity (Secchi disk - feet)**	
High	Low	High	Low	High	Low	High	Low
271.2	220.3	163.3	110.4	64.7	64.2	5.5	5.0

Comments: The above data is supplied by Anchor, QEA except water clarity, which is provided by the control room. The summer spill program continued with fifty percent of river flow being spilled. On June 28, sixty percent of the flow was spilled.

Daily temperature monitoring by Anchor, QEA throughout the juvenile system continued. Temperature data and probe issues are described in a separate weekly report.

Other

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur on July 10.

Avian Activity: Avian tailwater counts continued and are recorded in Table 3 below.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
June 22	Spill	12	0	10	29
	Powerhouse	0	0	0	1
	Outfall	0	0	0	4
June 23	Spill	0	1	8	16
	Powerhouse	0	0	0	4
	Outfall	0	0	0	8
June 24	Spill	8	0	3	8
	Powerhouse	0	0	0	2
	Outfall	0	0	0	3
June 25	Spill	40	0	10	22
	Powerhouse	0	0	0	6
	Outfall	0	0	0	4
June 26	Spill	4	2	0	28
	Powerhouse	0	0	0	4
	Outfall	0	0	0	4
June 27	Spill	6	3	0	31
	Powerhouse	0	0	0	4
	Outfall	0	0	0	0
June 28	Spill	3	0	0	33
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0

Pelicans continued to be observed in all zones, feeding or roosting along the shorelines and at the bypass outfall. Pelicans appear to be roosting below the separator building at night. Gull and tern numbers appeared to fluctuate with a slow increase. Most birds appear to be feeding in the spillway. Cormorants remained difficult to observe. We suspect they are feeding at the outfall.

An occasional osprey, pelican, gull, cormorant, blue heron or tern was observed in the forebay. Grebe were not observed anywhere this week. Pelicans, cormorants, terns and gulls were roosting on the rocks by the Washington shore boat dock. One to two pelicans or cormorants were observed just outside the Oregon ladder exit.

The outfall hazing water sprinklers remain out of service due to system damage, which will require a contract to repair/replace. The fisheries staff is examining the possibility of purchasing a second bird distress call system for the outfall area. The bird distress calls deployed along the navigation lock wing wall have been functioning well. The calls have been adjusted weekly. USDA Wildlife Services continued with two shifts. However, the second shift concludes on July 14. Also, boating hazing occurred on Monday through Thursday. The boat has been used slightly upstream of the outfall pipe. When weather conditions do not allow for boat hazing, the crew hazed from the shoreline and the project. The boat hazing concludes on July 7.

Invasive Species: The mussel station examinations on June 23 revealed no problems. One Siberian prawn was removed for the sample and euthanized.

Fish Rescue/Salvage**:** None occurred.

Research: GBT monitoring occurred twice. One smolt exhibited signs of GBT. The University of Idaho adult lamprey passage telemetry study continued.

Project: Ice Harbor
Biologist: Ken Fone
Dates: June 22 – June 28, 2018

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	Hard	Soft
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Ice Harbor Unit Outages (OOS) and Return to Service (RTS).

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
2	4/25/16	0606	---	---	Runner replacement
4	12/17/17	1342	---	---	Investigate oil leak.

Comments: None.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on June 25, 27, and 28.

Fish Ladders:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head ≤ 0.3’	
X		North Ladder Picketed Lead Differential	Head ≤ 0.3’	
X		North Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	
X		South Ladder Exit Differential	Head ≤ 0.3’	
X		South Ladder Picketed Lead Differential	Head ≤ 0.3’	
X		South Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
	X		South Shore Entrance (SFE-1) Weir Depth	≥ 8.0’ or on sill	4.3’, 7.9’
	X		South Shore Channel/Tailwater Differential	1.0’ – 2.0’	2.7’
X			South Shore Channel Velocity	1.5 – 4.0 fps	
X			North Powerhouse Entrance (NFE-2) Weir Depth	≥ 8.0’ or on sill	
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0’ – 2.0’	0.8’
	X		North Shore Entrance (NEW-1) Weir Depth	≥ 8.0’ or on sill	7.8’, 7.6’, 6.5’
	X		North Shore Channel/Tailwater Differential	1.0’ – 2.0’	2.1’

Comments: The SFE-1 weir depth was 4.3’ and the channel/tailwater differential was 2.7’ on the June 25 inspection. For most of the work day on June 25, electricians investigated the problem of the breaker for the SFE-1 weir intermittently tripping off, by test-operating the weir up and down. Either or both of SFE-1 and/or SFE-2 weirs were open 4-6’ during the testing, resulting in the channel/tailwater diffential sometimes also being out of criteria. Electricians and the powerhouse operator believe the water pressure against the weir from having 7 south shore AWS pumps running was sometimes overloading the circuit when the weir was trying to raise. Consequently, the operator changed operation to 5 pumps running to reduce the water pressure against the weir.

The SFE-1 weir depth was 7.9' and the NFE-2 channel/tailwater differential was 0.8' on the June 28 inspection. The operator was asked to operate 6 south shore AWS pumps instead of 5 pumps to help bring these inspections points into criteria.

The NEW-1 weir depth was below criteria on the June 25, 27, and 28 inspections and the channel/tailwater differential was slightly above criteria on the June 28 inspections. The operator was asked to lower the NEW-1 weir to bring these inspection points into criteria. The weir is being operated in manual mode to reduce the wear and tear of the weir operating machinery trying to adjust to fluctuating tailwater levels from spill.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
5-7 pumps	1-3 pumps		Status of the 8 South Shore AWS Pumps
2 pumps	1 pump		Status of the 3 North Shore AWS Pumps

Comments: All of the south shore AWS pumps were shut off for less than half an hour to take the water pressure off of SSE-1 weir so it could be lowered down for normal operation following the SFE-1 weir testing on June 25.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	4 square yards
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 12%
	X		Any oil seen in gatewells?	

Comments: None.

STSs/VBSs:

Yes	No	NA	Item
	X		STSs deployed in all slots and in service?
X			STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
	X		STSs inspected this week?
		X	STSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: The STSs remained in continuous-run mode due to the presence of subyearling chinook with average fork lengths of less than 120 mm in the Ice Harbor juvenile fish sample.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Juvenile Fish Facility: The fish facility is being operated in primary bypass, except when collecting fish for sampling.

Fish Sampling: Sampling is occurring on Mondays and Thursdays of each week. See the tables below for a summary of the sampling results.

Date: June 25

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	0	---	---	---
Chinook yearling unclipped	0	---	---	---
Chinook subyearling clipped	6	0	0	0
Chinook subyearling unclipped	12	1	0	0
Steelhead clipped	0	---	---	---
Steelhead unclipped	0	---	---	---
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	18	1	0	0

Date: June 28

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	0	---	---	---
Chinook yearling unclipped	0	---	---	---
Chinook subyearling clipped	8	0	0	0
Chinook subyearling unclipped	11	1	0	0
Steelhead clipped	0	---	---	---
Steelhead unclipped	0	---	---	---
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	19	1	0	0

Removable Spillway Weir (RSW): Voluntary spill for fish passage, including spill through the RSW, is occurring.

River Conditions

River conditions at Ice Harbor Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
74.3	60.7	50.5	19.0	65	63	4.8	4.6

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Unit 1, 3, 5, and 6 cooling water strainers were inspected on June 27. The number and kinds of fish found (all decomposing) were: 1 adult lamprey, 1 juvenile lamprey, 2 bullheads or catfish, and 12 Siberian prawns.

Transformer cooling water strainers were inspected on June 26. A total of 9 live juvenile lamprey were recovered and released in the river in good condition.

Avian Activity: Gull and cormorant numbers were very low this week (see the table below). Most of the pelicans were observed foraging downstream of the spillway. Contracted land-based hazing of piscivorous birds for 8 hours per day is occurring.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
June 22	1	2	0	0	44
June 23	---	---	---	---	---
June 24	---	---	---	---	---
June 25	0	1	0	0	29
June 26	0	3	0	0	28
June 27	0	0	0	0	42
June 28	0	1	0	0	18

Invasive Species: No exotic species that are new to the area have been found.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by Anchor, frozen and properly disposed of in a landfill. Daily and total Siberian prawn counts at Ice Harbor Dam Fish Facility for this reporting period are reported below.

Date	Sample (euthanized)	Collection*
June 25	2	2
June 28	0	0
Totals	2	2

*Collection and sample numbers are the same as the facility when sampling at 100%

Fish Rescue/Salvage: Cooling water strainers were inspected for lamprey and other fish, as summarized above.

Research: There is no on-site research occurring at this time.

Project: Lower Monumental
Biologists: Chuck Barnes and Raymond Addis
Dates: June 22 - 28, 2018

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	Hard	Soft
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Lower Monumental Unit Outages (OOS) and Return to Service (RTS)

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
Unit 1	12/10/2014		09/25/2018	ERTS	Rehabilitation Overhaul
Unit 2	06/22/2018	0700	06/22/2018	1125	Trash Rack Raking
Unit 3	06/22/2018	0700	06/22/2018	1525	Trash Rack Raking
Unit 3	06/25/2018	0700	08/31/2018	ERTS	6-Year Overhaul
Unit 6	06/28/2018	1731	07/03/2018	ERTS	Governor Oil System Troubleshooting

Comments: Units went into Hard Constraint at 0001 on April 1.

Adult Fish Passage Facility

The adult fishways were inspected by Corps and Anchor QEA biologists on June 22, 23, 24, 25 and 27.

Fish Ladder:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head $\leq$ 0.5’	
	X	North Ladder Picketed Lead Differential	Head $\leq$ 0.4’	
X		North Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	
X		South Ladder Exit Differential	Head $\leq$ 0.5’	
X		South Ladder Picketed Lead Differential	Head $\leq$ 0.3’	
X		South Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	

Comments:
North Ladder Picketed Lead differential was out of criteria on the June 23 inspection with a reading of 0.6 feet. JFF personnel found the downstream pickets clogged with woody debris and American shad mortalities. The pickets were cleaned and the reading went back into criteria.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Shore Entrance (NSE-1) Weir Depth	≥ 8.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	≥ 8.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
		X	South Powerhouse Entrance (SPE-1) Weir Depth	≥ 8.0' or on sill	
		X	South Powerhouse Entrance (SPE-2) Weir Depth	≥ 8.0' or on sill	
X			South Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
X		X	South Shore Entrance (SSE-1) Weir Depth	≥ 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	≥ 6.0'	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments: South Powerhouse Entrance (SPE-1) was at sill during all inspections with readings of 7.3, 7.5, 7.4, 6.6 and 6.8 feet respectively. South Powerhouse Entrance (SPE-2) was at during all inspections with readings of 7.3, 7.5, 7.4, 6.6 and 6.8 feet respectively. South Shore Entrance (SSE-1) was at sill during all inspections with readings of 7.3, 8.1, 7.7, 7.2 and 7.5 feet respectively.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
No		X	AWS Fish Pump 1
Yes			AWS Fish Pump 2
Yes			AWS Fish Pump 3

Comments: AWS Fish pump 1 is out of service for seized Wicket Gate Bushings. There is no current estimated return to service date.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	0 sq yd average
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 5%
	X		Any oil seen in gatewells?	

Comments: Large woody debris was raked off of the trash racks for Units 2 and 3 on June 22.

STSs/VBSs:

Yes	No	NA	Item
X			STSs deployed in all slots and in service?
X			STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
	X		STSs inspected this week?
		X	STSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: STS's were operating in continuous mode during this reporting period due to average sub-yearling Chinook and sockeye lengths being less than 120 mm.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	18
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Collection Facility: Collection into raceways for transport began at 0700 on April 23.

Gas Bubble Trauma Monitoring (GBT): GBT monitoring sampling began on April 10.

Transport Summary: Every-day barging changed to alternate day barging on May 22. A total of 27,613 fish were collected and 26,068 were transported during this reporting period.

Spillway Weir: RSW went into service when Spring Spill began at 0001 on April 3. Summer Spill began at 00:00:00 on June 21.

River Conditions

River conditions at Lower Monumental Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (°F)*		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
71.3	57.2	17.1	16.5	64.8	63.4	6.0	4.1

*Scroll case temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on June 13. No live fish were recovered. Mortalities included 7 juvenile salmon and 4 juvenile lamprey.

Avian Activity: Gulls and pelicans were the main foraging piscivorous bird species observed in the tailrace during fish ladder inspections this week.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
6/22/2018	1100	12	0	0	0	6
6/23/2018	1100	13	0	0	0	3
6/24/2018	1100	1	0	0	0	0
6/25/2018	1100	0	0	0	0	0
6/26/2018	1130	0	0	0	0	2
6/27/2018	1145	0	0	0	0	4
6/28/2018	1245	7	0	0	0	0

Comments: Bird hazing efforts by USDA personnel ended at 2000 on June 2.

Outfall pipe bird water cannons were turned off on June 11, due to a damaged water cannon at pipe exit. The standby set of cannons had a missing water cannon and were already out of service.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on June 2.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by PSMFC and Anchor, frozen and properly disposed of in a landfill. No Siberian prawns were collected in the sample at Lower Monumental Dam for this reporting period.

Fish Rescue/Salvage: No fish rescue during this reporting period.

Research: No onsite research is in progress at this time.

Project: Little Goose
Biologists: Scott St. John and Richard Weis
Dates: June 22-28, 2018

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	**Hard**	**Soft**
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Little Goose Unit Outages (OOS) and Return to Service (RTS)

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
5	04/14/17	14:11	11/16/18	17:00	Spider and upper guide bearing repair.
4	06/12/18	17:00	06/22/18	17:00	Forced due to VBS damage

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on June 24, 26, and 28.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head $\leq$ 0.5’	
X			Fish Ladder Picketed Lead Differential	Head $\leq$ 0.3’	
X			Fish Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	
X			Fish Ladder Cooling Water Pumps in Service		
X			Fish Ladder Exit Cooling Water Pumps Operating Satisfactorily		

Comments: Fish ladder cooling pump commenced operation on June 28 at 19:30 once XJ-7 was repaired.

Fishway Entrances and Collection Channel: None.

Yes	No	Sill	Location	Criteria	Measurements
	X		South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0’	7.8 on 6/28
	X		South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0’	7.9 on 6/28
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 7.0’ or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	$\geq$ 7.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
	X		North Shore Entrance (NSE-1) Weir Depth	$\geq$ 6.0’ or on sill	5.6 on 6/28
	X		North Shore Entrance (NSE-2) Weir Depth	$\geq$ 6.0’ or on sill	5.6 on 6/28
X			North Shore Channel/Tailwater Differential	1.0’–2.0’	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Adult fishway control system is currently operating in manual mode. Little Goose dam conducted a powerhouse line outage on June 28 and was forced to spill in exceedance of the required 30% spill. Therefore, tailwater conditions were abnormal when the adult fishway inspection was conducted. Fishway is currently operating within criteria.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X			AWS Fish Pump 1
X			AWS Fish Pump 2
X			AWS Fish Pump 3

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comment
X			Forebay debris load acceptable? (amount)	
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: Gatewell drawdown differential measurements on unit 1 were taken on June 28 and were in criteria. There is approximately 100 square feet of floating woody debris currently inside the trash shear boom in the forebay.

ESBS/VBS:

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
	X		ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
X			VBSs differentials checked this week?
X			VBSs differentials acceptable?
	X		VBSs inspected this week?

Comments: VBS differential measurements on unit 1 were taken on June 28 and were in criteria.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: The limitorque motor that automatically adjusts weirs for water elevation in the primary dewatering structure is currently running in auto mode and appears to be working well.

Collection Facility: Juvenile fish facility is currently operating. The facility was changed to every other day barging on May 24.

Transport Summary: Daily barging commenced on April 24 and every other day barging commenced on May 24. The collection and transportation facility operated within criteria this report period. A total of 52,080 fish were collected, and 48,302 were transported via barge. The descaling and mortality rates were 0.6% and 0.2% respectively. This weekly report period, 1 adult lamprey were removed from the raceways or sample and released one mile above the Dam at Little Goose Landing.

Spillway Weir: Spring spill operations began on April 03 in accordance to the Fish Passage Plan. Adjustable spillway weir crest height was changed to the high crest position on June 11 at 1410.

River Conditions

River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
71.4	57.3	27.0	18.1	64.3	63.5	4.4	3.5

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainers are being inspected and results submitted every other week.

Avian Activity: Average daily piscivorous bird counts by zone for the report period at Little Goose Dam are reported below.

Zone	Gull	Cormorant	Tern	Pelican	Grebe
Unmodified boat barrier	0	0	0	0	0
Modified boat barrier*	0	0	0	0	0
Forebay debris	0	0	0	0	0
Trash/shear boom	0	0	0	0	0
Forebay count	0	0	0	0	0
Tailrace count	1	0	0	0	0

*modified and unmodified boat barrier section was removed on 7 buoys directly upstream of the ASW.

Invasive Species: No invasive species have been observed on the mussel station.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by Oregon Department of Fish and Wildlife and Anchor, frozen and properly disposed of in a landfill. Daily and total Siberian prawn counts at Little Goose Dam for this reporting period are reported below.

Date	Sample (euthanized)	Collection*
6-22	0	0
6-23	0	0
6-24	2	40
6-25	0	0
6-26	0	0
6-27	0	0
6-28	1	20
Total	**3**	**60**

*Collection and sample numbers are the same as the facility when sampling at 100%

Gas Bubble Trauma (GBT): GBT monitoring was performed on June 25. Personnel examined 100 fish and 1 had symptoms of GBT.

Fish Rescue/Salvage: None.

Research: PNNL is currently monitoring hydrophones and associated equipment for an acoustic telemetry study.

Project: Lower Granite
Biologists: Elizabeth Holdren and Stephen Hampton
Dates: June 22- June 28, 2018

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	Hard	Soft
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Lower Granite Unit Outages (OOS) and Return to Service (RTS)

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
3	June 18	0705	June 27	1307	Repair governor oil leak.
6	June 24	0718	June 24	1030	ESBS/VBS Inspection
2	June 24	1040	June 24	1320	ESBS/VBS Inspection
5	June 24	1321	June 24	1616	ESBS/VBS Inspection
4	June 25	0918	June 25	1147	ESBS/VBS Inspection
1	June 25	1157	June 25	1420	ESBS/VBS Inspection

Comments: None.

Adult Fish Passage Facility

Lower Granite and Anchor QEA staff inspected the adult fishway on June 22, 23, 24, 26, and 27.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head $\leq$ 0.5’	
X			Fish Ladder Picketed Lead Differential	Head $\leq$ 0.3’	
X			Fish Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	
X			Fish Ladder Cooling Water Pumps in Service		
X			Fish Ladder Cooling Water Pumps Operating Satisfactorily		

Comments: None.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0’	
X			South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0’	
	X		South Shore Channel/Tailwater Differential	1.0’ – 2.0’	0.9, 0.9
X		X	North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 8.0’ or on sill	
X		X	North Powerhouse Entrance (NPE-2) Weir Depth	$\geq$ 8.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
X			North Shore Entrance (NSE-1) Weir Depth	$\geq$ 7.0’ or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 7.0’ or on sill	OOS
X			North Shore Channel/Tailwater Differential	1.0’–2.0’	
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.4, 1.2, 1.2, 1.2

Comments: The inability to operate AWS pump 1 in fast mode with current tailwater elevations may be influencing collection channel velocities. The problem is being investigated.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
X			AWS Fish Pump 1
X			AWS Fish Pump 2
	X		AWS Fish Pump 3

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	31.2 yd^2
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: None.

ESBSs/VBSs:

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
X			ESBSs inspected this week?
X			ESBSs inspection results acceptable?
X			VBSs differentials checked this week?
X			VBSs differentials acceptable?

Comments: None.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	18
	X		Dewaterer and cleaning systems operating satisfactory?	

Comments: Primary dewaterer floor screen brushes, side screen brushes, and the pneumatic screen cleaners are being operated in manual mode by powerhouse operators due to mechanical and programing issues with the new system. Overflow weirs in groups A, B, and C remain in auto; weir group D continues to be operated in manual to achieve optimal flow from the PDW to the transport flume. Problems are being investigated and troubleshooting the system for needed repairs is ongoing.

Collection Facility: Operational modifications continue as needed. The facility is in collection for transport mode.

Transport Summary: Every other day barging continues.

Spill/Spillway Weir: Summer spill began June 21 at 0000 hours. June 25 spill bay 6 was opened to 3 stops from 1700 to 1715 to remove a log wedged under the spill gate.

River Conditions

River conditions at Lower Granite Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
72.2	57.4	19.3	18.8	64.8	60.6	5.0	3.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A.

Invasive Species: No mussels were present during the June 3 inspection. Three Siberian prawns were euthanized during this reporting period.

Siberian Prawn:

Date	6/22/2018	6/23/2018	6/24/2018	6/25/2018	6/26/2018	6/27/2018	6/28/2018
Euthanized	0	0	0	0	0	3	0
Dead	0	0	0	0	0	0	0

Avian Activity: Biologist daily piscivorous bird counts at Lower Granite Dam.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
6/22/2018	13:15	0	0	0	10
6/23/2018	12:30	1	0	0	7
6/24/2018	13:30	0	2	0	0
6/25/2018	1550	1	0	0	4
6/26/2018	1408	0	1	0	0
6/27/2018	1530	1	0	0	0
6/28/2018	1540	0	0	0	1

Gas Bubble Trauma **(**GBT**)** Monitoring: N/A.

Adult Fish Trap Operations: Adult trap is operating Monday through Friday with a 28% sample rate.

Fish Rescue/Salvage: N/A

Research:

Idaho Fish and Game (IDFG) Genetic Stock Identification
Fish collected as part of the Lower Granite condition sample are used to enumerate and characterize age composition and genetic stock profiles of naturally producing yearling chinook and juvenile steelhead. IDFG will sample Monday through Friday through mid-June with a goal of collecting 2,000-5,000 yearling chinook and juvenile steelhead genetic samples.

Nez Perce Tribe (NPT)/U. of Idaho (UI)/Columbia River Intertribal Fisheries Commission (CRITFC) – Kelt Study
Collection of adult steelhead kelt from Lower Granite juvenile separator for NPT rehabilitation program began April 1 with the first collection being worked up April 2. This research investigates steelhead kelt physiology and endocrinology to evaluate the feasibility and success of rehabilitating strategies. Selected kelts collected at Granite are transported by NPT to Dworshak National Fish Hatchery for reconditioning and later release as part of this study.

National Marine Fisheries Service (NMFS)-Monitoring the Migrations of Wild Snake River Spring/Summer Chinook: This study is monitoring the migration behavior and survival of wild spring/summer Chinook salmon. The goals are to characterize migration timing and estimate parr-to-smolt survival to LGR of wild Chinook populations as they migrate from their natal rearing areas and determine migration patterns and what environmental factors influence those patterns. Fish were PIT-tagged during the summer of 2017 in natal streams and are diverted to the Sort-By-Code tanks at LGR.

PNNL System Survival Study
This study will evaluate the effects of increased spill on the passage and in-river survival of yearling Chinook salmon and juvenile steelhead migrating through the Snake and Columbia River hydro-system. The study will also evaluate the effects of increased spill on the passage of adult Chinook salmon and steelhead at Little Goose Dam during 2018 spring gas cap spill. Collection of yearling chinook and juvenile steelhead at Lower Granite began April 15.