

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#21-2018**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: July 20 to 26, 2018

Turbine Operation

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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
2	7/16	0730	7/26	1308	Lubricant replacement/strainer repair.
9	7/23	0627	7/26	1415	Annual maintenance.

Comments: The saw tooth unit priority for warm water temperature abatement continued.

Adult Fish Passage Facilities

McNary fisheries biologists performed adult fishways measured inspections on July 20, 22 and 24. Temperature probe data was downloaded on July 24. 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 light near the Oregon exit and minimal near the Washington exit. Picketed leads were cleaned by the general maintenance staff as needed, including the weekend.

On July 22 and 24, at the Washington ladder exit, the regulating weir tripped one alarm each day and was reset.

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 were 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			Oregon Ladder Fish Pump 2, Blade angle: 22.
X			Oregon Ladder Fish Pump 3, Blade angle: 22.
X			OR North Powerhouse Pool supply from juvenile fishway

Comments: There were no problems to report.

Juvenile Fish Passage Facility

The sampling season continued.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal 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. Debris accumulation along the spillway was very light. New incoming debris loads were minimal. Most of the forebay debris was along the Oregon shoreline and would be described as moderate.

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: On July 21, after tripping multiple alarms, the brush cycle for the screen in 14C slot was switched to timer mode, where it remains. ESBS camera inspections in units 2 and 11 revealed no issues. The units were out of service or in standby during the inspections.

VBS differential monitoring occurred daily. No high differentials were measured. On July 24, the screen in 5A slot was cleaned. Also, the VBSs in 5C and 7C slots were inspected, which includes cleaning. During the cleaning and inspections, no smolt or juvenile lamprey mortalities were observed. On July 25, tabs were welded onto the VBS guide slots in 2A slot. This should insure the VBS remains in its guides during cleaning.

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 and inspection as needed. Orifice operator air leaks were repaired as required.

On July 22, at approximately 1930 hours, the rectangular floor screen brush in the juvenile collection channel failed. The rectangular brush cable bracket nearest the brush had come off. One of its bolts got entangled in the cable carrier, which resulted in the carrier folding back on itself. This caused a “shortening” in the electrical cable. When the brush operated going downstream, the cable was now too short to complete the brush cycle. The brush pulled the cable with enough force to damage the cable where it entered the junction box on the wall. The brush failed about 6 feet from its downstream limit. The transition screen brush had to be turned off as the two brushes overlap in this area. With both brush out of service, the air screen air brush system functioned satisfactorily to keep the screens clean. The technicians were instructed to stay in the channel and monitor the system until the brush could be repaired. In order to maintain a staff member in the channel, the system remained in primary bypass on July 23, from 0700 to 1700 hours instead of switching to secondary bypass for sample collection. That day, from 0700 to 1530, the electrical staff examined the issue, removed the walkway grating, replaced the electrical cable and motor leads for the brush, repaired the cable carrier, repaired the cable bracket, tested the brush and replaced the walkway grating. At 1601 hours, the fisheries staff watched all three brushes run in automatic mode. The technician returned to the facility and prepared for secondary bypass, which they began at 1700 hours.

The electrical staff has already developed a plan for next winter maintenance season to improve the brush electrical cable system, which should reduce the potential of this issue reoccurring.

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, no juvenile lamprey and 55,901 smolts were bypassed.

On July 23, as described above, ten hours of secondary bypassed and sampling were missed due to the rectangular screen brush issue. The sample rate was raised to 1.0 percent.

TSW Operations: The TSWs remain out of service. The spill pattern remained as outlined in the Fish Passage Plan, 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
196.5	148.0	98.6	74.3	69.9	68.9	6.0	6.0

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.

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 in December.

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
July 20	Spill	0	0	4	20
	Powerhouse	0	0	0	0
	Outfall	0	0	0	2
July 21	Spill	0	0	0	30
	Powerhouse	0	0	0	0
	Outfall	0	0	0	15
July 22	Spill	0	1	0	40
	Powerhouse	0	0	0	0
	Outfall	0	1	0	15
July 23	Spill	2	0	2	34
	Powerhouse	0	0	0	0
	Outfall	0	0	1	1
July 24	Spill	1	0	10	16
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
July 25	Spill	1	0	1	24
	Powerhouse	0	0	1	0
	Outfall	0	0	0	10
July 26	Spill	0	0	0	9
	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. Fewer pelicans were roosting below the separator building at night. Gulls numbers decreased. They were observed in the spillway and at the outfall roosting on the bypass pipe where the bird wire had wash out. Tern numbers also decreased. The gulls and terns are difficult to distinguish at long distances even with binoculars. The terns appeared to be feeding in the spillway. Cormorants remained difficult to observe. However, we did observe them feeding in

the spillway and at the bypass outfall. On five days, boat hazing occurred. The bird counts above generally occurred during the hazing and do not reflect what was observed at other times. Osprey were noted roosting in the tailwater area.

An occasional gull, osprey, blue heron or tern was observed in the forebay. The gulls were mainly juveniles with as many as five being observed scavenging. Pelicans were feeding in the forebay with no more than two birds present. Grebe numbered from 15 to 51 birds. Hazing appeared to be effective on the grebes. No grebes were noted in the gateway slots or juvenile fish channel. Pelicans, cormorants, terns and gulls were roosting on the rocks by the Washington shore boat dock in low numbers.

The outfall hazing water sprinklers remain out of service due to system damage, which will require a contract to repair/replace. On July 24, the second large bird distress call system was deployed on the outfall walkway. The effectiveness of this call has yet to be determined. The bird distress calls deployed along the navigation lock wing wall have been functioning well. These calls have been adjusted weekly.

USDA Wildlife Services tested a drone for hazing on July 24 through 26. The drone use appears to have some potential. For one week, Wildlife Services resumed boat hazing, which occurred on July 20 and 23 through 26. The last day of hazing from the shore was July 28.

PSMFC staff continued recording observations of pelicans feeding at the bypass outfall. They are using a spotting scope for these observations.

Invasive Species: On July 22, the mussel station examinations revealed no problems. No Siberian prawn were removed for the sample this week.

Fish Rescue/Salvage: None occurred.

Research: GBT monitoring occurred once this week due to high water temperatures. No smolt exhibited signs of GBT. The University of Idaho adult lamprey passage telemetry study continued.

Project: Ice Harbor

Biologist: Ken Fone

Dates: July 20 – July 26, 2018

Turbine Operation

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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
2	4/25/16	0606	---	---	Runner replacement
5	7/23/18	1013	7/26/18	1530	Doble testing
6	7/23/18	1013	---	---	Annual maintenance, doble testing

Comments: None.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on July 23, 24, and 26.

Fish Ladders:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head \leq 0.3'	
X		North Ladder Picketed Lead Differential	Head \leq 0.3'	
X		North Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
X		South Ladder Exit Differential	Head \leq 0.3'	
X		South Ladder Picketed Lead Differential	Head \leq 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	\geq 8.0' or on sill	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
X			South Shore Channel Velocity	1.5 – 4.0 fps	
		X	North Powerhouse Entrance (NFE-2) Weir Depth	\geq 8.0' or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0' – 2.0'	
		X	North Shore Entrance (NEW-1) Weir Depth	\geq 8.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments: None.

Auxiliary Water Supply (AWS) System:

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

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	0 square yards
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 7%
	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 are in cycle-run mode, as the average fork length of subyearling chinook is greater than 120 mm in the Lower Monumental 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.

Fish Sampling: Sampling is done for the year.

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
36.8	33.2	26.8	23.3	70	68	7.9	7.9

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Monthly inspections for lamprey ended in June and will start up again in December.

Avian Activity: Pelican and gull numbers increased from last week (see the table below). Most of the pelicans were observed foraging downstream of the spillway and roosting on Eagle Island. Most of the gulls were observed roosting on the buoys in the forebay and on Eagle Island.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
July 20	---	---	---	---	---
July 21	---	---	---	---	---
July 22	---	---	---	---	---
July 23	33	2	0	0	74
July 24	24	4	1	0	77
July 25	26	3	0	0	67
July 26	6	1	0	0	53

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. Sampling is done for the year.

Fish Rescue/Salvage: Unwatering activities that could involve fish rescue did not occur.

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

Project: Lower Monumental

Biologists: Chuck Barnes and Raymond Addis

Dates: July 20 - 26, 2018

Turbine Operation

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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
Unit 1	12/10/2014		09/25/2018	ERTS	Rehabilitation Overhaul
Unit 3	06/25/2018	0700	08/31/2018	ERTS	6 Year Overhaul
Unit 2	07/26/2018	0533	07/26/2018	1722	BPA substation work
Unit 4	07/26/2018	0533	07/26/2018	1726	BPA substation work
Unit 5	07/26/2018	0533	08/05/2018	ERTS	BPA substation work & Doble Testing
Unit 6	07/26/2018	0533	08/05/2018	ERTS	BPA substation work & Doble Testing

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 July 20, 21, 22, 23 and 25.

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: None.

Fishway Entrances and Collection Channel:

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

Comments:

North Shore Entrance (NSE-1) was at sill during the July 20, 23 and 25 inspections with readings of 8.4, 8.3 and 8.1 feet respectively.

North Shore Entrance (NSE-2) was at sill during the July 20, 23 and 25 inspections with readings of 8.4, 8.3 and 8.1 feet respectively.

South Powerhouse Entrance (SPE-1) was at sill during all inspections with readings of 5.4, 6.0, 5.1, 5.4 and 5.0 feet respectively.

South Powerhouse Entrance (SPE-2) was at during all inspections with readings of 5.4, 6.0, 5.1, 5.4 and 5.0 feet respectively.

South Shore Entrance (SSE-1) was at sill during all inspections with readings of 5.2, 6.8, 5.4, 6.1 and 5.8 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 – 1%
	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: STS's operating on cycle mode due to average sub-yearling Chinook and sockeye lengths being greater than 120 mm.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	19 or 20
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 (GBT) Monitoring: GBT monitoring sampling began on April 10.

Transport Summary: Every-day barging changed to alternate day barging on May 22. A total of 14,081 fish were collected and 15,061 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. The RSW was shut down from 0400-1400 on July 19-20, per the request of Technical Management Team members, due to a possible delay of adult Snake River Sockeye passage. Spill pattern was changed from bulk to uniform during this period.

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
35.3	30.5	17.1	14.2	69.9	69.4	7.5	5.5

*Scroll case temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on July 2. No live fish were recovered. Mortalities included 1 juvenile lamprey.

Avian Activity: Tailrace observations for bird hazing effectiveness ended with the June 30 observation. Gulls and pelicans were the piscivorous bird species observed during fish ladder inspections this week. **bird**
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 July 6.

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. Daily and total Siberian prawn counts at Lower Monumental Dam for this reporting period are reported below.

Date	Sample (euthanized)	Collection*
7/20/2018	1	20
7/21/2018	0	0
7/22/2018	3	15
7/23/2018	12	60
7/24/2018	4	20
7/25/2018	5	25
7/26/2018	2	8
Totals	27	148

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

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: July 20 - July 26, 2018

Turbine Operation

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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
5	04/14/17	14:11	11/16/18	17:00	Spider and upper guide bearing repair.
6	07/09/18	07:00	08/03/18	17:00	Unit Annual

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on July 22, July 23, and July 26.

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 was returned to service on July 19 at 09:00.

Fishway Entrances and Collection Channel: None.

Yes	No	Sill	Location	Criteria	Measurements
	X		South Shore Entrance (SSE-1) Weir Depth	\geq 8.0'	7.9 on 7-23
X			South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	
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	
X			North Shore Entrance (NSE-2) Weir Depth	\geq 6.0' or on sill	
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. 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 was taken on July 26 and were in criteria. There is currently no floating woody debris 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 was taken on July 26 and were in criteria. VBS underwater camera inspections were conducted on July 16 and 17 and no issues were found.

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 8,978 fish were collected, and 7,364 were transported via barge. The descaling and mortality rates were 1.5% and 1.4% respectively. This weekly report period, 21 adult lamprey were removed from the separator, raceways, and sample; subsequently 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. Adjustable spillway weir was closed from the hours of 04:00 until 16:00 on July 26 per the request of Technical Management Team members, due to a possible delay of adult Snake River Sockeye passage.

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
35.3	29.0	11.1	9.5	69.4	69.2	6.0	5.8

*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.

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	12	0	0	0	0
Forebay count	16	1	0	0	0
Tailrace count	19	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*
7-20	27	270
7-21	6	60
7-22	28	150
7-23	53	265
7-24	37	148
7-25	27	108
7-26	26	130
Total	204	1131

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

Gas Bubble Trauma (GBT): GBT monitoring was performed on July 23. Personnel examined 100 fish and 0 were found to have 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: July 20- July 26, 2018

Turbine Operation

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

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
6	July 9	0700			Annual Maintenance and Digital Governor Upgrade

Comments: None.

Adult Fish Passage Facility

Lower Granite and Anchor QEA staff inspected the adult fishway on July 20, 21, 25, and 26.

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'	1.4
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'	
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	6.8
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'	0.6, 0.8
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.3

Comments: The inability to operate AWS pump 1 in fast mode with current tailwater elevations may be influencing collection channel velocities. NSE-1 weir depth is being sacrificed for channel/tailwater differential. NPE 2 gate set point for the sill position is 628.2 feet to prevent cable spooling though the actual gate elevation is on sill at 628.0 feet. Biologists were unable to take physical readings to verify north shore values on two separate inspections due

to the elevator being out of service. North shore out of criteria reading are likely related to fish ladder control system calibration issues.

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)	0 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 programming 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. Collection for transport continues.

Transport Summary: Every other day barging continues.

Spill/Spillway Weir: Summer spill began June 21 at 0000 hours.

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
34.6	30.5	17.8	15.6	67.5	66.3	5.0+	5.0+

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A.

Invasive Species: No mussels were present during the July 1 inspection. During the reporting period 638 Siberian prawns were euthanized and 101 Siberian prawn mortalities were collected in the condition sample.

Siberian Prawn:

Date	7/20/2018	7/21/2018	7/22/2018	7/23/2018	7/24/2018	7/25/2018	7/26/2018
Euthanized	15	22	71	83	76	147	224
Dead	1	2	9	3	6	13	67

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
7/20/2018	1451	2	15	0	0
7/21/2018	1200	3	10	0	0
7/22/2018	1404	7	13	0	0
7/23/2018	1336	3	15	0	0
7/24/2018	1710	0	12	0	1
7/25/2018	1129	1	12	0	0
7/26/2018	1300	0	7	11	0

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

Adult Fish Trap Operations: Adult trap is operating Monday through Friday with a 28% sample rate. NOAA is not repositioning the turnpool gate to the ladder passage position on the weekends. The adult trap was removed from service from 0806-0928 hours July 23 due to a failed air compressor receiver moisture trap. The turnpool gate was changed to the ladder passage position from 0830-0902 July 23 to eliminate the head differential caused by debris and shad. The trap was flushed for debris and shad from 0902-0928 hours July 23.

Fish Rescue/Salvage: N/A

Research: N/A