

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#20-2018**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: July 13 to 19, 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	7/23	NA	Lubricant replacement/strainer repair.
3	7/16	0554	7/19	1724	Annual maintenance.
4	7/17	1033	7/17	1058	ESBS camera inspections.

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 13, 15 and 18. Temperature probe data was downloaded on July 13 and 18. The issue with the shuttle appears to have been resolved. The manufacture will attempt to retrieve the data lost last week. 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 to moderate near the Oregon exit and minimal near the Washington exit. Picketed leads were cleaned by the general maintenance staff as needed, including Saturday.

On July 13, at the Washington ladder exit, an alarm came in, which 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'	7.4' on July 18.

Comments: On July 18, the Oregon ladder entrance WFE3 was out of criteria. On July 19, the mechanics replaced the drive chain and returned the weir to automatic mode. On July 17, the electricians noted the Oregon ladder south powerhouse entrance panel view was overheating. They installed a protective shroud around the control box.

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 are 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 to very light 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 very light. Debris accumulation along the spillway was very light to 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: There are no problems to report. ESBS camera inspections in units 3 and 4 revealed no issues. The camper shell with the primary camera system was reinstalled on a new truck this week and was used for the inspections.

VBS differential monitoring occurred daily. No high differentials were measured. On July 14 and 16, a total of eight VBSs were cleaned. Also, on July 16, the VBS in 1C slot was inspected, which includes cleaning. On July 18 and 19, the VBSs in 9B and 10A slots were replaced, respectively, with rehabilitated VBSs. Replacement also includes cleaning. The exchange was done while the units were in standby. During all these operations, a total of 39 smolt mortalities were washed off the VBSs. Also, the VBS removed from 9B slot had five subyearling Chinook mortalities under the mesh in the upper VBS section just at the water line. We have no theory on how the fish got in this location.

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, inspection and replacement as needed. Orifice attraction lights and operator air leaks were replaced or repaired as required.

On July 17, scheduled maintenance was performed on the overhead hoists.

On July 18, the collection channel contractor arrived on project to address the issues with the transition screen brush. After accepting a clearance on the brush, the contractor prepared to work the next day. On July 19, the contractor repaired the area around the downstream limit, reset the laser indicator, installed a downstream bumper stop and examined the brush control program. While testing the brush, we found the B zone limit nonfunctional. From 1055 to 1138 hours the power was removed from the channel control system so the B zone limit could be replaced. During this outage the biologist monitored the channel. At 1231 hours, the transition brush functioned properly. At 1300 hours, the brush was officially returned to service. The contractor next installed “splash” guards over two of the four zone limit switches. This may help in the future to determine if moisture is an issue with these limit switches. At 1555 hours, all three screen cleaning brushes were observed operating in automatic mode.

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 77,616 smolts were bypassed.

On July 19, from 1131 to 1231 hours, the facility was in primary bypass due to low water flows caused by the collection channel power outage described above. With a sample rate of 0.5 percent, two samples were missed.

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
195.6	180.0	98.0	90.1	69.8	68.1	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.

On July 18, it was noted that spillbay 20 was not opening and closing properly. At 0820 hours, the spillgate was disconnected from crane 6. Due to the spill pattern at the time, the bay was already closed. It was determined the crane's gear box required repairs, which were immediately begun. After the repairs were completed and the limits set on the crane, the crane and spillgate returned to service on July 19, at 1610 hours (see FPOM Coordination 18 MCN 09 MFR). During approximately 33 hours the bay was closed, there were 19 hours when the bay should have been opened 2 stops per FPP, Table MCN-9.

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.

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. Gulls numbers increased. They were observed in the spillway and at the outfall roosting on the bypass pipe where the bird wire had been removed by the high flows in the spring. Tern numbers appeared to fluctuate. 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 observe them feeding in the spillway and at the bypass outfall. All four species appeared to be staging in the tailwater area in larger numbers late in the week.

An occasional gull, gull flock, osprey, blue heron or tern was observed in the forebay. The gulls were a mixture of adults and juveniles. The flocks were observed roosting late in the week outside the counting zone. Pelicans were feeding in the forebay with one to 11 birds present. Grebe numbered from 3 to 35, with most birds observed late in the week. 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.

The outfall hazing water sprinklers remain out of service due to system damage, which will require a contract to repair/replace. The second bird distress call system was received from the manufacture and will be installed on the outfall walkway next week. The bird distress calls deployed along the navigation lock wing wall have been functioning well. The few gulls or terns that were roosting on the walkway are no longer there. The calls have been adjusted weekly. The USDA Wildlife Services second shift concluded on July 14. However, due to the large numbers of birds noted this week, we asked Wildlife Services to resume boat hazing, which will occur on July 20.

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

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
July 13	Spill	0	1	3	11
	Powerhouse	0	0	0	1
	Outfall	0	5	0	5
July 14	Spill	2	0	7	22
	Powerhouse	0	0	0	0
	Outfall	4	7	0	13
July 15	Spill	0	0	2	10
	Powerhouse	0	0	0	1
	Outfall	0	0	0	7
July 16	Spill	0	0	25	30
	Powerhouse	0	0	0	0
	Outfall	0	0	0	15
July 17	Spill	13	17	16	70
	Powerhouse	0	0	0	1
	Outfall	32	17	0	31
July 18	Spill	0	0	20	61
	Powerhouse	0	0	0	1
	Outfall	0	3	0	31
July 19	Spill	0	2	11	33
	Powerhouse	0	0	0	0
	Outfall	0	4	0	14

Invasive Species: The next mussel station examinations will occur on July 22. No Siberian prawn were removed for the sample this week.

Fish Rescue/Salvage: None occurred.

Research: GBT monitoring occurred twice. No smolt exhibited signs of GBT. The University of Idaho adult lamprey passage telemetry study continued.

Project: Ice Harbor

Biologist: Ken Fone/Charlie Dennis

Dates: July 13 – July 19, 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

Comments: Units 6, 5, 4, 3, and 1 were taken out of service one at a time for STS inspections on July 17 and 18.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on July 17, 18, and 19.

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	6.7'
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0' – 2.0'	0.6'
	X		North Shore Entrance (NEW-1) Weir Depth	\geq 8.0' or on sill	5.7'
	X		North Shore Channel/Tailwater Differential	1.0' – 2.0'	2.8'

Comments: The NFE-2 channel/tailwater differential was below criteria on the July 17 inspection. This reading may have resulted from a visual reading error of the tailwater elevation, which fluctuates with the turbulence from spill.

The NEW-1 and NFE-2 weir depths were below criteria on the July 17 and July 18 inspections, respectively. The NEW-1 channel/tailwater differential was above criteria on the July 17 inspection. The powerhouse operator was informed and he lowered the NEW-1 and NFE-2 weirs to sill to bring those inspection points into criteria. Those weirs are 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)
5-6 pumps	2-3 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)	square yards
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 2%
	X		Any oil seen in gatewells?	

Comments: None.

STs/VBSs:

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

Comments: The STs 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. Unit 6, 5, 4, 3, and 1 STs, and unit 1 VBSs, were inspected on July 17 and 18. There were no significant problems found.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	19-20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: The light for orifice 4BN was found to be burned out on July 17. Orifice 4BS was opened in place of 4BN until the light was replaced on July 18.

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
50.00	31.30	40.20	22.50	68	67	7.9	7.5

*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: Gull and cormorant numbers were generally low this week (see the table below). Most of the pelicans were observed foraging downstream of the spillway and roosting on Eagle Island.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
July 13	---	---	---	---	---
July 14	---	---	---	---	---
July 15	---	---	---	---	---
July 16	11	3	0	0	20
July 17	3	9	0	0	36
July 18	25	5	0	0	31
July 19	0	0	0	0	24

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. Sampling is completed for the year thus no Siberian prawns were collected this week.

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 13 - 19, 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

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 13, 14, 15, 16 and 18.

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			North Shore Entrance (NSE-1) Weir Depth	\geq 8.0' or on sill	
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:

South Powerhouse Entrance (SPE-1) was at sill during all inspections with readings of 6.2, 6.1, 6.0, 5.6 and 5.5 feet respectively.

South Powerhouse Entrance (SPE-2) was at during all inspections with readings of 6.2, 6.1, 6.0, 5.6 and 5.5 feet respectively.

South Shore Entrance (SSE-1) was at sill during all inspections with readings of 5.8, 6.3, 6.5, 5.8 and 6.1 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. On 18 July, during routine operator inspections, a significant vibration was found on Fish Pump 2. It was forced OOS for 105 minutes from 0730-0915 to tighten a loose thrust collar. For more details, see FPOM MFR, *LMN 08 Emergency Fish Pump Outage*.

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: Incline screen mechanical cleaning brush system started faulting **halfway into a run with the brush up on July 4. Separator technicians have been manually operating the brush to correct the fault when it occurs. Powerhouse electricians repaired the mechanical cleaning brush on July 17.**

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

Gas Bubble Trauma (GBT): 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
41.9	34.5	16.9	15.5	69.2	68.0	7.1	6.3

*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: Gulls and pelicans were the piscivorous bird species observed in the tailrace during fish ladder inspections this week. Bird hazing efforts by USDA personnel ended at 2000 on June 2. Tailrace observations for bird hazing effectiveness ended with the June 30 observation.

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*
7/13/2018	0	0
7/14/2018	1	10
7/15/2018	2	20
7/16/2018	0	0
7/17/2018	2	20
7/18/2018	0	0
7/19/2018	0	0
Totals	5	50

*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 13 - July 19, 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.
2	07/12/18	17:00	07/13/18	07:15	Exciter failure.
6	07/09/18	07:00	07/27/18	17:00	Unit Annual

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on July 15, July 16, and July 19.

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'	
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 units 1 and 2 were taken on July 20 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 units 1 and 2 were taken on July 20 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 19,637 fish were collected, and 21,548 were transported via barge which includes fish collected on July 12. The descaling and mortality rates were 1.2% and 0.8% respectively. This weekly report period, 32 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.

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
40.8	35.9	12.2	10.7	70.2	68.4	6.0	5.7

*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	18	0	0	0	0
Forebay count	2	1	0	0	0
Tailrace count	18	0	0	1	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*
7-13	5	50
7-14	12	120
7-15	12	120
7-16	3	30
7-17	16	160
7-18	10	100
7-19	6	60
Total	64	640

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

Gas Bubble Trauma (GBT): GBT monitoring was performed on July 16. 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 13- July 19, 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	
3	July 14	0834	July 16	0957	Headgate cylinder oil leak in slot 3C.
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 13, 14, 15, and 18.

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'	
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	6.9, 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'	0.8
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.4, 1.4, 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. 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.

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: July 14 oil was observed in headgate slot 3C. As a precautionary measure orifices in gatewell slot 3C were closed from 0834 hours July to 0834 hours July 16. Powerhouse mechanical recovered the oil and determined the problem was a headgate cylinder oil leak. It was estimated that 1 pint of oil was released into the head gate slot.

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. Lower Granite collection facility was switched to primary bypass operation at 0700 hours and then emergency bypass at 1130 hours July 17 to facilitate the repair of the expansion joint between the primary dewaterer and the transport flume. Primary bypass operations resumed at 1435 hours and was changed to JFF collection at 1545 hours July 19.

Collection Facility: Operational modifications continue as needed. The facility was dewatered from 0845 hours July 17 to 1545 hours July 19 to facilitate repair of the expansion joint. Collection for transport resumed when the facility water up was complete.

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
42.0	36.6	17.8	17.7	68.0	66.7	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 143 Siberian prawns were euthanized and 36 Siberian prawn mortalities were collected in the condition sample. No prawns were collected July 18 and 19 due to the facility being dewatered for flume repairs.

Siberian Prawn:

Date	7/13/2018	7/14/2018	7/15/2018	7/16/2018	7/17/2018	7/18/2018	7/19/2018
Euthanized	31	24	25	27	36	---	---
Dead	7	2	9	1	17	---	---

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
7/13/2018	1000	0	0	0	0
7/14/2018	0820	0	3	0	0
7/15/2018	1504	0	2	0	0
7/16/2018	1545	9	12	0	0
7/17/2018	1253	0	10	0	0
7/18/2018	0632	0	10	0	0
7/19/2018	0730	4	13	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. NOAA is not repositioning the turnpool gate to the ladder passage position on the weekends.

Fish Rescue/Salvage: N/A

Research: N/A