U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#26-2018

Project: McNary
Biologist: Bobby Johnson and Denise Griffith
Dates: August 24 to 30, 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
9	8/27	0702	8/27	1255	Station service upgrades tied in.
10	8/27	1300	8/27	1545	Station service upgrades tied in.
3	8/28	1011	8/28	1030	ESBS camera inspections.
5	8/28	1040	8/28	1105	ESBS camera inspections.
9	8/28	1107	8/28	1133	ESBS camera inspections.

Comments: The saw tooth unit priority for warm water temperature abatement will conclude at 0001 hours on September 1 when the spillway is closed.

Adult Fish Passage Facilities

McNary fisheries biologists performed adult fishways measured inspections on August 24, 27 and 29. Temperature probe data was downloaded on August 29. 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 to very light near the Washington exit. Picketed leads were cleaned by the general maintenance staff as needed, including Saturday.

On August 24, at 0055 hours, Oregon exit weirs 335 and 336 appeared out of sequence. The operator resolved the issue.

On August 24, at the Washington ladder exit, one exit alarm was reset. This week, a new exit pool dewatering pump was installed.

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 2.1 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
	X		WFE2 Weir Depth	≥ 8.0'	7.4' on August 27.
	X		WFE3 Weir Depth	≥ 8.0'	7.5' on August 27.

Comments: While the Wasco County PUD was in bypass mode, as described below, for some unknown reason, the entrance pool differential could not be maintained as the entrance weirs move to excessively. The chief operator ran WFE2 and WFE3 in manual mode from the control room for most of the PUD unit outage. The out of criteria points on August 27 were due to the weirs having not yet been manually adjusted after a drop in tailwater elevation. On August 29, after the PUD unit returned to service, the biologist found WFE2 still in manual mode but locally at the weir. The chief operator sent the roving operator to the entrance to examine the weir and returned it to automatic mode.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X		X	WA shore Wasco County PUD Turbine Unit.
X	X		WA shore Wasco PUD Bypass.
X			Oregon Ladder Fish Pump 1, Blade angle: 22.
X			Oregon Ladder Fish Pump 2, Blade angle: 20 to 22.
X			Oregon Ladder Fish Pump 3, Blade angle: 22.
X			OR North Powerhouse Pool supply from juvenile fishway.

Comments: From August 22, at 1830 hours to August 29 at 1140 hours, the Wasco County PUD unit was out of service for brush and control repairs along with a unit inspection. The bypass system provided auxiliary water to the Washington ladder while the unit was out of service.

Juvenile Fish Passage Facility

The sampling season continued. When the spill program concludes on September 1, at 0001 hours, debris loads will be monitored in the juvenile collection channel.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to 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 light. Debris accumulation along the spillway was very light to light. New incoming debris loads were minimal. Winds move woody material and aquatic vegetation for the Oregon shore to the powerhouse and back.

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 August 23, all three brush cycles for the ESBSs in unit 3 were found in timer mode. The operator returned the cycle functions to automatic mode. However, the brush cycles would return to timer mode after the next time the brushes cycled. On August 26, the biologist told the operator to leave the brush cycles in timer mode until the issue could be examined. On August 27, the electrician found a failed the proximity switch on the screen in 3A slot. This switch had blown a fuse in the control panel, which effected the communication to all three ESBSs. Thus, after the first cycle in automatic mode, all three cycles were converted to timer mode by the program. The electrician removed the cable from the ESBS in 3A slot, left that brush cycle in timer mode, replaced the fuse and returned the brush cycles for the screens in 3B and 3C slots to timer mode. On August 29, the cycle mode for the ESBS in 3C slot was switched back to timer mode after multiple alarms.

On August 28, ESBS camera inspections in units 3, 5 and 9 revealed no issues.

VBS differential monitoring occurred daily. No high differentials were measured. On August 27, the screens in 11A and 11B slots were cleaned. No mortalities were 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?	

Comments: There were no problems to report. Orifices were adjusted for the VBS cleaning as required.

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, 24 juvenile lamprey and 356 smolts were bypassed. Juvenile shad continue to be the predominate species sampled.

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
175.4	127.8	87.9	64.1	69.0	67.3	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 with fifty percent of river flow being spilled will conclude on September 1 at 0001 hours.

Daily temperature monitoring by Anchor, QEA throughout the juvenile system continued. Temperature data along with probe issues are described in a separate weekly report. Temperature monitoring will conclude on August 31.

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. Air quality improved this week.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
Aug 24	Spill	293	11	16	9
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
Aug 25	Spill	180	1	3	10
	Powerhouse	0	0	0	0
	Outfall	1	0	0	2
Aug 26	Spill	350	10	0	5
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
Aug 27	Spill	108	0	6	7
	Powerhouse	0	0	0	0
	Outfall	6	0	0	0
Aug 28	Spill	236	2	0	5
	Powerhouse	0	0	0	0
	Outfall	29	0	0	0
Aug 29	Spill	381	0	0	2
	Powerhouse	0	0	0	0
	Outfall	0	0	0	1
Aug 30	Spill	217	3	4	0
	Powerhouse	0	0	0	0
	Outfall	10	0	0	0

Pelicans continued to be observed either feeding or roosting in the spillway and at the bypass outfall. Pelican numbers appeared to be declining. This week, gull numbers had a large increase and appeared to match the juvenile shad outmigration. Gulls were observed in the spillway and outfall areas either feeding or roosting. However, most birds were roosting. Tern numbers remained relatively low. They appeared to be feeding in the spillway. The gulls and terns are difficult to distinguish at long distances even with binoculars. Cormorants remained difficult to observe. Their numbers appeared to have a slight increase. The ones noted were roosting on the navigation lock wing wall.

An occasional osprey, tern, gull, blue heron or pelican was observed in the forebay. No grebes observed anywhere on project. Gulls and cormorants were roosting on the rocks by the Washington shore boat dock in fairly low numbers. Though, large gull flocks were noted roosting around the project outside the counting zones.

The outfall hazing water sprinklers remain out of service due to system damage, which will require a contract to repair/replace. The bird distress calls have been adjusted weekly.

On August 30, USDA Wildlife Services attempted to launch their drone from a boat near the outfall pipe as the large number of gulls in the area would make for a good test of the effectiveness of the drone. The drone would not launch successfully. However, on August 31, they will try to launch the drone again.

PSMFC staff continued recording observations of pelicans feeding at the bypass outfall. They are using a spotting scope for these observations. However, due to the low number of pelicans, the observations will conclude on September 3.

Invasive Species: The next mussel station examinations will occur in late September. No Siberian prawn were removed for the sample this week.

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

Research: The University of Idaho adult lamprey passage telemetry study continued.

Project: Ice Harbor
Biologist: Ken Fone
Dates: August 24 – August 30, 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
6	7/23/18	1013	---	---	Annual maintenance, doble testing

Comments: None.

Adult Fish Passage Facility

Fish Ladders: Ice Harbor fish facility staff inspected the adult fishways on August 27, 29, and 30.

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	
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	≥ 8.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Shore Entrance (NEW-1) Weir Depth	≥ 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 yard
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 6%
	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. STSs were installed in slots 2A and 2B on August 28, in preparation for returning unit 2 back in service.

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 1BN was found to be burned out on August 23. Orifice 1BS was opened in place of orifice 1BN until the light was replaced on August 29.

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 is occurring. Spill gate #2 (RSW) was closed on August 18 at 0703 hours, due to average daily total project outflows below 30 kcfs, per paragraph 2.3.2.7.v of the Ice Harbor section of the Fish Passage Plan.

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
31.5	24.3	21.3	14.4	70	68	6.9	6.6

*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: There were low to moderate amounts of pelicans, gulls, and cormorants observed around the project. Most of the pelicans and gulls were observed foraging downstream of the spillway and roosting on Eagle Island.

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: August 24 - 30, 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 3	06/25/2018	0700	11/11/2018	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 August 24, 25, 27 and 29.
Fish Ladder:

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

Comments:

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	X	South Powerhouse Entrance (SPE-1) Weir Depth	≥ 8.0’ or on sill	
	X	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	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:
North Shore Entrance (NSE-1) Weir Depths to Tailwater Differentials were out of criteria during the August 24, 25 and 27 inspections with readings of 7.9, 7.9 and 7.7 feet respectively. These readings were due to Fish Pump 2 outage.
North Shore Entrance (NSE-2) Weir Depths to Tailwater Differentials were out of criteria during the August 24, 25 and 27 inspections with readings of 7.9, 7.9 and 7.7 feet respectively. These readings were due to Fish Pump 2 outage.
North Shore Channel/Tailwater Differential was out of criteria during the August 24 inspection with a reading of 0.9 feet. This reading was due to Fish Pump 2 outage.
South Powerhouse Entrance (SPE-1) Weir Depths to Tailwater Differentials were out of criteria during the August 24, 25 and 27 inspections with readings of 4.7, 5.0 and 4.6 feet respectively. SPE-1 was partially closed in an attempt to maintain channel to tailwater differentials due to Fish Pump 2 outage.
South Powerhouse Entrance (SPE-1) was at sill during the August 29 inspections with a reading of 5.9 feet.
South Powerhouse Entrance (SPE-2) was at closed during the August 24, 25 and 27 inspections to maintain channel to tailwater differentials due to Fish Pump 2 outage.
South Powerhouse Entrance (SPE-2) was at sill during the August 29 inspection with a reading of 5.9 feet.
South Shore Entrance (SSE-1) was at sill during all inspections with readings of 6.9, 7.1, 6.7 and 6.5 feet respectively.
South Shore Entrance (SSE-2) was closed during the August 24, 25 and 27 inspections to maintain channel to tailwater differentials due to Fish Pump 2 outage.

Auxiliary Water Supply System:

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

AWS Fish Pump 2 was removed from service at 0840 on August 22 to re-tighten the thrust bearing collar. After returning to service at 1340 the same day, the fish pump started overheating and tripped the safety shutdown system. Another attempt to restart Fish Pump 2 had the same result. A fouled heat exchanger was replaced, along with the thrust bearing, which was taken from Fish Pump 1. Fish pump 2 returned to service at 1415 on August 27.

See FPOM document, *18 LMN 10 MFR Emergency Fish Pump Outage*, for full details on the 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 %
	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
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Collection Facility: Collection into raceways for barge transport ended at 1500 on August 14. The sample gates were open for continuous (100%) sample at that time and the facility set up for truck transport.

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

Transport Summary: Barging ended with the last barge departing on August 14. Alternate day trucking began on August 14 with the first truck departing on August 16. Per 2018 Fish Passage Plan, the Lower Monumental trucking schedule is contingent upon fish numbers. Saturday, 18 August, was the third consecutive day with less than 50 smolts collected, therefore trucking was ceased after the second trip. A total of 94 fish were collected of which 112 were bypassed back into the river and no fish were transported during this reporting period.

Spillway Weir: RSW went into service when Spring Spill began at 0001 on April 3. RSW was closed at 1245 on August 8 due to TMT decision. 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
28.1	21.8	14.8	8.4	69.0	68.1	5.9	4.3

*Scroll case temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers are not inspected in August

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

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on August 5.

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*
8/24/2018	7	7
8/25/2018	0	0
8/26/2018	3	3
8/27/2018	2	2
8/28/2018	1	1
8/29/2018	0	0
8/30/2018	0	0
Totals	13	13

*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: August 24-30, 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.

Comments:

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on August 26, 27 and 30.

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: The adult ladder cooling pump returned to service on August 29 at 15:30.

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: There is currently no floating woody debris inside the trash shear boom in the forebay. Drawdown measurements were conducted August 26 on unit 1 and were in criteria.

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 differentials were measured August 26 on unit 1 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: None.

Collection Facility: Juvenile fish facility is currently operating. The facility was changed to every other day trucking with the first truck leaving on August 16.

Transport Summary: Every other day trucking commenced on August 16. The collection and transportation facility operated within criteria this report period. A total of 529 fish were collected, and 717 were transported via truck which includes fish collected on August 23. The descaling and mortality rates were 0.8% and 3.5% respectively. A total of 6 adult lamprey were removed from the separator and sample and released one mile above the Dam at Little Goose Landing.

Spillway Weir: Adjustable spillway weir was closed for the season on August 03 at 15:30.

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
30.0	23.6	10.1	8.6	68.6	67.8	5.3	4.0

*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	0	0	0	0	0
Forebay count	2	3	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. Sample rates were 100% during this reporting period.

Date	Sample (euthanized)	Collection*
8-24		119
8-25		157
8-26		98
8-27		121
8-28		136
8-29		200
8-30		238
Total		**1069**

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

Gas Bubble Trauma (GBT): GBT monitoring ended for the year.

Fish Rescue/Salvage: None.

Research: PNNL is currently removing hydrophones and associated equipment for the acoustic telemetry study.

Project: Lower Granite
Biologists: Elizabeth Holdren and Stephen Hampton
Dates: August 24- August 30, 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
6	July 9	0700	Aug 24	1518	Annual Maintenance and Digital Governor Upgrade
5	Aug 20	0715			Annual Maintenance and Digital Governor Upgrade
1, 3, 4	Aug 25	2208	Aug 26	1258	BPA 500kV line trip
2	Aug 27	0714			EAL Grease Replacement

Comments: BPA 500 kV line tripped at 2208 hours August 25. Project emergency generator was used until station service power was transferred to unit 4 at 0251 hours August 26. Generation was restored at 1240 hours August 26 and unit priority order resumed with unit 1 returned to service at 1258 hours. Units were rotated out of service August 26 and 27 for ESBS inspections.

Adult Fish Passage Facility

Lower Granite and Anchor QEA staff inspected the adult fishway on August 24, 25, 27, and 29.

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: Fish ladder temperature control pumps were out of service from 2208 hours August 25 to 0253 hours August 26 due to the 500 kV line trip. Pumps were out of service again from 1139 hours to 1245 hours August 26 to restore the 500 kV line and generation capability.

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	
			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	

Comments: 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: AWS pumps were out of service from 2208 hours August 25 to 0523 hours August 26 due to 500 kV line trip. AWS pumps were out of service again from 1139 to 1245 hours August 26 to restore the 500 kV line and generation capability.

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 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 operating at 50% to 100% sample rate.

Transport Summary: Every other day truck transport to below Bonneville Dam continues.

Spill/Spillway Weir: Summer spill began June 21 at 0000 hours. Spill is distributed according to Table LWG-8 with the RSW closed. Spill bays 5 and 6 were removed from service at 0714 hours August 27 with spill distributed as coordinated in MOC 18 LWG 06 for annual spillway cleaning.

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
31.5	25.1	20.2	12.2	67.2	66.2	5.0^{+}	4.9

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainers were inspected August 30. Mortalities included 3 juvenile lamprey, 2 crawfish, and 2 Siberian prawns.

Invasive Species: No mussels were present during the August 12 inspection. During the reporting period 3,031 Siberian prawns were euthanized and 465 Siberian prawn mortalities were collected in the condition sample.

Siberian Prawn:

Date	8/24/2018	8/25/2018	8/26/2018	8/27/2018	8/28/2018	8/29/2018	8/30/2018
Euthanized	243	1,114	262	608	184	493	127
Dead	3	244	12	122	11	68	5

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

Date	**Time**	**Gulls**	**Cormorants**	**Caspian Terns**	**Pelicans**
8/24/2018	1130	0	13	0	0
8/25/2018	1330	4	16	0	0
8/26/2018	1400	1	18	0	0
8/27/2018	0821	10	19	0	0
8/28/2018	1432	10	18	0	0
8/29/2018	0844	5	19	0	0
8/30/2018	1012	2	19	0	0

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

Adult Fish Trap Operations: Adult trap began seven days a week operation August 17 at 1400 hours with a 70% sample rate to support fall Chinook broodstock collection for WDFW (Lyons Ferry) and Nez Perce hatcheries.

Fish Rescue/Salvage: N/A

Research: N/A