

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#23-2018**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: August 3 to 9, 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	
6	7/30	0729	8/8	1310	Annual maintenance/strainer repair.
7	8/6	0651	8/9	1622	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 August 3, 5 and 7. Temperature probe data was downloaded on August 7. District limnologists began installation of permanent water temperature equipment at both ladders on August 6. 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'	0.6' on August 7
X		Washington Exit	Head over weir 1.0' to 1.3'	
X		Washington Count Station Differential	0.0' to 0.5'	

Comments: Debris loads were minimal to 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 August 7, cleaning the Oregon ladder picketed leads resolved the out of criterion issue. On August 9, the biologist asked the general maintenance staff to clean the picketed leads and the operators were asked to adjust the exit set points. The exit traveling screens debris trough was cleaned as required.

On August 4, at the Washington ladder exit, a log was removed from the picketed leads.

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 1.7 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 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. Local winds have been moving 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: The brush cycle for the ESBS in 14C slot remained in timer mode. On August 7, ESBS camera inspections in units 6 and 7 revealed no issues. The units were out of service during the inspections.

VBS differential monitoring occurred daily. No high differentials were measured. On August 4 and 6, a total of nine screens were cleaned. During the cleaning, two smolt 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: Orifices were adjusted for VBS cleaning as needed. Orifice attraction lights and operator air leaks were replaced or repaired 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, eight juvenile lamprey and 2,831 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
156.2	120.0	78.1	60.1	71.0	70.4	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 along with weather station 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
Aug 3	Spill	20	0	5	13
	Powerhouse	0	0	0	0
	Outfall	2	0	0	4
Aug 4	Spill	0	0	3	6
	Powerhouse	0	0	0	0
	Outfall	1	0	0	3
Aug 5	Spill	0	0	2	6
	Powerhouse	0	0	0	1
	Outfall	2	0	0	2
Aug 6	Spill	0	0	3	2
	Powerhouse	0	0	0	0
	Outfall	1	0	0	4
Aug 7	Spill	10	2	2	9
	Powerhouse	0	0	0	0
	Outfall	9	0	0	2
Aug 8	Spill	0	1	1	4
	Powerhouse	0	0	0	1
	Outfall	1	0	0	0
Aug 9	Spill	4	0	3	6
	Powerhouse	0	0	0	0
	Outfall	11	0	1	5

Pelicans continued to be observed in all zones, feeding or roosting along the shorelines and at the bypass outfall. Pelican numbers continued to decrease. Gull numbers increased slightly. They were observed in the spillway and at the outfall roosting. Tern numbers remained low. The gulls and terns are difficult to distinguish at long distances even with binoculars. The terns appeared to be feeding in the spillway with birds occasionally feeding at the outfall. Cormorants remained difficult to observe. However, we did observe them in the spillway. Osprey were noted roosting along the Washington shoreline and adult shad carcasses were found on the bypass pipe walkway.

An occasional osprey, blue heron, cormorant, tern, pelican, gull or gull flock was observed in the forebay. The gulls observed were a mixture of adults and juveniles. Most gulls were roosting or scavenging. Grebe numbered from five to 21 birds. No grebes were noted in the gatewell slots or juvenile fish channel. Cormorants and gulls were roosting on the rocks by the Washington shore boat dock in low numbers. One pelican was noted just outside the Oregon ladder exit.

The outfall hazing water sprinklers remain out of service due to system damage, which will require a contract to repair/replace. The bird distress calls appear to be less effective than earlier in the year as gulls were observed in low numbers roosting on the out fall pipe and the navigation lock wing wall. These calls have been adjusted weekly.

PSMFC staff continued recording observations of pelicans feeding at the bypass outfall. They are using a spotting scope for these observations. They intend to continue counting to see how pelicans respond when juvenile shad are the size of subyearling Chinook.

Invasive Species: The next mussel station examinations will occur in late August. One Siberian prawn was 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: August 3 – August 9, 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).

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
2	4/25/16	0606	---	---	Runner replacement
6	7/23/18	1013	---	---	Annual maintenance, doble testing
5	8/8/18	0630	---	---	Investigate for possible oil leak

Comments: None.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on August 6, 7, and 9.

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: An oil sheen was observed in gatewell slot 5A on August 9. Project maintenance staff believe that the sheen is residual oil off of the intake gate hydraulic cylinder rod. Oil absorbing socks were deployed in the slot. The oil sheen was documented and reported to the proper authorities.

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
36.9	27.8	26.9	18.2	71	70	11.0	11.0

*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 a low to moderate amount of pelicans, gulls, and cormorants observed around the project. Most of the pelicans 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 3 - 9, 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	08/07/2018	0658	08/07/2018	1424	STS Inspection & Hub Tapping
Unit 4	08/07/2018	1255	08/07/2018	1458	STS Inspection & Hub Tapping
Unit 5	08/08/2018	1358	08/08/2018	1550	STS Inspection
Unit 6	07/26/2018	0533	08/06/2018	1600	Doble Testing of T-2
Unit 6	08/08/2018	0700	08/08/2018	1325	STS Inspection

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 3, 4, 5, 6 and 8.

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 August 4, 5 and 6 inspections with readings of 9.4, 8.4 and 8.3 feet respectively.

North Shore Entrance (NSE-2) was at sill during the August 4 and 6 inspections with readings of 8.3 feet on each day.

South Powerhouse Entrance (SPE-1) was at sill during all inspections with readings of 5.3, 5.4, 5.5, 5.4 and 5.7 feet.

South Powerhouse Entrance (SPE-2) was at sill during all inspections with readings of 5.3, 5.4, 5.5, 5.4 and 5.7 feet.

South Shore Entrance (SSE-1) was at sill during all inspections with readings of 5.7, 5.8, 5.4, 5.9 and 6.4 feet.

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 %
	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. STS inspections were conducted August 7 and 8.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	18 or 19
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): GBT monitoring sampling began on April 10.

Transport Summary: Every-day barging changed to alternate day barging on May 22. A total of 1,664 fish were collected and 2,677 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
37.0	29.6	17.0	16.3	70.3	69.8	7.0	5.7

*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: 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 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*
8/3/2018	1	4
8/4/2018	4	16
8/5/2018	7	28
8/6/2018	11	44
8/7/2018	3	12
8/8/2018	14	56
8/9/2018	5	20
Totals	45	180

*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 03-09, 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.
1-4	08/06/18	05:00	08/09/18	19:10	Doble/CCPD Testing
6	08/06/18	05:00	08/09/18	17:00	Daily - Doble/CCPD testing

Comments: Doble and CCPD testing was conducted at Little Goose Dam from August 06 at 05:00 through August 09 at 19:10.

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on August 05, 07, and August 09.

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: Adult fish ladder cooling pump was out of service during Doble testing from August 06 at 05:00 through August 09 at 20:00.

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	8/9 was 5.9
	X		North Shore Entrance (NSE-2) Weir Depth	\geq 6.0' or on sill	8/9 was 5.9
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.

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: None.

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 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 2,730 fish were collected, and 2,535 were transported via barge. The descaling and mortality rates were 1.6% and 1.0% respectively. A total of 7 adult lamprey were removed from the separator, raceways, 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
33.5	28.1	21.8	9.1	70.4	69.8	5.4	4.9

*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	1	0	0	0	0
Trash/shear boom	6	0	0	0	0
Forebay count	10	1	0	0	0
Tailrace count	8	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*
8-03	127	254
8-04	73	146
8-05	98	196
8-06	84	174
8-07	132	264
8-08	95	190
8-09	65	130
Total	674	1,354

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

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

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: August 3- August 9, 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)

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 August 3, 4, 5 and 8.

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'	7.8
	X		South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	7.8
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
			North Shore Entrance (NSE-2) Weir Depth	\geq 7.0' or on sill	OOS
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.4

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. North shore and South Shore out of criteria readings are likely related to fish ladder control system calibration issues. The issues are being investigated.

Auxiliary Water Supply System:

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

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	1.75 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. Facility operation was in primary bypass from 0920-1031 hours and 1242-1314 hours to August 7 and again from 1223-1300 hours and 1418-1445 hours August 8 to facilitate flume flow testing. Testing of flume flows with an aggressive curve false wall was performed from 0920-1314 hours 7 August. Testing of flume flows with the gradual curve false wall was performed from 1223-1445 hours 8 August. Separator exits were closed to maintain a sanctuary pool while operation was changed to primary bypass until water elevation stabilized. No sampling occurred during these times.

Transport Summary: Every other day barging continues.

Spill/Spillway Weir: Summer spill began June 21 at 0000 hours. The RSW was closed at 1420 hours August 8 due to total project outflow being less than 30 kcfs and flows forecasted to remain less than 30 kcfs for more than 3 days. Spill is distributed according to Table LWG-8.

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
36.0	27.9	17.7	14.7	66.4	66.0	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 2,614 Siberian prawns were euthanized and 432 Siberian prawn mortalities were collected in the condition sample.

Siberian Prawn:

Date	8/3/2018	8/04/2018	8/05/2018	8/06/2018	8/07/2018	8/08/2018	8/09/2018
Euthanized	182	163	269	301	453	653	593
Dead	13	21	60	57	60	125	96

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
8/03/2018	1406	0	17	0	0
8/04/2018	1221	4	10	0	0
8/05/2018	1456	1	16	0	0
8/06/2018	1551	0	12	0	0
8/07/2018	1502	5	16	0	0
8/08/2018	1008	0	14	0	0
8/09/2018	1000	0	13	0	0

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

Adult Fish Trap Operations: Adult trap is operating Monday through Friday with a 28% sample rate. The adult trap is being flushed as needed to remove shad from screens. Over the last couple weeks six chinook mortalities about 25 cm long have been found on the grating above the recovery pool. No PIT tags were detected when scanned. It is unclear if the fish jumped from the recovery pool through the grating towards water flow or if they came through the supply. Nets are being used to isolate the drain water from the grating to determine.

Fish Rescue/Salvage: N/A

Research: N/A