U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#22-2021
July 23 – July 29, 2021

Project: McNary
Biologist: Bobby Johnson and Denise Griffith

Turbine Operation

Yes	No	Turbine Unit Status
	X	All 14 turbine units available for service? (See table & comments below for details.)

*All available turbine units are operated in accordance with App. C of the Fish Passage Plan.

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

	OOS		RTS		
Unit(s)	Date	Time	Date	Time	Outage Description
5	12/7	0643	8/5	N/A	Blade seals and hub oil replacement
2	6/7	0732	8/20	N/A	Nine-year overhaul/Transmission line 1
1	7/12	0720	8/20	N/A	Line 1 outage for BPA relays
3	7/27	1000	7/27	1030	ESBS camera inspections

Comments: The one percent peak efficiency constraint and unit priority are being followed per the 2021 Fish Passage Plan (FPP). The saw tooth unit priority pattern for temperature abatement continues. RTS dates are subject to change.

Adult Fish Passage Facilities

McNary fisheries technician or biologist performed a measured inspection of the adult fishways on July 24, 25 and 28. Fish counting, and video review of adult lamprey night passage continues.

Presumed heat stress of adult fish was not noted this week.

Fish Ladder Exits:

Yes	No	Location	Criteria	Measurements
X		Oregon Exit	Head over weir 1.0’ to 1.3’	1.0’ to 1.2’
X		Oregon Count Station Differential	0.0’ to 0.5’	0.2’ to 0.3’
X		Washington Exit	Head over weir 1.0’ to 1.3’	1.1’ to 1.2’
X		Washington Count Station Differential	0.0’ to 0.5’	0.1’ to 0.2’

Comments: Debris loads near the Oregon exit were minimal to moderate and minimal near the Washington exit.

At the Washington shore exit, a regulating weir alarm come in and was reset on July 25.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
	X		North Oregon Entrance Head Differential	1.0' – 2.0'	1.8' to 2.1'
X			NFEW2 Weir Depth	≥ 8.0'	9.3' to 9.5'
	X		NFEW3 Weir Depth	≥ 8.0'	Closed
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.5' to 1.7'
	X		SFEW1 Weir Depth	≥ 8.0'	7.4' to 7.5'
	X		SFEW2 Weir Depth	≥ 8.0'	7.4' to 7.6'
	X		Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 1.0 fps
X			Washington Entrance Head Differential	1.0' – 2.0'	1.2' to 1.3'
X			WFE2 Weir Depth	≥ 8.0'	9.0' to 9.1'
X			WFE3 Weir Depth	≥ 8.0'	9.0' to 9.2'

Comments: With fish pumps 1 and 3 being OOS, the Oregon ladder is adjusted for one operational fish pump according to the FPP, page MCN-25, 3.3.2.4.v, until July 28 at about 1500 hours when all entrance weirs were returned to their normal operating position. The out of criteria points for the Oregon ladder listed above are due to only fish pump 2 being functional. The Oregon north pool differential was out of criterion only on July 28.

Stoplogs will remain installed in all floating orifice gates (FOG's) except W1, W3, W43 and W44 until July 30 at which time they will be removed. Fabrication of the six remaining FOG's is on hold until fish pump 3 repairs are completed. Six gates have been rehabilitated to this point. The remaining gates will be replaced.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Fish Pump Blade Angle	Auxiliary Water Supply System (AWS)
Yes				WA shore Wasco County PUD Turbine Unit
	Yes			WA shore Wasco PUD Bypass
		Yes		Oregon Ladder Fish Pump 1, RTS date is July 30
Yes			26° to 27°	Oregon Ladder Fish Pump 2
		Yes		Oregon Ladder Fish Pump 3, RTS date is September 30
Yes				OR North Powerhouse Pool supply from juvenile fishway

Comments: Fish pump 3 remained out of service. Return to service dates are subject to change. Fish pump 1 returned to service on July 28 at 1425 hours. To assist in intake and discharge stoplog removal, the blade angle of fish pump 2 was reduced to zero from 1255 to 1346 hours. Intake stoplogs were installed in fish pump 3 on July 28 and 29.

Juvenile Fish Passage Facility

Normal sampling season, consisting of alternating days of primary and secondary bypass, continues. There were no interruptions in the schedule this week. Sample tank mortality has remained below 3.0 percent. There appears to be very little heat stress occurring, though the B side sample tank water temperature remained near 70 degrees Fahrenheit all week. The situation will be monitored.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to very light
X			Gatewell drawdown measured this week?	Daily
X			Gatewell drawdown acceptable?	
	X		Any debris seen in gatewells? (% coverage)	
	X		Any oil seen in gatewells?	

Comments: Current loads were minimal to very light near the powerhouse and very light to light beside the spillway. Incoming debris was minimal and consisted of aquatic vegetation long with woody material. Wind direction and project operations effected the debris distribution and help with dissipation. Much of the debris moved between the powerhouse and the Oregon shoreline.

No trash racks were cleaned this week.

The emergency bulkhead remains installed in 1C slot.

There are no problems to report. An algae bloom has been near unit 2 since July 13.

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: All screens are in place except in unit 5 and 1C slot, with both units being OOS. Camera inspections in unit 3 revealed no issues on July 27.

Daily VBS differential monitoring revealed no differentials out of criteria and no screens were cleaned.

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

Yes	No	NA	Item	Number of orifices in service
X			Did orifices operate satisfactory?	42
X			Dewatering and cleaning systems operating satisfactory?	

Comments: The orifice in 1C slot remains closed and a makeup orifice is opened in 1B slot. Orifice operators and lighting were repaired as required.

There are no problems to report.

Bypass Facility:

Yes	No	NA	Item
X			Sample gates on?
		X	PIT-tag sampling system on?

Comments: All bypass facility systems operated satisfactorily. The sample gates were only on during secondary bypass. The PIT-tag system gates remained off as there is no need for that system.

This week, 70 juvenile lamprey and 2,180 smolts were bypassed during secondary bypass. The smolt monitoring staff reports fish data in a separate report.

There are no problems to report.

Top Spillway Weir (TSW) Operations:

The TSW's remain out of service. Standard spillgates are in bays 19 and 20.

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
154.1	133.8	88.1	76.4	70.8	69.5	6.0	6.0

Comments: The above data is provided by the smolt monitoring staff except water clarity, which comes from the control room. The data day runs from 0700 to 0700 hours. Water temperature monitoring throughout the juvenile system continues. The smolt monitoring staff will report temperature data and monitoring issues in a separate report.

The summer spill program, with 57 percent of flow being spilled, continues.

The motor starter for Crane 6 has a delivery date of August 16. The electrical work will begin as soon as possible. Cranes 6's load limit indicator continues to be an issue.

Crane 7 remains serviceable. However, work on the main hoist gearbox will begin as soon as Crane 6 RTS. The crane's motor starter still needs to be replaced. A contract will be required. The current target date for replacement will be in October or November. Also, Crane 7's load limit indicator continues to be an issue.

Bay 2 remains closed and the gate in bay 19 remains dogged open at four feet, with is required by the FPP, Table MCN-9 with current flow volumes.

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections will occur on August 3.

Avian Activity: Avian counts continued. These counts are reflected in Table 3 below.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
July 23	Spill	0	0	0	8	0
	Powerhouse	0	0	0	4	0
	Outfall	1	7	0	3	0
	Forebay	0	0	1	0	28
July 24	Spill	4	4	1	6	0
	Powerhouse	0	0	0	6	0
	Outfall	3	7	0	2	0
	Forebay	0	0	0	1	14
July 25	Spill	0	2	1	7	0
	Powerhouse	0	0	0	4	0
	Outfall	1	3	0	0	0
	Forebay	0	0	0	1	13
July 26	Spill	1	0	6	18	0
	Powerhouse	0	0	0	6	0
	Outfall	2	6	0	0	0
	Forebay	0	0	0	0	24
July 27	Spill	45	0	6	7	0
	Powerhouse	0	0	0	3	0
	Outfall	8	11	0	0	0
	Forebay	0	0	0	0	12
July 28	Spill	20	1	6	12	0
	Powerhouse	0	0	0	3	0

	Outfall	15	4	0	0	0
	Forebay	0	0	0	0	15
July 29	Spill	6	0	5	5	0
	Powerhouse	0	0	0	2	0
	Outfall	7	4	3	0	0
	Forebay	0	0	3	0	1

The lasers on the outfall pipe and navigation lock wing wall were turned off and reactivated on July 27 and 29, respectively, as part of the evaluation study plan. Improving effectiveness of both lasers is still under consideration.

Two large bird distress calls remain installed on the navigation lock wing wall.

USDA Wildlife Services daily shore hazing concluded on July 24.

In the spillway zone, gulls, pelicans, cormorants, and terns were observed. The birds were mostly feeding in the spill flow along with roosting around the basin. One pelican was noted roosting on the Washington ladder wall and terns were noted roosting on the navigation wing wall. Gull, tern, and cormorant numbers fluctuated but remained relatively low. Also, gulls and terns can be hard to distinguish apart. Pelican numbers decreased. Osprey were also noted roosting in the area.

In the powerhouse zone, pelican numbers decreased. Most birds were observed along the face of the powerhouse and at the south Oregon ladder entrance. It is assumed they are feeding on adult shad.

In the bypass outfall zone, gull numbers and cormorant numbers fluctuated remained relatively low. The gulls and cormorants were roosting on the pipe and lightly feeding at the outfall. Pelicans were noted twice and appeared to be feeding or drifting by. The terns noted in the zone were roosting on the pipe and an osprey was roosting on the navigation light. The overall lack of feeding may be due to spill volume, bird activity and/or laser use.

In the forebay zone, grebes, terns, and pelicans were noted. Grebe numbers were lower but stable. The other birds were in low number. Most birds were either feeding or roosting on the water. Outside the zone, terns, gulls, pelicans, ospreys, and cormorants were observed in low numbers.
No grebes or pelicans were noted elsewhere.

Invasive Species: The mussel station examinations revealed no problems on July 25.

Siberian Prawn: One Siberian prawns was removed from the sample and euthanized this week. This brings the yearly total to four prawns.

Fish Rescue/Salvage: There is nothing to report.

Research: The one GBT examination reported for the week occurred on July 27. No smolts showed signs of trauma. However, there were only 51 fish examined. There were no mortalities removed from the recovery raceway.

Project: Ice Harbor
Fisheries Tech: Tim DeKoster
Fisheries Biologist: Ken Fone

Turbine Operation

Yes	No	Turbine Unit Status
	X	All 6 turbine units available for service (see table & comments below for details).

*All available turbine units are operated in accordance with App. C of the Fish Passage Plan.

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
3	5/3/19	0641	---	---	Turbine runner replacement and stator rewind
5	7/6/21	0640	7/29/21	1208	Annual maintenance
6	7/19/21	1642	---	---	Annual maintenance and new oil

Comments: None.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on July 27, 28, and 29.

Fish Ladders:

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

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
		x	South Shore Entrance (SFE-1) Weir Depth	≥ 8.0’ or on sill	
	x		South Shore Channel/Tailwater Differential	1.0’ – 2.0’	2.4’
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’	2.8’

Comments: The south shore and north shore entrance channel/tailwater differentials were above criteria on the fishway inspections conducted on July 28 and 29, respectively. If this continues to be a problem when the tailwater elevation is low, another auxiliary water supply pump could be temporarily turned off at the south and/or north shore while the fishways are closely monitored to see if the entrance criteria will be met.

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)	Average of 1 square yard
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?	6A

Comments: A light oil sheen was observed in gatewell 6A on July 27. The sheen is suspected to be hydraulic oil residue from the head gate cylinder. An oil absorbent boom was deployed in the head gate slot and the appropriate state and federal agencies were notified of the oil spill.

Submersible Traveling Screens (STSs) / Vertical Barrier Screens (VBSs):

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

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: Orifices are being backflushed three times per day. There were no debris obstructions observed at the orifices, as indicated by a reduced flow through the orifices.

The replacement actuator for the water regulating weirs in the collection channel is being operated in manual control. An analog controller input was added to the actuator and needs to be programmed to function automatically. Currently, the water level in the collection channel is being visually monitored three times per day. The actuator is operated electronically in “local” control to manually adjust the weirs as needed.

Juvenile Fish Facility: The Juvenile Fish Facility is operating in primary bypass mode.

Fish Sampling: Sampling at Ice Harbor Dam has concluded for the 2021 season.

Removable Spillway Weir (RSW): Thirty percent spill for fish passage is occurring at Ice Harbor Dam. The RSW was closed, until further notice, on July 9 at 1513 hours as coordinated through the Technical Management Team to reduce tailrace temperatures.

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
28.6	16.5	8.5	4.7	72	72	9.0	9.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Turbine cooling water strainer inspections for lamprey are done for the season.

Avian Activity: There were moderate numbers of piscivorous birds observed around the project (see table below). Most of the pelicans, caspian terns, and gulls were observed foraging around Eagle Island.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
July 23	---	---	---	---	---
July 24	---	---	---	---	---
July 25	---	---	---	---	---
July 26	28	5	17	0	38
July 27	9	5	0	0	44
July 28	17	8	7	0	23
July 29	16	4	9	0	4

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 the fish sampling contractor, frozen and properly disposed of in a landfill.

Fish Rescue/Salvage: Unwatering activities that involved fish rescue did not occur this week.

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

Project: Lower Monumental
Biologists: Raymond Addis

Turbine Operation

Yes	No	Turbine Unit Status
	X	All 6 turbine units available for service (see table & comments below for details).

*All available turbine units are operated in accordance with App. C of the Fish Passage Plan.

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
Unit 2	07/15/2019	0720	09/02/2021	ERTS	Annual, Draft Tube Liner
Unit 4	07/06/2021	0700	09/23/2021	ERTS	Annual, Scroll Case Repair

Comments: None.

Adult Fish Passage Facility

The adult fishways were inspected by Corps and EAS biologists on July 23, 24, 25, and 28.

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: None.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Shore Entrance (NSE-1) Weir Depth	≥ 8.0’ or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	≥ 8.0’ or on sill	
X			North Shore Channel/Tailwater Differential	1.0’–2.0’	
		X	South Powerhouse Entrance (SPE-1) Weir Depth	≥ 8.0’ or on sill	
		X	South Powerhouse Entrance (SPE-2) Weir Depth	≥ 8.0’ or on sill	
X			South Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
		X	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: The south powerhouse entrance weir (SPE-1) was on sill during all inspections with readings of 6.0, 5.3, 6.1 and 5.8 feet respectively. The south powerhouse entrance weir (SPE-2) was on sill during all inspections with readings of 6.0, 5.3, 6.1 and 5.8 feet respectively. The south shore entrance weir (SSE-1) was on sill during all inspections with readings of 6.8, 6.3, 6.7 and 6.9 feet, respectively.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
Yes			AWS Fish Pump 1
Yes			AWS Fish Pump 2
Yes			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)	28 yds^2
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 - 5%
	X		Any oil seen in gatewells?	

Comments: 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 were operating on cycle mode during the reporting period 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?	18
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Collection Facility: Collection into the raceways for transport ended June 20 at 1500. Secondary Bypass began June 20 at 1500. Sampling for condition on alternating days began July 9. The facility was placed into Primary Bypass on non-sample days. A total of 382 fish were collected with 382 fish bypassed back to the river during this reporting period.

Transport Summary: Transport at Lower Monumental ended June 20.

Spillway Weir: Summer Spill began at 00:00:00 on June 21. The RSW went into service at 0001 on April 3 and was closed on July 9 due to high river temperatures with low river flows.

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
26.8	18.0	11.5	5.8	71	69.5	5.9	5.4

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected June 14.

Avian Activity: Highest counts of foraging piscivorous birds in the tailrace (SWT1+PH1+PH2) during adult ladder inspections at Lower Monumental Dam are listed in the table below.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
07/23/2021	1000	10	0	0	0	7
07/24/2021	1100	3	0	0	0	10
07/25/2021	0945	5	0	0	0	9
07/28/2021	1200	8	0	0	0	1

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

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on June 6.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by PSMFC and EAS, frozen and properly disposed of in a landfill. Total Siberian prawn counts at Lower Monumental Dam for this reporting period are reported in the table below.

Date	Sample (euthanized)	Collection*
07/23/2021	112	224
07/24/2021	---	---
07/25/2021	79	158
07/26/2021	---	---
07/27/2021	50	100
07/28/2021	---	---
07/29/2021	69	138
Total	310	620

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

Fish Rescue/Salvage: No fish rescue or salvage occurred.

Research: No research is occurring currently.

Project: Little Goose
Biologists: Chuck Barnes

Turbine Operation

Yes	No	Turbine Unit Status
	X	All 6 turbine units available for service (see table & comments below for details).

*All available turbine units are operated in accordance with App. C of the Fish Passage Plan.

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	03/31/2022	17:00	Spider and upper guide bearing repair.
6	03/18/21	14:17	03/31/2022	17:00	T2 ground
3	07/26/21	07:20	~09/03/21		Unit annual and controls upgrade
1	07/27/21	10:21	07/27/21	10:36	Blade response trip
1	07/28/21	11:00	07/28/21	14:05	Controls check

Comments: Little Goose experienced a T2 transformer ground on March 18 at 14:17. T2 transformer and Units 5 and 6 will be out of service until repairs/replacement can be performed. Unit 1 outages were covered by Units 2 and 4 according to unit priority protocol.

Adult Fish Passage Facility

Little Goose fish facility, Environmental Assessment Services (EAS) and Oregon Department of Fish and Wildlife (ODFW) staff inspected the adult fishway on July 24, 26, and July 29. All inspections took place during emergency modified summer spill operations.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head ≤ 0.5’	
X			Fish Ladder Picketed Lead Differential	Head ≤ 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		

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	
X			South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 7.0’ or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 7.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
X			North Shore Entrance (NSE-1) Weir Depth	≥ 6.0’ or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	≥ 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: The adult fishway continues to operate in manual mode. The fish control system still has a faulty hydroranger for the NSE1 weir and is currently awaiting parts.

Ladder exit cooling pumps were placed into service at 2052 hrs on 12 June when 0.5m forebay temperatures exceeded 64°F.

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: Fish pumps 1 and 2 were returned to service on February 23. Fish pump 3 returned to service April 7.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comment
X			Forebay debris load acceptable? (amount)	$0ft^2$
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: There is currently minimal floating woody debris inside the trash shear boom. Gatewell drawdowns for Unit 1 were conducted on July 29 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: ESBS's were installed in Units 2, 3 and 4 on March 22 and 23. VBS differentials for Unit 1 were conducted on July 29 and were in criteria. ESBS/VBS camera inspections took place June 8-10.

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: The juvenile bypass system was watered up on March 22 and began daily collection for transportation on April 23.

Collection Facility: Collection for condition monitoring in conjunction with secondary bypass commenced on April 1 with the first sample being conducted on April 2. Every other day collection and sampling occurred through April

22. Daily collection for transportation began on April 23 with the first daily barge departing on April 24. The collection and transport facility operated within criteria this report period. A total of 8,280 fish were collected, 5,549 were transported via truck, 0 were bypassed, and there were 39 sample or facility mortalities. The descaling and mortality rates were 0.3% and 0.53%, respectively. Two adult lamprey were removed from the separator during this report period.

Transport Summary: Daily fish transportation via barge began on April 24. Every other day barge transportation began May 18 and ended June 21. Collection for transport resumed at 0700 hrs July 5 and every other day truck transportation began July 6.

Spillway Weir: Spring spill operations began on April 3 with the ASW in high crest. ASW day surface spill emergency procedure began July 3 at 0900 hours and ceased July 9 at 1600 hours.

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
25.4	19.2	7.4	6.5	68.9	68.3	6.0	6.0

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainer inspections commenced on January 13. Inspections will continue in accordance to the Fish Passage Plan (FPP) and results will be submitted to the District.

Avian Activity: Daily piscivorous bird counts at Little Goose Dam began on April 1. USDA hazing actives began on March 29 and ended June 19.

Date	**Time**	**Gulls**	**Cormorants**	**Caspian Terns**	**Pelicans**
7-23	0650	4	0	0	1
7-24	0830	26	1	0	0
7-25	0950	0	0	0	0
7-26	1130	10	4	0	0
7-27	0900	31	1	0	1
7-28	0645	4	0	0	0
7-29	1100	4	1	0	0

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

Siberian Prawn: Juvenile fish collection began on April 1. 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**	**Collection***
7-23	226	1130
7-24	88	880
7-25	420	4200
7-26	619	2476

7-27	795	3180
7-28	955	3820
7-29	730	2920
Totals	3833	18606

Gas Bubble Trauma (GBT): GBT monitoring was performed on July 26. Of the 19 fish examined, 1 fish had signs of GBT.

Fish Rescue/Salvage: Neither rescue nor salvage activities applicable for this report period.

Research: The Nez Perce Tribe (NPT) began adult steelhead kelt collection on May 3 and ended June 30.

Project: Lower Granite
Biologists: Elizabeth Holdren and David Miller

Turbine Operation

Yes	No	Turbine Unit Status
	X	All 6 turbine units available for service (see table & comments below for details).

*All available turbine units are operated in accordance with App. C of the Fish Passage Plan.

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

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
6	07/26	0727			Six Year Overhaul

Comments: None.

Adult Fish Passage Facility

Lower Granite Biologists and Anchor QEA staff inspected the adult fishway July 23, 24, 26, and 28.

Fish Ladder:

Yes	No	NA	Location	Criteria	Comments
X			Fish Ladder Exit Differential	Head ≤ 0.5’	
X			Fish Ladder Picketed Lead Differential	Head ≤ 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: The adult fish ladder cooling pumps were brought online June 3.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
	X		South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	7.6’, 7.9’, 7.9’
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	7.7’, 7.6’, 7.9’
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 8.0’ or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0’ or on sill	
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	0.9’
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	6.8’
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	6.1’, 5.6’
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.7’, 0.6’, 0.6’. 0.8’
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Ladder collection channel operation and configuration are being evaluated to resolve ongoing issues. FOGs 1, 4, 7, and 10 are in operation. North shore and north powerhouse channel/tailrace head differentials ability to maintain criteria range is dependent of tailrace conditions. Lower Granite electrical crew continue to work on the ladder control system issues.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
Yes			AWS Fish Pump 1
Yes			AWS Fish Pump 2
	Yes		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)	Weekly average 20.0 yds^2
X			Trash rack differentials measured this week?	
X			Trash rack differentials 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: None.

Collection Facility: The facility is in collection mode for condition sample and emergency juvenile truck transport due to high regional temperatures and declining river conditions.

Transport Summary: A total of 5,318 smolts were transported this reporting period. There have been 74,193 smolts transported by truck since July 2.

Spillway Weir: The RSW was closed July 29 at 1402 hours due to river flow being too low to maintain both the RSW and minimum generation. A total of 249,821 PIT tagged smolts have been detected over the RSW this season compared to a total of 23,130 smolts detected in the juvenile system. A total of 663 adult PIT tagged steelhead, 39 Chinook, and 1 Sockeye have been detected at the RSW this season compared to 72 adult steelhead and 10 Chinook detected at the juvenile facility.

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
24.5	18.3	11.9	5.9	66.0	64.0	5.0	5.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A

Invasive Species: No zebra/quagga muscles were detected on the trap substrate. There were 31,979 Siberian prawns collected in sample and euthanized this week.

Avian Activity:

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
July 23	1035	6	2	0	0
July 24	1020	1	3	0	0
July 25	0821	2	3	0	0
July 26	1500	2	15	0	0
July 27	1600	0	17	0	0
July 28	1104	2	7	0	0
July 29	1400	3	14	0	0

Gas Bubble Trauma (GBT) Monitoring: N/A

Adult Fish Trap Operations: Emergency transport of Sockeye for IDFG began at 0700 hours July 6 and continued through July 29. Collection of incidentally trapped fall Chinook for early transport to NPT hatcheries began July 26.

American shad mortalities have increased resulting in the need to reposition the turnpool gate for cleaning July 6. This will likely occur several more time over the next month and does present some risk of the gate becoming stuck. At this time there is no alternative to moving the gate however the gate replacement is currently in design.

Fish Rescue/Salvage: The adult trap was flushed on July 25 to clear the screens of incidental species mortalities. One clipped sockeye mortality was observed. There were no fish observed during the fish rescue of unit 6 July 27. About 300 crawdads were removed from the scrollcase.

Research:

Idaho Fish and Game (IDFG) Emergency Adult Sockeye Trap and Haul

Collection of adult sockeye from Lower Granite adult trap and fallback from the juvenile separator for emergency trap and haul in response to increased regional temperatures ended July 29 with 201 sockeye transported from the Lower Granite adult trap to the Eagle Fish Hatchery (28 unclipped and 173 clipped).

National Marine Fisheries Service (NMFS) PIT tagging of Adult Wild Chinook and Adult Steelhead for ISEMP-Related Dispersal Monitoring:

The goal of this project is to PIT tag up to 4000 unclipped adult Chinook and 4000 unclipped adult steelhead collected in the adult trap daily sample for dispersal monitoring.

Sampling of Steelhead, Chinook salmon, and Sockeye salmon by the Idaho Department of Fish and Game (IDFG) and NOAA Fisheries for Biological data collection.

Upriver migrating steelhead, spring/summer Chinook salmon, and sockeye salmon are collected from the adult trap beginning April 4 through December 15. The goal is to collect 5-20% of adult steelhead, spring/summer Chinook salmon, and sockeye salmon ascending the ladder April 4-December 15. Data collection includes fish scales, genetics tissue, sex and length, wild/hatchery composition, and non-adipose clipped hatchery fish assessment. Natural origin adult steelhead and spring/summer Chinook salmon trapped will be PIT tagged to estimate headwater tributary escapement. Sockeye salmon may be PIT tagged in the future to estimate metrics regarding conversion rates. Some steelhead and spring/summer Chinook salmon may be radio-tagged or spaghetti-tagged. This information on adult fish forms the basis for status information used in several forums including BiOp-RPA identified needs.

PIT Tagging and Genetic Sample Collection from Bull Trout for USFWS:

Bull trout will be collected as part of the normal adult trap daily sample and using the adult SbyC system to recapture previously PIT tagged fish. Untagged bull trout will be PIT tagged, fin clipped for genetic analysis, and have morphometric data collected including weight and length etc. Fin clips will be sent to USFWS to determine the fish's origin. Previously PIT tagged bull trout will only have morphometric data collected. All fish will be released back into the adult fish ladder.