U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#20-2021
July 9 – July 15, 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	7/29	N/A	Blade seals and hub oil replacement
2	6/7	0732	7/29	N/A	Nine-year overhaul
1	7/12	0720	8/20	N/A	Line 1 BPA outage
8	7/12	0630	7/15	1317	Annual maintenance
9	7/13	1000	7/13	1030	ESBS camera inspections, other units OOS

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 9, 10, 11 and 14. Fish counting, and video review of adult lamprey night passage continues.

Presumed heat stress of adult fish was noted again this week. One sockeye mortality was observed in the navigation lock. However, a pelican has been feeding in this area so more fish may have been present. Two sockeye, two Chinook and approximately 65 shad mortalities were observed behind Oregon ladder entrance weir NFEW3, which is currently raised. Only one sockeye mortality appears to be relatively fresh. All fish were flushed downstream.

Fish Ladder Exits:

Yes	No	Location	Criteria	Measurements
X		Oregon Exit	Head over weir 1.0’ to 1.3’	1.0’
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’	0.2’

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

At the Oregon exit, low head over weir was noted and a set point adjustment was requested on July 15.

At the Washington shore exit, a regulating weir alarm came in and was reset on July 14.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0' – 2.0'	1.8' to 1.9'
X			NFEW2 Weir Depth	≥ 8.0'	9.3' to 9.4'
	X		NFEW3 Weir Depth	≥ 8.0'	Closed
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.4' to 1.6'
	X		SFEW1 Weir Depth	≥ 8.0'	7.4' to 7.6'
	X		SFEW2 Weir Depth	≥ 8.0'	7.4' to 7.7'
	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'	8.9' to 9.5'
X			WFE3 Weir Depth	≥ 8.0'	8.8' to 9.5'

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. The out of criteria points for the Oregon ladder listed above are due to only fish pump 2 being functional. SFEW2 was found with slack cables on July 11 and 14. The operators immediately resolved the issue. When SFEW2's cables are slack, the weir would be shallower than the readings recorded.

Stoplogs remain installed in all floating orifice gates (FOG's) except W1, W3, W43 and W44 per the FPP. Fabrication of the six remaining FOG's continued. 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			24° or 26°	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 pumps 1 and 3 remained out of service. Return to service dates are subject to change. To remove the slack from SFEW2's cables on July 11 and 14, the blade angle of fish pump 2 was reduced briefly.

Juvenile Fish Passage Facility

Normal sampling season, consisting of alternating days of primary and secondary bypass, continues. There were no interruptions the schedule this week. Sample tank mortality reached 5.6 percent for the data day of July 14. It is presumed the mortality is related to heat stress. The B side sample tank water temperature that morning was 71.1 degrees Fahrenheit. The situation will be monitored and a reduction in sampling will occur if required.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal
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 near the powerhouse and 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.

No trash racks were cleaned this week.

The emergency bulkhead was installed in 1C slot on July 15. With unit 2 dewatered, if unit 1 was to lose water, the bulkhead is designed to allow unit 1 to be refilled. The gatewell trap was not used in the slot before the bulkhead was installed. The unit had been down for over three days and fish passage numbers were very low. Fortunately, no mortalities were observed.

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, which is OOS. Camera inspections in units 1, 8 and 9 revealed no issues on July 13. So, the emergency bulkhead could be installed, the ESBS in 1C slot was removed on July 15. Also, communication was lost and restored to the ESBS's in unit 14 on July 15.

Daily VBS differential monitoring revealed no differentials out of criteria. Three screens were cleaned on July 10. The screens in 7B and 7C slots were inspected on July 14. Two smolt mortalities, which were possibly due to heat stress, were observed on July 10.

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: Orifices were adjusted for VBS cleaning and inspection as required. Before the slot dewatered, the orifice in 1C slot was closed and a makeup orifice was opened in 1B slot on July 15.

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, 340 juvenile lamprey and 7,010 smolts were bypassed during secondary bypass. The smolt monitoring staff reports fish data in a separate 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
169.4	134.3	96.9	74.5	71.1	69.3	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 control for Crane 6 is in transit and could arrive next week. The electrical work will begin as soon as priority items like fish pump 1 have been completed. Cranes 6's load limit indicator continues to be an issue.

Crane 7 remains serviceable. However, work on the main hoist gearbox could begin at any time. 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.

With Crane 6 still OOS, the gate in bay 2 remained dogged open at four feet for this report period. With Crane 7 being prepared for repairs, the gate in bay 19 also remained dogged open at four feet, with is required by the FPP, Table MCN-9.

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 9	Spill	8	0	0	12	0
	Powerhouse	0	0	0	10	0
	Outfall	5	0	0	0	0
	Forebay	0	0	0	2	38
July 10	Spill	5	0	0	14	0
	Powerhouse	0	0	0	12	0
	Outfall	0	6	0	0	0
	Forebay	1	0	0	1	40
July 11	Spill	0	0	2	18	0
	Powerhouse	0	0	0	16	0
	Outfall	7	2	0	0	0
	Forebay	0	0	0	0	0
July 12	Spill	2	0	1	18	0
	Powerhouse	0	0	0	6	0
	Outfall	4	11	0	0	0
	Forebay	1	0	0	1	1
July 13	Spill	1	0	2	25	0
	Powerhouse	0	0	0	22	0
	Outfall	7	6	0	1	0
	Forebay	0	0	0	0	15
July 14	Spill	0	0	2	16	0

	Powerhouse	0	0	0	19	0
	Outfall	11	7	0	0	0
	Forebay	0	0	0	1	57
July 15	Spill	0	0	7	33	0
	Powerhouse	0	0	0	26	0
	Outfall	16	15	0	2	0
	Forebay	0	0	0	6	55

The lasers on the outfall pipe and navigation lock wing wall were turned off and reactivated on July 12 and 15, 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 continues. The last boat hazing trip occurred on July 9.

In the spillway zone, gulls, pelicans, and terns were observed. The birds were mostly feeding in the spill flow. Gull and tern numbers were low. Also, gulls and terns can be hard to distinguish apart. Pelican numbers were high and stable. Osprey were also noted roosting in the area.

In the powerhouse zone, pelican numbers remained high. 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. The birds appear to be more aggressively looking for shad than in past years. A few terns were noted in the area but not during counting.

In the bypass outfall zone, gull and cormorant numbers fluctuated. 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 overall lack of feeding may be due to spill volume, bird activity and/or laser use. Terns may be also roosting on the pipe but have not been counted.

In the forebay zone, grebes, gulls, and pelicans were noted. Grebe numbers fluctuated. Gull and pelican numbers were low. Most birds were either feeding or roosting on the water. Terns were observed but not during counting. Outside the zone, gulls, pelicans, ospreys, and cormorants were observed in low numbers.

No grebes or pelicans were noted elsewhere.

Invasive Species: The next mussel station examinations will occur in late July.

Siberian Prawn: No Siberian prawns were removed or euthanized this week. However, when the emergency bulkhead was removed from storage, several live prawns were observed.

Fish Rescue/Salvage: There is nothing to report.

Research: The one GBT examination reported for the week occurred on July 13. No smolts showed signs of trauma. However, two smolt mortalities, which may be related to heat stress, were 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	---	---	Annual maintenance

Comments: None.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on July 13, 14 and 15.

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’	2.2’, 2.1’
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: The south shore channel/tailwater differential was found to be 2.2’ and 2.1’ on July 13 and July 15, respectively, when the tailwater was lower. Normally at least five south shore auxiliary water supply (AWS) pumps are operated to meet fish entrance criteria. However, if the channel/tailwater differential continues to be high, the Project Biologist may try running four pumps during low tailwater conditions and closely monitor whether entrance criteria are being 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?	

Comments: None.

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: STSs are in continuous-run mode due to the presence of subyearling chinook in the Lower Monumental Fish Facility sample with average fork lengths of less than 120 mm.

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: Fish condition sampling normally occurs on Mondays and Thursdays each week. Fish sampling did not take place on July 12 and July 15 because water temperatures were greater than 70ºF (N.B. Ice Harbor Section 2.3.2.5 of the Fish Passage Plan). Sampling is concluded for the 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
35.0	22.7	10.4	6.7	71	71	9.0	8.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Turbine cooling water strainer inspections occurred on July 15. There were no fish in the strainers.

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 9	---	---	---	---	---
July 10	---	---	---	---	---
July 11	---	---	---	---	---
July 12	21	8	7	0	38
July 13	60	2	0	0	46
July 14	35	7	19	0	11
July 15	11	5	0	9	7

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 1	07/14/2021	1617	07/14/2021	1633	Adjust PSS Setting
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 9, 10, 11, 12, and 14.

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, 5.8, 6.0, 5.7 and 5.6 feet respectively. The south powerhouse entrance weir (SPE-2) was on sill during all inspections with readings of 6.0, 5.8, 6.0, 5.7 and 5.6 feet respectively. The south shore entrance weir (SSE-1) was on sill during all inspections with readings of 6.7, 6.8, 7.0, 6.6 and 6.6 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)	37 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 in continuous-run mode due to average sub-yearling Chinook salmon and sockeye lengths being less than 120 mm.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	18-20
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 20th 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 1,051 fish were collected with 1,047 fish bypassed back to the river during this reporting period.

Transport Summary: Transport at Lower Monumental ended June 20th.

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 at 1442 on July 9 due to high river temperatures.

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
32.2	23.4	16.8	11.3	70.5	70	6.0	5.1

*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
07/09/2021	1000	37	0	0	0	4
07/10/2021	1040	4	0	0	0	16
07/11/2021	0815	30	0	0	0	5
07/12/2021	1115	4	0	0	0	11
07/14/2021	1030	6	0	0	0	8

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*
07/09/2021	29	116
07/10/2021	---	---
07/11/2021	32	128
07/12/2021	---	---
07/13/2021	100	200
07/14/2021	---	---
07/15/2021	44	88
Total	205	532

*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
1-4	07/13/21	05:02	07/13/2021	17:07	Line outage to isolate T2 for work

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.

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 10, 12 and July 15. 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	4.7
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0’ or on sill	4.7
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. Project staff have struggled to maintain entrance criteria during gas cap spill. The fish control system still has a faulty hydroranger for the NSE1 weir and is currently awaiting parts. NSE-1 and NSE-2 were found below criteria for the July 10 inspection and were adjusted and placed back in criteria for the July 12 and 15 inspections.

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 15 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 15 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 25,041 fish were collected,

19,904 were transported via truck, 0 were bypassed, and there were 96 sample or facility mortalities. The descaling and mortality rates were 0.7% and 0.44%, respectively. One adult lamprey was 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 started 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
31.0	24.4	10.0	7.0	70.0	69.0	6.0	5.6

*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
7-9	0900	20	1	0	0
7-10	0900	12	1	0	1
7-11	0615	4	0	0	1
7-12	1100	0	0	0	0
7-13	1045	5	0	0	1
7-14	0900	12	0	0	2
7-15	0900	16	0	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*
7-9	100	1000
7-10	134	1340
7-11	80	1600
7-12	88	1760
7-13	39	780
7-14	213	4260

7-15	97	2425
Totals	751	13165

Gas Bubble Trauma (GBT): GBT monitoring was performed on July 10. Of the 100 fish examined, 2 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
2	07/01	0705	07/14	1222	Oil/water separator install
5	07/12	0720			SQ2 Wiring Upgrade

Comments: None.

Adult Fish Passage Facility

Lower Granite Biologists and Anchor QEA staff inspected the adult fishway July 9, 10, 12, and 14.

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’	7.9’
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	≥ 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’	0.8’
X			North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	5.2’, 6.9’
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.1’, 0.4’, 0.8’. 0.4’
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: AWS pumps were out of service on July 13 from 1409-1522 hours due to a power outage related to the powerhouse 480 Volt and 125 Volt DC control Voltage switchgear replacement.

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 19,345 smolts were transported this reporting period. There have been 60,927 smolts transported by truck since July 2. Lower Granite staff used the 3500-gallon tank and loaded fish at Little Goose due to fish number exceeding their tank capacities.

Spillway Weir: July 3 spill patterns were modified to only the RSW open from 0900-2300 hours and FPP summer spill from 2300-0900 hours daily in response to high regional temperatures. A total of 250,084 PIT tagged smolts have been detected over the RSW this season compared to a total of 23,096 smolts detected in the juvenile system.

A total of 658 adult PIT tagged steelhead and 35 Chinook have been detected at the RSW this season compared to 70 adult steelhead and 9 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
28.5	24.2	11.3	8.7	67.6	65.9	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 1,758 Siberian prawns collected in the condition sample.

Avian Activity: Bird hazing activity concluded on June 30.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
July 9	1053	0	0	0	0
July 10	1130	0	3	0	0
July 11	1135	2	2	0	0
July 12	1509	0	3	0	0
July 13	1408	0	1	0	0
July 14	1315	0	0	0	0
July 15	1115	1	3	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 a scheduled to continue until July 23. The adult trap is operated Monday through Friday at a 28% (20% /week) sample rate. Total collected and sampled for the report week was 408 Chinook (223 clipped and 185 unclipped), 22 steelhead (8 clipped and 14 unclipped), and 103 sockeye. Of the sockeye collected this week 84 were hauled by IDFG as part of the emergency trap and haul program.

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 9, 11, and 13 to clear the screens of incidental species mortalities. No salmonid mortalities were observed.

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 increasing temperature in the Stanly Basin began at 0700 hours July 6. Collection will occur Monday through Thursday until July 23 with the final date contingent on regional temperature. Sockeye will be loaded directly into truck tanks for transport on Tuesday and Thursdays. Sockeye will be held in the kelt tanks

located at the JFF with flows and temperatures monitored by Corps bio technicians when IDFG trucks are not on site. There have been 135 sockeye transported by IDFG to EFH.

Idaho Fish and Game (IDFG) Genetic Stock Identification

Fish collected as part of the Lower Granite juvenile condition sample are used to enumerate and characterize age composition and genetic stock profiles of naturally producing yearling chinook and juvenile steelhead. IDFG will sample Monday through Friday through mid-June with a goal of collecting 2,000-5,000 yearling chinook and juvenile steelhead genetic samples. Collection for this study emend June 30.

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. All 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.