U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#29-2020

Project: McNary
Biologist: Bobby Johnson and Denise Griffith
Dates: September 11 to 17, 2020

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 14 turbine units available for service. (See table & comments below for details).	**Hard**	**Soft**
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

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

	OOS		RTS		
Unit(s)	**Date**	**Time**	**Date**	**Time**	**Outage Description**
2	8/17	0754	9/17	1700	New top plate pump installation.
5 & 6	9/14	0700	9/25	NA	Transformer, unit annual & doble testing.
9	9/14	0700	9/30	NA	Annual and other maintenance.
11 & 12	9/15	1000	9/15	1100	ESBS camera inspections.

Comments: The hard one percent peak efficiency constraint continued. The sawtooth unit priority pattern was concluded on September 15 as the sample tanks' water temperatures went well below 68 degrees F this week.

Adult Fish Passage Facilities

McNary fisheries biologists performed measured inspections of the adult fishways on September 11, 15 and 16. Adult fish counting, and video review of nighttime lamprey passage continued.

Fish Ladder Exits:

Yes	No	Location	Criteria	Comments
X		Oregon Exit	Head over weir 1.0' to 1.3'	
X		Oregon Count Station Differential	0.0' to 0.5'	
X		Washington Exit	Head over weir 1.0' to 1.3'	
X		Washington Count Station Differential	0.0' to 0.5'	

Comments: Debris loads were very light to light near the Oregon exit and minimal to very light near the Washington exit. Aquatic vegetation continued to be an issue. The general maintenance staff cleaned the picketed leads frequently, including the on weekend. Also, the crew was called in at night to clean the ladders' picketed leads on September 11 and 12. The ladders' picketed lead differential alarm worked well. At times, during cleaning, the ladders' exit controls had to be switched to manual mode.

At the Washington exit, the regulating weir tripped an alarm and was reset on September 11 and 15.

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 1.6 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: There is nothing to report.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
Yes			WA shore Wasco County PUD Turbine Unit
	Yes		WA shore Wasco PUD Bypass
		Yes	Oregon shore Fish Pump 1, OOS to November 19.
Yes			Oregon Ladder Fish Pump 2, Blade angle: 24°.
Yes			Oregon Ladder Fish Pump 3, Blade angle: 24°.
Yes			OR North Powerhouse Pool supply from juvenile fishway

Comments: Repairs to fish pump 1 continued. There are no problems to report.

Juvenile Fish Passage Facility

The sampling season, consisting of alternating days of primary and secondary bypass, continued. No sampling occurred from September 13 to 18 (see 20MCN13 MFR). Three days (September 13 at 0700 to September 14 at 0700 hours, September 15 at 0700 to September 16 at 0700 hours, and September 17 at 0700 to September 18 at 0700 hours) of sampling were missed due to regional wildfires causing hazardous air quality. The next sample will start on September 19 at 0700 hours.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to light.
X			Trash rack differentials measured?	Daily.
X			Trash rack differentials acceptable?	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: Debris loads were minimal to light near the powerhouse and minimal beside the spillway. Incoming debris loads were minimal and consisted mostly of aquatic vegetation. The woody debris and aquatic vegetation continued to move back and forth from the powerhouse to the Oregon shoreline.

No trash rack cleaning or forebay debris removal occurred during this reporting period.

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: ESBS's remained deployed in all units. ESBS camera inspections in units 11 and 12 reveal no problems on September 15.

Daily VBS differential monitoring continued. No high differentials were measured. A total of two screens were cleaned on September 13 and 16. There were no mortalities observed.

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

Yes	No	NA	Item	Number of orifices in service
X			Did orifices operate satisfactory?	42
X			Were the dewaterer and cleaning systems operated satisfactory?	

Comments: Orifices were adjusted for VBS cleaning as required. Due to continued concern for the two side dewatering valves, orifices cycling remained once a day. Also, due to the air quality hazard, the channel was check once a shift From September 13 to 18.

The transition screen cleaning brush remained out of service. The air burst system's zone 5 kept the transition screen clean.

A low and high-water alarm came in on September 11 at 0030 and 0035 hours, respectively. No cause for these alarms was found and the system appeared to be functioning properly. The best assumption is the side dewatering valves, which regulate the channel elevation, had an issue resulting in the alarms. The alarms occurred with the technician on duty in the channel. The valves' functionality does appear to be slowly deteriorating and will continued to be monitored.

Bypass Facility:

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

Comments: The sample gates were only operated on secondary bypass days. There were 72 hours of sampling missed as described above. The PIT-tag system remained out of service as there are no studies requiring its use.

This week, 28 juvenile lamprey and 32 smolts were bypassed during secondary bypass. Juvenile shad were the predominate species examined in the sample.

Smoke from the wildfires entered the facility's buildings to some extent.

TSW Operations: The TSW in bay 19 remained out of service. The TSW in bay 20 became operational September 10 for the adult steelhead top spillway weir (TSW) passage efficiency study and as required by the new Biological Opinion on September 15. The TSW will be operated per the study plan.

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
113.3	91.0	1.0	0.0	68.2	66.3	6.0	5.0

Comments: The above data was supplied by the smolt monitoring staff except water clarity, which came from the control room. The spill recorded above was for the TSW study.

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections will occur on December 1.

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
Sept 11	Spill	15	0	0	0
	Powerhouse	5	0	0	0
	Outfall	3	38	0	0
Sept 12	Spill	NA	NA	NA	NA
	Powerhouse	NA	NA	NA	NA
	Outfall	NA	NA	NA	NA
Sept 13	Spill	NA	NA	NA	NA
	Powerhouse	42	0	0	0
	Outfall	0	37	0	0
Sept 14	Spill	NA	NA	NA	NA
	Powerhouse	22	1	0	0
	Outfall	0	48	0	0
Sept 15	Spill	NA	NA	NA	NA
	Powerhouse	60	0	0	0
	Outfall	1	50	0	0
Sept 16	Spill	NA	NA	NA	NA
	Powerhouse	34	0	0	0
	Outfall	8	42	0	0
Sept 17	Spill	59	8	0	0
	Powerhouse	5	0	0	0
	Outfall	2	53	0	0

No terns, pelicans or grebes were observed on project.

Tailwater zones were very difficult to observe most of the week due to heavy smoke cover.

At times, gulls were observed feeding in the powerhouse zone along with some roosting. The gull feeding activity occurred very quickly. One cormorant was observed.

When visible, in the spillway zone, gull and cormorants were observed. The birds were roosting around the spill basin with some feeding activity, especially during TSW use. Again, feeding activity was very short.

At the juvenile bypass outfall, gulls and cormorants were noted attempting to feed. Most of the gulls and cormorants were roosting on the bypass pipe, which appears to be a favored roosting location especially for cormorants.

In the forebay zone, an occasional gull, cormorant or osprey was observed. The roosting rocks along the Washington shoreline were not observable due to smoke. Finally, a flock of gulls was observed outside the counting zone, at times.

The lasers on the navigation lock wing wall and on the juvenile bypass outfall walkway remained on. The smoky conditions reduced the effectiveness of the lasers and their battery rechanging efficiencies. The wing wall laser appeared to reduce feeding at the outfall and roosting along the lock wall when visible. However, more deterrent may be required along the outfall and wing wall. Hopefully, when it arrives, the new laser will discourage roosting on the outfall pipe.

The bird distress calls deployed along on the navigation lock wing wall appeared to be somewhat successful, but roosting continued to occur. The second large distress call deployed on the juvenile facility barge loading dock also appeared to be somewhat effective. Again, more deterrents may be required.

There is no active hazing program currently.

A future LRAD test has not yet been scheduled.

Invasive Species: The next mussel station examinations will occur in late September. No Siberian prawns were observed in this week's sample. The yearly total is two prawns.

Fish Rescue/Salvage: None occurred this week.

Research: Pacific Northwest National Laboratory (PNNL) began the adult steelhead TSW passage efficiency study on September 14. The TSW was first opened on September 15.

Project: Ice Harbor
Biologist: Ken Fone
Dates: September 11, 2020 – September 17, 2020

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	Hard	Soft
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

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

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
3	5/3/19	0641	---	---	Turbine runner replacement and stator rewind

Comments: Unit 1 tripped off at 1652 hours on September 16 due to a governor blade response issue. The unit was restarted at 1701 hours on September 16.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on September 14, 15, and 16.

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’	
X			South Shore Channel Velocity	1.5 – 4.0 fps	
		X	North Powerhouse Entrance (NFE-2) Weir Depth	≥ 8.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Shore Entrance (NEW-1) Weir Depth	≥ 8.0’ or on sill	
X			North Shore Channel/Tailwater Differential	1.0’ – 2.0’	

Comments: None.

Auxiliary Water Supply System (AWS):None.

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
6 pumps	2 pumps		Status of the 8 South Shore AWS Pumps
2 pumps	1 pump		Status of the 3 North Shore AWS Pumps

Comments: Three of the operating south shore AWS pumps and both operating north shore AWS pumps loss power at 1652 hours on September 16. This occurred when station service supplied from unit 1 was loss. The three south shore pumps were restarted at 1714 hours on September 16. One north shore pump was restarted at 1719 hours and the second north shore pump was restarted at 1721 hours on September 16.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Average of 4 square yards
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0-3%
	X		Any oil seen in gatewells?	

Comments: None.

STSs/VBSs:

Yes	No	NA	Item
X			STSs deployed in all slots and in service for available units?
	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: 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.

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

Fish Sampling: Fish sampling is done for the year at Ice Harbor Project.

Removable Spillway Weir (RSW): Voluntary spill for fish is not occurring in September.

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
26.6	16.7	0	0	68	66	8.0	6.8

*Unit 1 scroll case temperature.

Comments: None.

Other

Inline Cooling Water Strainers: Monthly strainer inspections for lamprey will resume in December.

Avian Activity: There were low numbers of piscivorous birds seen around the project. Most of the birds were observed in the vicinity of Eagle Island.

Invasive Species: No new exotic species have been observed.

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: Chuck Barnes and Raymond Addis
Dates: September 11 - 17, 2020

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	Hard	Soft
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

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

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
Unit 2	7/15/2019	0720	9/25/2020	ERTS	Annual, Draft Tube Liner
Unit 4	8/10/2020	0730	9/25/2020	ERTS	Annual, Blade Seals, Headcover Pump

Comments: None.

Adult Fish Passage Facility

The adult fishways were inspected by Corps and EAS/Anchor QEA biologists on September 11, 12, 13 and 16.

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:
North Shore Entrance (NSE-1) Weir depth was out of criteria on the September 16 inspection with a reading of 7.9 feet. Powerhouse operator was informed and adjusted the system.
South Powerhouse Entrance (SPE-1) Weir was on sill during all inspections with readings of 7.1, 7.0, 7.5 and 6.8 feet respectively.
South Powerhouse Entrance (SPE-2) Weir was on sill during all inspections with readings of 7.1, 7.0, 7.5 and 6.8 feet respectively.
South Shore Entrance (SSE-1) Weir depth was out of criteria on the September 13 and 16 inspections with readings of 7.6 and 7.7 feet respectively. The weir was not on sill during the inspections and was found in manual mode on September 16. The weir was placed at sill.
South Shore Entrance (SSE-1) Weir was on sill during the September 11 and 12 inspections with readings of 7.8 and 7.7 feet respectively.
South Shore Entrance (SSE-2) Weir opening was out of criteria on the September 16 inspection with a reading of 7.3 feet. The weir was found to be in automatic mode and not set at 437.0 feet. The weir was returned to manual operation and returned to 437.0 feet.
South Shore Channel/Tailwater differential was out of criteria on the September 16 inspection with a reading of 0.9 feet. This was caused by SSE-2 position.

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)	55 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 cycle mode due to average sub-yearling Chinook and sockeye lengths being greater than 120 mm.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	18
	X		Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Collection Facility: The Juvenile collection facility was watered up at 10:00 on March 26.
Collection into raceways for transport ended at 1500 on June 21. The facility went into secondary bypass with daily condition sampling at that time.
A total of 158 fish were collected during this reporting period with total of 158 bypassed back to the river.

Transport Summary: Alternate day barge transport ended June 21.

Spillway Weir: Summer spill ended on August 31 at 23:59:59.

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
26.2	17.3	0	0	67.5	66.5	4.5	3.9

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on August 10. No live fish or mortalities were recovered.

Avian Activity: Highest counts of foraging piscivorous birds in tailrace (SWT1+PH1+PH2) at Lower Monumental Dam.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
9/11/2020	1100	0	8	0	0	0
9/12/2020	0930	1	20	0	0	0
9/13/2020	1400	0	5	0	0	0
9/16/2020	1030	0	5	0	0	0

* Table shows tailrace observation conducted during Adult Fish Ladder inspections

Comments: Bird hazing efforts by USDA personnel ended June 2, 2020.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on September 4

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*
9/11/2020	51	102
9/12/2020	18	36
9/13/2020	37	74
9/14/2020	6	12
9/15/2020	32	64
9/16/2020	7	14
9/17/2020	25	50
Total	176	352

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

Fish Rescue/Salvage: No Fish Rescue/Salvage took place during this reporting period.

Research: No research is occurring currently.

Project: Little Goose
Biologists: Scott St. John and Richard Weis
Dates: September 11-17, 2020

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	**Hard**	**Soft**
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Little Goose Unit Outages (OOS) and Return to Service (RTS)

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
5	04/14/17	14:11	03/31/21	17:00	Spider and upper guide bearing repair.
4	08/10/20	03:00	09/17/20	12:46	Unit Annual and 6-year overhaul
6	08/06/20	17:32	09/25/20	17:00	T2 neutral bushing
1	09/16/20	17:26	09/18/20	16:53	T1 line relay over pressure trip
2	09/16/20	17:26	09/18/20	16:53	T1 line relay over pressure trip
3	09/16/20	17:26	09/18/20	16:53	T1 line relay over pressure trip

Comments: T2 remains out of service after Doble testing, forcing Unit 6 out of service. A bad neutral bushing was found which will need replaced before returning T2 to service. Unit 4 returned to service on September 17 at 1246. Units 1, 2, and 3 ran speed – no load from 17:26 until 18:00 on 09/16/20 at which time spill gates 2 through 6 were activated. Units 1 and 2 were brought back on and spill ceased at 16:53 on 09/17/20.

Adult Fish Passage Facility

Little Goose fish facility staff inspected the adult fishway on September 14, 16 and 17.

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 Pump in Service		
X			Fish Ladder Exit Cooling Water Pumps Operating Satisfactorily		

Comments: Adult ladder cooling pump were shut down for the season on September 16.

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. Project staff struggled to maintain entrance criteria at the NSE during Spring spill. The fish control system still has a faulty I/O module for the NSE weirs and which is scheduled to be repaired after spill ends. Sub surface channel velocity was performed on September 05 and averaged 1.9fps.

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: AWS pump #2 tripped off with power outage on September 16 and was restarted as soon as discovered.

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 approximately 11,500 square feet of floating woody debris currently inside the trash shear boom in the forebay. Drawdowns were performed on September 10 on Units 1 and 2 and were in criteria.

ESBS/VBS:

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
	X		ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
	X		VBSs differentials checked this week?
		X	VBSs differentials acceptable?
	X		VBSs inspected this week?

Comments: VBS differentials were performed on September 10 on Units 1 and 2 and were in criteria.

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: The airline for the backflush system on orifice 1C1 was found broken and will need repaired once the juvenile channel is dewatered for winter maintenance (MFR 20 LGS 12). During prior ESBS/VBS inspections, an issue with the orifice liner in 6C2 was observed (MFR 20 LGS 14) and will need repaired during winter maintenance.

Collection Facility: Collection for condition sampling began on April 1. The facility continues to collect for daily sample and was placed in secondary bypass on June 21. Collection for every other day truck transport began on August 01 with the first truck leaving LGS on August 03.

Transport Summary: The JFF began collecting for truck transport on August 01. The collection and transportation facility operated within criteria this report period. A total of 1,614 fish were collected. Of the fish collected, 132 were sample or facility mortalities, 4 were by-passed and 1,411 were transported by truck to release site near Bonneville Dam. The descaling and mortality rates were 1.1% and 8.08%, respectively. There were 0 adult lamprey removed from the separator this report period.

Spillway Weir: Summer spill operations began on June 21. The ASW was closed for the season on August 07. Spill operations ended on September 01.

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
24.9	17.1	13.6	0	66.7	66.1	6.0	5.8

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainers were inspected and results submitted to district operations every other week for FPOM distribution through mid-June per Fish Passage Plan (FPP) requirements.

Avian Activity: Daily piscivorous bird counts at Little Goose Dam began on April 1.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
9-11	0800	22	8	0	0
9-12	1240	2	14	0	0
9-13	0745	8	3	0	0
9-14	1430	36	12	0	0
9-15	1215	32	11	0	0
9-16	0815	12	6	0	0
9-17	0900	34	7	0	0

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 EAS/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*
9-11	544	544
9-12	618	618
9-13	573	573
9-14	475	475
9-15	805	805
9-16	1,349	1,349
9-17	448	448
Totals	4,812	4,812

Gas Bubble Trauma (GBT): GBT monitoring has finished for the season.

Fish Rescue/Salvage: None.

Research: The Nez Perce Tribe (NPT) ended steelhead kelt collection on June 25.

Project: Lower Granite
Biologists: Elizabeth Holdren and David Miller
Dates: September 11-17, 2020

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	**Hard**	**Soft**
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
4	Aug 24	0700			Annual Maintenance

Comments:

Adult Fish Passage Facility

Lower Granite and EAS/Anchor QEA staff inspected the adult fishway September 11, 12, 14, and 16.

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: Adult fish ladder temperature control system remains in operation.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
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	≥ 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’	
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	6.7, 6.7
			North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	Closed
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.9
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.0, 1.1, 1.1

Comments: FOGs 1 and 10 are in operation. The issue with the control system reading being in sync with local readings requires the electrical crew investigation of programming and calibration.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
Yes			AWS Fish Pump 1
Yes			AWS Fish Pump 2
No		OOS guide bearing	AWS Fish Pump 3

Comments: AWS pump 3 remains in standby until LWG mechanical is able to perform standard testing will require all AWS pumps be removed from service for 4 hours while stoplogs are swapped.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Forebay debris has not created any fish passage issues this season. Some woody debris observed in the forebay this season is likely due to the failure in the upriver two sections of the forebay debris boom. Though this has not created a problem, repairs are recommended to prevent further damage to the boom and potential for additional debris in the powerhouse forebay and on unit trashracks.

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	
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: Gatewell differentials were measured on September 14.

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: The ESBS is dogged off in gatewell slot 4A during the annual maintenance outage.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory.	18-24
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: Juvenile collection channel water level and flow is being adjusted using 10” orifices depending on forebay elevations. The 14” orifice in gatewell slot 4C was removed from service June 10 to prevent fish injury due to a damaged flange. The mechanical staff will be making repairs to the 14” orifice in slot 4C during the winter outage. The 10” orifice remains in operation and with no issues. A bulkhead was installed, and the orifices were closed in slot 4A to facilitate the unit 4 annual maintenance.

Collection Facility: The sample rate is being adjusted daily based on fish passage numbers. Collection for truck transport began at 0700 hours August 1.

Transport Summary: Truck transport for the week of September 11-17 totaled 962 fish transported in four trips.

Spillway Weir: No spill.

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
25.4	20.4	0.6	0	65.0	63.0	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 7,086 Siberian prawns collected in the sample and euthanized for disposal.

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
Sept 11	0856	1	24	0	0
Sept 12	1310	0	0	0	0
Sept 13	1426	1	2	0	0
Sept 14	1215	12	24	0	0
Sept 15	0715	4	22	0	0
Sept 16	1340	19	38	0	0
Sept 17	0840	20	34	0	0

Adult Fish Trap Operations: Adult trap sample rate was 18% for NPT and LFH adult Chinook brood stock collection. NOAA personnel resumed daily operation of the adult trap August 26. The total number of fall Chinook salmon trapped and transported during this report week were 447 (358 to LFH and 89 to NPT).

Fish Rescue/Salvage: N/A

Research:

USGS Juvenile Fall Chinook Salmon Growth and Origin

USGS began collection of previously tagged subyearling Chinook utilizing LWG juvenile collection facility SbyC system began September 8 and will continue through October 31. Previously PIT tagged fish are diverted to the SbyC tanks, weighed, measured, GSI sampled, scanned for PIT tag code, recovered from anesthetic, and released back to the river. The objective of this project is to estimate the growth of PIT-tagged subyearling Chinook salmon from the Clearwater River to Lower Granite Dam.

National Marine Fisheries Service (NMFS) Ancillary Adult Passage Monitoring:

Fish that were PIT as juveniles at LWG are monitored as returning adults through the river and LWG facility. For each returning adult the following is estimated; 1) passage time between sets of detection PIT tag coils, 2) whether the fish was handled at the adult trap, 3) duration the fish was held at the adult trap, 4) overall passage time from ladder entrance to exit, 5) whether the turnpool gate was open or closed during passage. This will be the last year of this evaluation.

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.