U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#17-2020

Project: McNary
Biologist: Bobby Johnson and Denise Griffith
Dates: June 19 to 25, 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**
5	5/23/19	0943	7/13/20	NA	Turbine blade packing.
2	6/22	0630	6/25	1255	Annual maintenance.
13 & 14	6/22	0930	6/22	1230	Trash rack racking.
1	6/23	1000	6/23	1030	ESBS camera inspections.

Comments: The hard one percent peak efficiency constraint continued. There is nothing more to report.

Adult Fish Passage Facilities

McNary fisheries biologists performed measured inspections of the adult fishways on June 19, 21 and 24. Adult fish counting and video review of night time lamprey passage continued.

Fish Ladder Exits:

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

Comments: Debris loads were very light to light near the Oregon and the Washington exits. The Oregon exit traveling screens debris trough was cleaned as required. Aquatic vegetation began to become an issue at the Washington exit. The general maintenance staff cleaned the picketed leads almost every day.

At the both exits, multiple alarms were reset on June 21.

At the Oregon exit, multiple alarms were again reset on June 24. Also, the regulating weir set point was adjusted on June 21 to 23.

At the Washington exit, the regulating weir set point was adjusted on June 23.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			North Oregon Entrance Head Differential	1.0' – 2.0'	
X			NFEW2 Weir Depth	≥ 8.0'	
X			NFEW3 Weir Depth	≥ 8.0'	
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
X			SFEW1 Weir Depth	≥ 8.0'	
X			SFEW2 Weir Depth	≥ 8.0'	
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 1.7 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: None.

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 September 12.
Yes			Oregon Ladder Fish Pump 2, Blade angle: 24°.
Yes			Oregon Ladder Fish Pump 3, Blade angle: 27 to 28°.
Yes			OR North Powerhouse Pool supply from juvenile fishway

Comments: None.

Juvenile Fish Passage Facility

The sampling season, consisting of alternating days of primary and secondary bypass, continued. There were two interruptions in the schedule. The system was in primary bypass from June 23 at 1500 hours to June 24 at 0700 hours and from June 25 at 1500 hours to June 26 at 0700 hours due to screen cleaning brush issues in the channel, which will be discussed below. There was 32 hours of sampling missed.

Forebay Debris/Gatewell Debris/Oil:

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

Comments: Debris loads were very light to moderate along the powerhouse. Debris near the spillway would also be described as light to moderate. Incoming debris loads were minimal to light. Much of the debris appeared to dissipate. Debris removal has not yet been required.

Trash rack cleaning were cleaned in units 13 and 14 on June 22. Twenty yards of debris, mostly tumbleweeds, was removed. No fish were observed in the debris.

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, except for unit 5, which is out of service. ESBS camera inspections in units 1 and 2 revealed no problems on June 23. The ESBS control system panel view for unit 10 was not functional from June 23 to 25. However, the ESBS's in unit 10 functioned properly. This issue may have been related to bus switches.

Daily VBS differential monitoring continued. No high differentials were measured. A total of 10 screens were cleaned on June 20 and June 23 to 25. One subyearling smolt mortality was observed.

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

Yes	No	NA	Item	Number of orifices in service
X			Orifices operating satisfactory?	42
	X		Dewaterer and cleaning systems operating satisfactory?	

Comments: Orifices were adjusted for VBS and trash rack cleaning as required. Orifice operators were repaired as needed.

There was a brief power outage in the channel due to bus switching on June 21 at 1712 hours. No problems occurred.

The transition screen cleaning brush remained out of service from last week. The A beam limit switch had been moved to eliminate false position indications, which caused the brush to fail on the D beam. However, we did not test the brush over the weekend. The transition brush was operational from on June 22 at 0739 to 2030 hours but tripped a timing alarm due to the side screen brush alarming. Therefore, the transition brush was turned off. The brush was again operational on June 23 at 0657 to 1304 hours. However, the device again skipped past beams, stalled on the D beam and was removed from service. The A beam limit was again adjusted. Also, that day, the mechanics examined the hoist that moves the brush laterally between the four beams. The brush was operated once on June 24 at 0530 hours and returned to service from 0745 to 1640 hours until the side screen brush alarm again resulted in a transition brush cycle timing alarm. The brush was also operated that evening and turned back off. The transition brush was again operational on June 25 from 1245 to 1537 hours. With the side brush issues and the transition brush not functioning when the side brush was out of service resulting in a timing alarm, it was determined to leave the transition brush off over the weekend. We are not sure it is fully functional, however, zone 5 of the air burst system did keep the transition screen clean.

Last week, the rectangular screen brush raise limit switch was moved to eliminate false position indications. Similar to last week, the brush was noted to be low on the device on June 21. The mechanics examined the brush retraction system and repositioned the brush with the channel hoist on June 24. The electricians also examined the raise limit switch. However, afterward, the brush appeared to slowly lower again. We will continue to monitor the issue. At times, it appeared the brush did not run consistently in automatic mode when other brushes were out of service from June 21 to 22. However, after this, the brush did appear to cycle reliably in automatic mode. The rectangular brush tripped one timing alarm on June 21 at 1554 hours, which was reset.

The side screen cleaning brush failed to park properly on June 20 at 1435 hours, tripping an alarm. The brush and alarm were reset immediately. Later, the brush would not park properly and was removed from service at 2030 hours. The brush was returned to service on June 21 at 0638 hours. The brush tripped another alarm and was reset at 1554 hours. The brush was removed from service and operated once on June 22 at 0015 hours. At first, a debris

blockage along the lower guide or the brush rotation actuator was thought to be the problem but later we suspected the limit switch for parking the brush. The brush was returned to service from 0721 to 1643 hours on June 22. However, the brush was again found not parking properly and was removed from service. During the day, the electricians worked on the limit switches and the mechanics examined the actuator. The side brush was returned to service on June 23 at 0638 hours but would not park properly in automatic mode. The brush was removed from service immediately. It was determined that the upstream limit was not turning off consistently, which caused false position indications when the brush tried to park downstream. The limit was moved to eliminate the false indications. The brush was returned to automatic operation at 1300 hours. However, the brush again failed to park properly and was removed from service on June 24 at 1557 hours. The biologist came in and ran the brush at 2150 hours. The night shift technician and assistant biologist ran the brush on June 25 at 0000 and 0530 hours, respectively. Later in the day, the electricians and mechanics again examined the side brush, with the electricians again moving the upstream limit switch. The brush returned to service at 1251 hours but was turned off at 1537 hours for the weekend, when it will only be operated by turning it back on in manual mode. Automatic mode will resume on June 28. During the week, in order to park the brush after an alarm, manual mode, which is using each individual directional switch, had to be used. Depending on the brush sequential cycling program, the brush had to be restart in either automatic or manual mode and took several attempts at times.

As mentioned above, the brush sequential cycling program is still an issue of concern. When one brush is turned off, it is hard to determine when or if the other brushes will cycle. Therefore, during the above issues, we had the fisheries staff constantly monitoring the collection channel. Also, brush operations were reviewed.

The brush cycle sequence was set to run after every two air zone cycles (five zones in about two hours) from June 24 to 25 in order to fully test the brushes. After the test, the brush cycle sequence was returned to after every four air zone cycles (about four hours).

For the rectangular/transition screens air burst system, the biologist found zone 1 turned off on June 21 at 1119 hours. The zone was last noted running at 0111 hours. We have not determined how the zone was turned off. However, all staff members were reminded to be careful when using the control system panel view.

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. Sample collections occurred from 0700 to 1500 hours on June 23 and 25. The sample rate was higher during the 8-hour sample days. Sampling was reduced to insure a fisheries staff member could respond to collection channel alarms 24/7. However, GBT monitoring was able to continue. The PIT-tag system remained out of service as there are no studies requiring its use.

One power outage due to a bus switch had no adverse effects at the facility on June 22 at 1730 hours.

This week, 1,460 juvenile lamprey and 73, 042 smolts were bypassed during secondary bypass. Subyearling Chinook and juvenile lamprey remain the major species in the samples.

Two subyearling Chinook mortalities were removed from under the primary bypass gate on June 20, for a total of three subyearling Chinook for the season. This issue will be examined during the next winter outage.

TSW Operations: The TSW's remained out of service. The standard gates in bays 19 and 20 are attached to a hoist and crane, respectively.

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
308.7	284.4	179.7	155.9	61.4	58.4	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 summer spill program continued, with 57 percent of the flow being spilled. There are no problems to report.

All water temperature monitoring probes are now in place except for 5B gatewell slot due to an ESBS being stored in the slot. Daily monitoring and reporting throughout the juvenile passage facility continued. The smolt monitoring staff will publish weekly results in a separate report, which will include any issues with the probes.

Other

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur on July 7.

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
June 19	Spill	3	0	6	22
	Powerhouse	0	0	0	1
	Outfall	0	0	0	0
June 20	Spill	3	0	11	17
	Powerhouse	0	0	0	2
	Outfall	0	0	0	0
June 21	Spill	3	0	37	22
	Powerhouse	0	0	0	1
	Outfall	0	2	0	0
June 22	Spill	1	0	4	22
	Powerhouse	0	0	0	1
	Outfall	0	0	0	0
June 23	Spill	2	1	6	12
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
June 24	Spill	0	0	16	15
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
June 25	Spill	0	0	2	5
	Powerhouse	0	0	0	7
	Outfall	0	0	0	0

Only pelicans were observed in the powerhouse zone along the south edge below the separator building during the day. At night, large numbers of pelicans were noted there.

In the spillway zone, gull numbers remained low. Cormorants were present but were difficult to observe. Pelican and tern numbers remained fairly high. All birds were feeding, with the pelicans working along the navigation lock wing wall.

At the juvenile bypass outfall, only two cormorants were noted feeding on one day. No other bird species were noted. High flows and bird behavior may have more to do with the absence of birds than hazing activities.

In the forebay zone, zero to 22 grebes were observed, along with an occasional gull, tern, pelican, cormorant or osprey. Also, pelicans in moderate numbers along with a few gulls and cormorants were noted on the roosting rocks along the Washington shoreline.

No pelicans were observed inside the Oregon ladder exit this week. The exclusion appears to be working as a few pelicans were observed just outside the exit at times.

No grebes were observed in the gatewell slots or the juvenile collection channel.

The lasers on the navigation lock wing wall and on the juvenile bypass outfall walkway were returned to service on June 22 as part of the evaluation study. However, due to low bird numbers and high flows, the lasers cannot be evaluated effectively at this time. Issues with the outfall laser are still being addressed.

The bird distress calls deployed along on the navigation lock wing wall appeared to be successful. No decision has been made on where to install the second large distress call. The forebay grebe distress call remained deployed and appeared somewhat effective. However, we feel more volume is required.

USDA Wildlife Services continued hazing with two shifts from shore. Boat hazing trips occurred Tuesday through Thursday. Almost all efforts were concentrated in the tailwater area. However, the grebes in the forebay zone were also hazed from shore.

Invasive Species: The next mussel station examinations will occur on June 28. No Siberian prawns were observed in this week's samples. None have been observed so far this season.

Fish Rescue/Salvage: None occurred this week.

Research: The gas bubble trauma (GBT) examinations occurred on June 19 and 23. No smolts were observed with signs of GBT. Examinations will continue twice a week.

Project: Ice Harbor
Tim DeKoster (Fisheries Tech) & Ken Fone (Fisheries Biologist)
Dates: June 19, 2020 – June 25, 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: Units 6, 5, 4, 2, and 1 were taken out of service one at a time on June 22nd, 23rd, and 24th for STS inspections.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on June 22nd, 24th, and 25th.

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	1.0, 1.2, 1.2 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 velocity was lower than the 1.5 fps (see chart above) on all three inspections. Higher tailwater levels due to the increased river flow may have slowed down the opposing channel velocity of water flowing through the junction pool, where the velocity meter is located.

Auxiliary Water Supply (AWS) System:

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: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Average of 8.6 square yards
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 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: The STSs were switched to continuous-run mode on May 18th, due to the presence of subyearling Chinook in the Ice Harbor fish sample with an average fork length of less than 120 mm. Unit 6, 5, 4, 2, and 1 STS inspections and unit 2 VBS inspections were conducted June 22nd through June 24th. There were no problems found.

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: The mechanical screen cleaner was turned off on the morning of June 22nd, due to a frayed travel cable that slipped off of two of its sheaves. The frayed cable was replaced with a new cable and the screen cleaner was returned to service on the morning of June 23rd.

Juvenile Fish Facility: The Juvenile Fish Facility is being operated in primary bypass mode, except when collecting fish for sampling.

Fish Sampling: Please see the tables below for a summary of the fish sampling results for June 22nd and 25th. For Ice Harbor Dam fish sampling methodologies, please refer to 2020 Fish Passage Plan Chapter 6 (Ice Harbor Dam). Fish sampling is being conducted on Mondays and Thursdays each week this year from April 2nd to July 16th.

Fish condition sampling results at Ice Harbor Dam:

Date: June 22nd

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	1	0	0	0
Chinook yearling unclipped	7	0	0	0
Chinook subyearling clipped	55	1	0	0
Chinook subyearling unclipped	66	1	0	0
Steelhead clipped	1	1	0	0
Steelhead unclipped	1	0	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	131	3	0	0

Date: June 25th

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	0	0	0	0
Chinook yearling unclipped	2	0	0	0
Chinook subyearling clipped	11	0	0	0
Chinook subyearling unclipped	16	0	0	0
Steelhead clipped	1	0	0	0
Steelhead unclipped	3	1	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	33	1	0	0

Removable Spillway Weir (RSW): Voluntary spill for fish passage is occurring.

River Conditions

River conditions at Ice Harbor Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
94.9	81.4	70.6	45.0	60	58	6.6	4.6

*Unit 1 scroll case temperature.

Comments: None.

Other

Inline Cooling Water Strainers: The next monthly turbine cooling water strainer inspections will occur in July.

Avian Activity: There were low to high numbers of piscivorous birds seen around the project (see table below). The higher number of birds on June 20th and 21st were counted before bird hazing started for the day. Land-based hazing of piscivorous birds for 8 hours per day is occurring. There were very few gulls and cormorants to be hazed.

On June 21st the number of gulls and cormorants counted (14) exceeded the double of the most recent 3-year average daily count of gulls, cormorants, and terns for the same week (see the Ice Harbor Incident Response Section 6.4 of Appendix L of the Fish Passage Plan). However, the 3-year average daily count for the reporting week was only 4.1 birds. The cormorants were not concentrated in one particular location and half of them observed were not foraging, so the Project Fisheries Biologist was not overly concerned with their presence.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
June 19	0	0	0	0	14
June 20	0	0	0	0	43
June 21	2	12	0	0	69
June 22	0	0	0	0	4
June 23	---	---	---	---	---
June 24	0	1	0	0	12
June 25	3	3	0	0	1

Invasive Species: No new exotic species have been discovered.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by fisheries management personnel, frozen and properly disposed in a landfill. Daily and total Siberian prawn counts at Ice Harbor Dam for this reporting period are shown below.

Number of Siberian prawns in the sample at Ice Harbor Dam.

Date	Sample (euthanized)	Collection*
June 22	3	3
June 25	0	0
Totals	3	3

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

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

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

If you have any questions please contact the Ice Harbor Fish Facility Biologist Ken Fone for more information and updates.

Project: Lower Monumental
Biologists: Chuck Barnes and Raymond Addis
Dates: June 19 - 25, 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	7/17/2020	ERTS	Annual, Draft Tube Liner
Unit 4	6/24/2020	0700	6/24/2020	1000	Hub Tapping

Comments: None.

Adult Fish Passage Facility

The adult fishways were inspected by Corps and EAS/Anchor QEA biologists on June 19, 20, 21 and 23.

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		X	South Powerhouse Entrance (SPE-1) Weir Depth	≥ 8.0’ or on sill	
X		X	South Powerhouse Entrance (SPE-2) Weir Depth	≥ 8.0’ or on sill	
X			South Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
X		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 June 20 inspection with a reading of 7.4 feet.
North Shore Entrance (NSE-2) Weir depth was out of criteria on the June 20 inspection with a reading of 7.4 feet. Operator was notified and system was adjusted.
South Powerhouse Entrance (SPE-1) Weir was on sill during all inspections with readings of 7.9, 7.4, 7.8 and 8.0 feet respectively.
South Powerhouse Entrance (SPE-2) Weir was on sill during all inspections with readings of 7.9, 7.4, 7.8 and 8.0 feet respectively.
South Shore Entrance (SSE-1) Weir was on sill during the June 19, 20 and 23 inspections with readings of 7.9, 7.1 and 8.6 feet.

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)	14 yds^2
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 20%
	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 until 1515 on May 20 when they were changed to continuous-run mode due to average sub-yearling Chinook 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
	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.
Transport Summary: Alternate day barge transport ended with the June 21. A total of 9,812 fish were collected with 3,128 fish being transported and 7,428 being bypassed. .

Spillway Weir: RSW went into service at 0001 on April 3.

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
90.3	78.7	64.3	17.0	60.1	58.5	5.3	3.9

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on June 9. No live fish were recovered. Mortalities included 4 Chinook salmon smolts and 238 juvenile lamprey.

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

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
6/19/2020	1300	0	0	0	0	0
6/20/2020	1130	0	0	0	0	0
6/21/2020	1230	1	0	0	0	1
6/22/2020	1240	3	1	0	0	0
6/23/2020	1300	0	1	0	0	0
6/24/2020	1300	0	0	0	0	0
6/25/2020	1100	0	0	0	0	0

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 June 7.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by PSMFC and EAS/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*
6/19/2020	1	2
6/20/2020	0	0
6/21/2020	1	4
6/22/2020	2	20
6/23/2020	0	0
6/24/2020	3	12
6/25/2020	1	10
Total	8	48

*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 at this time.

Project: Little Goose
Biologists: Scott St. John and Richard Weis
Dates: June 19-25, 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		11RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
5	04/14/17	14:11	03/31/21	17:00	Spider and upper guide bearing repair.

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility staff inspected the adult fishway on June 21, 22 and 24.

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		

Comments: Adult ladder cooling pump was started on June 22 at 1035.

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 have struggled to maintain entrance criteria during spring spill. The fish control system still has a faulty I/O module for the NSE weirs and is currently being repaired. The NSE weirs are in criteria and rest about 6 feet below tailwater according to manual measurement. Subsurface water velocity was measured on June 6 and averaged 2.2 feet per second.

Auxiliary Water Supply System:

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

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

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

Comments: There is approximately 200 square feet of floating woody debris currently inside the trash shear boom in the forebay. Drawdowns were performed on June 25 on units 1, 2, 3 and 4 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 June 25 on units 1, 2, 3 and 4 and were in criteria.

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 airline for the backflush system on orifice 1C1 was found broken and will needed repaired once the juvenile channel is dewatered for winter maintenance (see 20LGS12 MFR).

Collection Facility: Collection for condition sampling began on April 1. The facility continues to collect the daily sample, but was placed in secondary bypass on June 21.

Transport Summary: Everyday barge transport began on April 24 and ended on May 18. Every other day barging started with the first barge leaving on May 20. Last barge of the season left LGS on June 21. The JFF is collecting for sample every day and is in Secondary By-pass. The collection and transportation facility operated within criteria this report period. A total of 28,557 fish were collected. Of those collected, 8,311 were transported via barge and 21,034 were bypassed back to the river. The descaling and mortality rates were 0.6% and 0.08%, respectively. There was 1 adult lamprey removed from the separator this report period and released upstream of the powerhouse. Collection for truck transport is scheduled to begin on August 15.

Spillway Weir: Summer spill operations began on June 21 with the ASW crest height set in the high position.

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
91.6	78.3	58.3	24.5	59.9	58.2	5.3	3.3

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainers are being inspected and results submitted to district operations every other week for FPOM distribution.

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
6-19	1300	0	0	0	2
6-20	1000	1	2	0	0
6-21	1230	0	1	0	0
6-22	1615	7	0	0	1
6-23	0830	0	0	0	0
6-24	0800	0	0	0	0
6-25	0800	0	1	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*
6-19	3	15
6-20	15	150
6-21	18	90
6-22	18	90
6-23	11	110
6-24	6	120
6-25	8	160
Totals	79	735

Gas Bubble Trauma (GBT): GBT monitoring was performed on June 28. Of the 4 fish examined, none showed signs of GBT.

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: June 19-25, 2020

Turbine Operation

Yes	No	Turbine Unit Status		
X		All 6 turbine units available for service (see table & comments below for details).	**Hard**	**Soft**
		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**
5	June 20	0751			Annual Maintenance

Comments: None.

Adult Fish Passage Facility

Lower Granite, EAS/Anchor QEA, and ODFW staff inspected the adult fishway June 19, 20, 22, 24, and 25.

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 was brought on line at 1400 hours June 19 in response to forebay temperatures.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
	X		South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	6.9, 7.7, 7.7, 7.0
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	7.0, 7.7, 7.7, 7.0
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	6.9
			North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	Closed
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	2.1
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.4, 1.3

Comments: Depth over weir out of criteria reading are likely due to the gate not completed adjusting to tailwater elevation or related to flex spill operation. FOGs 1 and 10 are in operation. NSE channel tailwater differentials are due to spill volume creating a significant drawdown at the end of the north shore collection channel. North shore collection channel/tailrace continues to be out of criteria with differentials of over 2.0 feet during flex spill operation at the 125% gas cap. Similar to 2019, spring spill operations are impacting the fish ladder control systems resulting

in differences between physical readings at gate and staff gauge locations and automatic control system digital readings resulting in out of criteria readings at the south shore.

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 return to operation is delayed until LWG mechanical crew is able to schedule standard testing that will require all AWS pumps be removed from service for about 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 June 21.

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: Gatewell differentials were measured on June 21.

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.

Collection Facility: The sample rate is being adjusted daily based on fish passage numbers. Collection for transport ended at 0700 hours June 21.

Transport Summary: Barge transport ended June 21.

Spillway Weir: Spring spill and RSW operation began at 0001 hours April 3. LWG transitioned from spring spill to summer spill at 0001 hours June 21.

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
93.8	82.8	66.4	25.0	60.0	55.0	5.0	4.2

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling strainer inspections were conducted on June 25.

Invasive Species: No zebra/quagga muscles were detected on the trap substrate. There was 14 Siberian prawn 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
June 19	1308	0	2	0	2
June 20	1100	0	0	0	0
June 21	1030	0	3	0	9
June 22	1028	6	1	0	5
June 23	1425	0	3	0	4
June 24	1123	1	0	0	0
June 25	1005	2	1	0	1

Adult Fish Trap Operations: Adult trap operations are suspended until further notice due to COVID-19.

Fish Rescue/Salvage: A fish rescue was performed in the scrollcase for Unit 5 on June 20. One juvenile steelhead was rescued and released at Illia Landing. No other fish were encountered.

Research:

Collection for research projects has been suspended until further notice as of March 24 due to COVID-19 with the exception of Kelt collection for NPT.

Nez Perce Tribe (NPT)/U. of Idaho (UI)/Columbia River Intertribal Fisheries Commission (CRITFC) – Kelt Study

This research investigates steelhead kelt physiology and endocrinology to evaluate the feasibility and success of rehabilitating strategies. Selected kelts collected at Granite are transported by NPT to Dworshak National Fish Hatchery for reconditioning and later release as part of this study. Corps biological technicians began collecting kelts off the juvenile fish separator for NPT at 1800 hours March 8 and continues collecting for transport.