U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#10-2021
April 30–May 6, 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.)	**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	12/7	0643	6/15	N/A	Thrust bearing upgrades/Blade seals
7 & 8	5/3	0630	5/4	1139	Transformer T4 work

Comments: The hard one percent peak efficiency constraint and unit priority are being flowed per the 2021 Fish Passage Plan (FPP). RTS dates are subject to change.

Adult Fish Passage Facilities

McNary fisheries biologists performed measured inspections of the adult fishways on May 2, 4 and 6. Fish counting continues.

Fish Ladder Exits:

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

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

Debris loads were minimal near the Washington exit. One regulating weir alarm came in and was reset on May 2.

There are other problems to report.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0' – 2.0'	1.3' to 1.5'
X			NFEW2 Weir Depth	≥ 8.0'	8.1' to 8.2'
X			NFEW3 Weir Depth	≥ 8.0'	8.1' to 8.3'
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.3' to 1.4'
X			SFEW1 Weir Depth	≥ 8.0'	8.2'
X			SFEW2 Weir Depth	≥ 8.0'	8.1' to 8.2'
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 1.9 fps
X			Washington Entrance Head Differential	1.0' – 2.0'	1.1' to 1.2'
X			WFE2 Weir Depth	≥ 8.0'	9.1' to 9.8'
X			WFE3 Weir Depth	≥ 8.0'	9.1' to 9.7'

Comments: There are no problems to report.

Fabrication of the six remaining floating orifice gates 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			18°	Oregon Ladder Fish Pump 1
Yes			18°	Oregon Ladder Fish Pump 2
Yes			18°	Oregon Ladder Fish Pump 3
Yes				OR North Powerhouse Pool supply from juvenile fishway

Comments: There are no problems to report.

Juvenile Fish Passage Facility

Normal sampling season, consisting of alternating days of primary and secondary bypass, continued. There were no interruptions in the sampling schedule this week.

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 and incoming debris loads were minimal near the powerhouse and beside the spillway.

The next trash rack cleaning is scheduled for late May.

There are no problems to report.

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 unit 5, which is OOS. No camera inspections occurred this week. The next inspections will occur in units 11 and 12 on May 18.

Unit 3's ESBS's currently cannot be controlled or communicated with from the control room. Parts have been ordered. For the most part, the unit has been in standby. ESBS brush operation will continue to be monitored when the unit does come online.

Daily VBS differential monitoring revealed no issues and no screens were cleaned. The three VBS's in unit 3 were inspected, with no issues found and no fish observed, on May 6.

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 as required for VBS cleaning. Orifice operators were repaired as needed.

All systems operated satisfactorily. The rectangular screen cleaning brush was noted slowly creeping down in the park position. The electrical staff adjusted the limit switch on May 6. After the adjustment, the biologist returned the brush to automatic mode.

The second hoist on the channel trolley was removed, which will improve overall functionality of the hoist system, this week.

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, no juvenile lamprey and 45,050 smolts were bypassed during secondary bypass. The smolt monitoring staff reports fish data in a separate report.

A camera inspection of the "B" side secondary bypass line occurred on May 5, with no issues found.

Top Spillway Weir (TSW) Operations: The TSW's in bays 19 and 20 remained open. Crane 7 is attached to the TSW in bay 19. The TSW in bay 20 is attached to a hoist.

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
223.5	180.9	146.5	111.5	53.7	52.1	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. The spring spill program continues. Repairs to crane 6 are scheduled to be completed in late May or early June. Both crane 6 and 7's load limit indicators continue to be an issue.

With crane 7 attached to the TSW in bay 19 and with crane 6 still OOS, the gate in bay 2 remained dogged open at four feet.

Other

Inline Cooling Water Strainers: During the cooling water strainer inspections, there were 14 juvenile lamprey mortalities and 14 yearling Chinook smolt mortalities removed. Most of the fish came from units that had been predominately in standby.

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

The laser on the outfall pipe returned to service as part of the study plan on May 1. However, the laser did not appear to be programmed properly. The laser was removed from service as part of the study plan on May 4. The laser was reprogrammed on the evening of May 5. The laser was left on overnight to ensure the program was accepted. The laser was turned back off the morning of May 6.

The navigation lock wing wall laser still concerns the project biologist. The replacement bulbs arrived on project this week. Bulb replacement will be scheduled for the near future. The laser was in service from May 1 to 4 per the study plan.

Evaluation of the lasers will continue.

Two large bird distress calls remain installed on the navigation lock wing wall. One call was found off on May 4 and was returned to service. We do not know when it was turned off.

USDA Wildlife Services daily shore hazing continues. Boat hazing, which began May 3, will occur on Monday, Wednesday, and Friday each week.

In the spillway zone, gulls and a few cormorants were observed. The birds were mostly feeding in the spill flow. Gull numbers appeared to fluctuate with the other bird numbers remaining relatively low.

In the powerhouse zone, no birds were observed.

In the bypass outfall zone, gull numbers remained high. They were mostly roosting on the pipe; however light feeding did occur at times. The Gulls would also pass by while feeding in the spill flow or circling to roost. Cormorants were noted roosting on the juvenile bypass outfall pipe though their numbers continued to decrease. The cormorants continued to feed in very low numbers at the outfall. Five pelicans were noted near the outfall during one observation. Spill flow does appear to reduce feeding and the lasers may have contributed.

In the forebay zone, one pelican and a few grebes were observed. However, outside the zone, gulls, pelicans, ospreys, and cormorants noted. The pelicans and gulls appeared to be staging.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
April 30	Spill	70	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	55	10	0	0	0
	Forebay	0	0	0	0	0
May 1	Spill	56	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	75	9	0	5	0
	Forebay	0	0	0	0	9
May 2	Spill	17	1	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	53	9	0	0	0
	Forebay	0	0	0	0	0
May 3	Spill	120	1	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	55	2	0	0	0
	Forebay	0	0	0	0	0
May 4	Spill	140	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	75	0	0	0	0
	Forebay	0	0	0	0	0
May 5	Spill	20	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	73	0	0	0	0
	Forebay	0	0	0	1	2
May 6	Spill	15	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	33	1	0	0	0
	Forebay	0	0	0	0	1

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

Siberian Prawn: No Siberian prawns were removed or euthanized this week.

Fish Rescue/Salvage: There is nothing to report.

Research: The two examinations for gas bubble trauma (GBT) for the week occurred on April 30 and May 4. No signs of trauma were observed.

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).	**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 4 and 6 were noted to be operating a few MW above the 1% operating efficiency range on the May 4 fishway inspection. The reason for some of the units to be occasionally operating slightly above or below the operating efficiency range is being investigated.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on May 3, 4, and 5.

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 (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
6 pumps	1 pump	1 pump	Status of the 8 south shore AWS pumps
2 pumps	1 pump		Status of the 3 north shore AWS pumps

Comments: South shore AWS pump #7 was out of service from April 7 at 1505 hours to May 3 at 1340 hours to replace the lower gearbox shaft seal. South shore AWS pump #2 was out of service from May 3 at 1400 hours to May 4 at 0835 hours to replace the packing studs. South shore AWS pump #4 and #5 were out of service to replace the lower gearbox seals from May 4 at 0920 hours to May 5 at 1215 hours, and from May 5 at 1230 hours to May 6 at 0700 hours, respectively.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	Average of 5 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.

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	STSs/VBS inspection results acceptable?
		x	VBS differentials checked this week?
		x	VBS differentials acceptable?

Comments: STSs were switched to continuous-run mode on May 4 due to the presence of sockeye in the May 3 sample with an average fork length 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 reduced flow through the orifices. There was no significant debris that came into the separator when the orifices were being backflushed.

The light for orifice 2BN was found to be burned out on May 2. Orifice 2BS was opened in place of 2BN until the light was replaced on May 3.

The recently installed actuator for the water regulating weirs could not be operated automatically because it did not have an analog controller input. An analog controller input was added to the actuator, but it still must be programmed to function properly. In the meantime, the water level in the collection channel is being visually monitored three times per day and the actuator is operated electronically in "local" control to adjust the weirs as needed.

Juvenile Fish Facility: The Juvenile Fish Facility is operating in primary bypass mode except when collecting sample fish.

Fish Sampling: Fish condition sampling is occurring on Mondays and Thursdays each week. See the table below for a summary of the sampling results. One of the chinook mortalities in the May 3 sample exhibited external signs of bacterial kidney disease. The other dead fish did not have any observable maladies. There have been more fish in the samples observed with fungus this season, including 14 fish with fungus in the May 6 sample. Six steelhead in each sample this week were noted to have fin injuries. Seven fish in the May 6 sample had body injuries, most of which were lacerations. On May 10, the Project Biologist requested with Project Maintenance that the debris on the unit trash racks be pushed down with the intake trash rake to see if that reduces the prevalence of fish injuries and descaling.

Fish condition sampling results at Ice Harbor Dam:

Date: May 3

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	65	4	2	0
Chinook yearling unclipped	28	0	0	0
Chinook subyearling clipped	0	---	---	---
Chinook subyearling unclipped	0	---	---	---
Steelhead clipped	65	0	0	0
Steelhead unclipped	8	0	0	1
Sockeye clipped	0	---	---	---
Sockeye unclipped	4	0	0	0
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	170	4	2	1

Date: May 6

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	52	2	0	0
Chinook yearling unclipped	11	1	0	0
Chinook subyearling clipped	0	---	---	---
Chinook subyearling unclipped	0	---	---	---
Steelhead clipped	80	3	0	2
Steelhead unclipped	10	0	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	3	0	0	0
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	156	6	0	2

Removable Spillway Weir (RSW): Voluntary spring 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
82.7	54.7	54.7	35.5	54	54	7.7	7.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: The next turbine cooling water strainer inspections will occur during the week of May 10.

Avian Activity: There were variable numbers of piscivorous birds observed around the project (see table below). The high number of pelicans observed on April 30 were counted early in the morning before bird hazing began for the day (pelicans are not actively hazed, but the noise from the hazing of other birds will sometimes cause them to leave). Land-based hazing of piscivorous birds for 16 hours per day is occurring. Boat-based hazing is occurring for 8 hours per day, 5 days per week. Bird hazing has been effective at dispersing birds away from the dam.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
April 30	24	8	5	0	183
May 1	10	2	0	0	0
May 2	10	2	0	0	0
May 3	8	2	0	0	0
May 4	0	1	0	0	3
May 5	0	0	0	0	0
May 6	2	0	0	0	0

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. 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*
May 3	0	0
May 6	0	0
Totals	0	0

*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.

Project: Lower Monumental
Biologists: Chuck Barnes and Raymond Addis

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	

Comment:

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
Unit 1	5/5/2021	0657	5/5/2021	0920	STS Inspection
Unit 2	7/15/2019	0720	9/02/2021	ERTS	Annual, Draft Tube Liner
Unit 3	5/4/2021	0750	5/4/2021	0920	STS Inspection
Unit 4	5/4/2021	0930	5/4/2021	1100	STS Inspection
Unit 5	5/5/2021	0945	5/5/2021	2115	STS Inspection
Unit 6	5/4/2021	1215	5/4/2021	1400	STS Inspection

Comments:

Adult Fish Passage Facility

The adult fishways were inspected by Corps and EAS/Anchor QEA biologists on April 30, May 1, 2 and 5.

Fish Ladder:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head $\leq$ 0.5’	
X		North Ladder Picketed Lead Differential	Head $\leq$ 0.4’	
X		North Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	
X		South Ladder Exit Differential	Head $\leq$ 0.5’	
X		South Ladder Picketed Lead Differential	Head $\leq$ 0.3’	
X		South Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	

Comments:

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Shore Entrance (NSE-1) Weir Depth	$\geq$ 8.0’ or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 8.0’ or on sill	
X			North Shore Channel/Tailwater Differential	1.0’–2.0’	
		X	South Powerhouse Entrance (SPE-1) Weir Depth	$\geq$ 8.0’ or on sill	
		X	South Powerhouse Entrance (SPE-2) Weir Depth	$\geq$ 8.0’ or on sill	
X			South Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
		X	South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0’	
X			South Shore Entrance (SSE-2) Weir Depth	$\geq$ 6.0’	
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	

Comments:
South Powerhouse Entrance (SPE-1) Weir was on sill during all inspections with readings of 6.4, 6.0, 6.9 and 6.7 feet respectively.
South Powerhouse Entrance (SPE-2) Weir was on sill during all inspections with readings of 6.4, 6.0, 6.9 and 6.7 feet respectively.
South Shore Entrance (SSE-1) Weir was on sill during all inspections with readings of 6.8, 6.4, 6.8 and 6.3 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:

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	16 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:

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 inspected May 4 and 5. All STS's were in good condition. The STS's are running in Cycle-run 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: Dewaterer mechanical screen cleaning brush returned to service April 27.

Collection Facility: Collection into the raceways for transport began at 0700 on April 23.

Transport Summary: Every-day barge transport began on April 24. A total of 30,879 fish were collected with 30,762 fish being transported and 50 fish bypassed back to the river during this reporting period.

Spillway Weir: RSW went into service at 0001 on April 3 with the start of spring spill.

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
78.7	55.4	59.3	36.8	53.0	52.5	5.6	4.2

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on May 5. Live fish included 1 Siberian prawn. Mortalities included 1 juvenile lamprey and 2 juvenile salmon.

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

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
4/30/2020	1300	1	0	0	0	0
5/1/2020	1200	1	0	0	0	1
5/2/2020	1245	0	0	0	0	3
5/3/2020	1149	0	0	0	0	6
5/4/2020	1230	5	0	0	0	3
5/5/2020	1300	4	0	0	0	0
5/6/2020	1100	0	0	0	0	0

Comments: Bird hazing efforts by USDA personnel began on April 1.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on May 2. 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. Total Siberian prawn counts at Lower Monumental Dam for this reporting period are reported below.

Date	Sample (euthanized)	Collection*
4/30 - 5/06/2021	0	0

*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

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	03/31/2022	17:00	Spider and upper guide bearing repair.
6	03/18/21	14:17	03/31/2022	17:00	T2 ground
2	05/04/21	04:04	05/05/21	14:05	86GT brakes did not fully disengage on startup

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 conducted.

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 April 25, 28 and 29.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head $\leq$ 0.5’	
X			Fish Ladder Picketed Lead Differential	Head $\leq$ 0.3’	
X			Fish Ladder Depth over Weirs	Head over weir 1.0’ to 1.3’	
		X	Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder Exit Cooling Water Pumps Operating Satisfactorily		

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0’	
X			South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0’	
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 7.0’ or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	$\geq$ 7.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
	X		North Shore Entrance (NSE-1) Weir Depth	$\geq$ 6.0’ or on sill	2.9
	X		North Shore Entrance (NSE-2) Weir Depth	$\geq$ 6.0’ or on sill	2.9
X			North Shore Channel/Tailwater Differential	1.0’–2.0’	
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.4

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. The NSE weir depths and SSE surface velocity were found out of criteria on May 2. Subsurface water velocity was measured on May 4 at NPE and averaged 3.3 fps.

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)	
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 was approximately 10 square feet of floating woody debris inside the trash shear boom. Oil was observed leaking from the ESBS screen cleaning gearbox into gatewell 5B on April 6. The orifices were closed and cleanup and reporting efforts initiated immediately. Gatewell drawdowns for Units 1, 2 and 3 were conducted on May 6 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 Units 1, 2 and 3 were conducted on May 6 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 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 60,844 fish were collected, of which 60,789 were transported via barge. The descaling and mortality rates were 0.7% and 0.09%, respectively. There was 1 adult lamprey removed from the separator this report period.

Transport Summary: Daily fish transportation via barge began on April 24.

Spillway Weir: Spring spill operations began on April 3 with the ASW in high crest.

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
73.2	48.6	48.4	29.7	54.6	53.3	5.5	4.0

*Ladder temperature.

Other

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

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
4-30	9:30	8	0	0	0
5-1	11:15	0	0	0	0
5-2	12:15	1	0	0	0
5-3	13:00	0	3	0	0
5-4	8:00	22	1	0	0
5-5	9:00	3	0	0	0
5-6	11:30	44	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*
4-30	1	20
5-1	1	10
5-2	0	0
5-3	0	0
5-4	2	20
5-5	1	20
5-6	1	20
Totals	6	90

Gas Bubble Trauma (GBT): GBT monitoring was performed on May 2. Of the 100 fish examined, 1 fish had signs of GBT.

Fish Rescue/Salvage: No fish rescues occurred during this report period.

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

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).	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
5	04/12	0700	05/06	1400	DC low voltage switchgear/Replace ESBS/VBS
1-6	05/04	0833	05/04	1015	300G Line Relay Program Settings

Comments: All units were out of service due to the 300G Line Relay having improper program settings while the electrical crew was performing testing. Unit 2,3,4, and 6 were returned to service at 0910 hours. Unit 1 was kept out of service due to a very high bearing temperature until 1015 hours when it was returned to service and brought back online.

Adult Fish Passage Facility

Lower Granite Biologists and Anchor QEA staff inspected the adult fishway April 30 and May 1, 3, and 5.

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’	0.9
	X		Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder Cooling Water Pumps Operating Satisfactorily		

Comments: Operation of diffuser 14 will remain in manual for the season due to an issue with the elevation sensor.

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’	7.8’, 7.9’
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 8.0’ or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0’ or on sill	
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	0.6’, 0.7’, 0.6’, 0.5”
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	5.2’
X			North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	
X			North Shore Channel/Tailwater Differential	1.0’–2.0’	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: 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. The Project is working with engineers to find a permanent solution to the ongoing channel/tailwater criteria discrepancies along with control system programing 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
NA		Yes	AWS Fish Pump 3

Comments: AWS pumps 1 and 2 were tripped offline on May 6 at 0833 hours due to the 300G Line Relay program settings. Both pumps were restored to service at 0914 hours.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Weekly average 15.8 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:

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:

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:

Collection Facility: Collection for transport is scheduled to begin April 23.

Transport Summary: The first every day barge is scheduled to depart LWG April 24.

Spillway Weir: Spring flex spill continues. A total of 116,730 PIT tagged smolts have been detected over the RSW this season (54,487 Chinook, 1575 Coho, 60,599 steelhead, and 69 sockeye) compared to a total of 7,332 smolts detected in the juvenile system. A total of 393 adult PIT tagged steelhead and 2 Chinook have been detected at the RSW this season compared to 57 PIT tagged adult steelhead 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
79.3	53.8	51.6	35.4	52.0	50.0	5.0	4.2

*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 6 Siberian prawns collected in the condition sample.

Avian Activity: Biologist began daily piscivorous bird counts at Lower Granite Dam March 1. Bird hazing began April 1. American White Pelicans are present in the tailrace and there were 67 counted loafing on the island downstream of the dam April 22.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
April 30	1055	3	0	0	0
May 1	1100	0	0	0	4
May 2	1105	0	0	0	0
May 3	1435	0	0	0	2
May 4	1519	1	0	0	0
May 5	1404	2	1	0	3
May 6	1420	10	0	0	0

Gas Bubble Trauma (GBT) Monitoring: GBT sampling occurred May 6 with 100 smolts sampled and no symptoms of GBT observed.

Adult Fish Trap Operations: The adult trap is in operation Monday through Friday at a 25% (18% /week) sample rate. Total sample for the week of April 29-May 6 was 17 steelhead (1 hatchery and 16 wild) and 282 Spring Chinook (248 hatchery and 34 wild).

Fish Rescue/Salvage: N/A

Research:

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.

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.

National Marine Fisheries Service (NMFS) In-River Survival:

NMFS PIT-tag Chinook and steelhead smolts for their Survival Study April through early June to compare smolt to adult returns of in-river migrating smolts to the smolt to adult returns of transported smolts. PIT-tagged fish are held for 24 hours before being bypassed to the LWG tailrace. Collection for this study began April 21 and will continue Monday-Friday until the middle of June. Tagged fish were released to the river the following day.

National Marine Fisheries Service (NMFS) Seasonal Effects of Transporting Fish from the Snake River to Optimize Transportation Strategy:

This study aims to build on the current database of information on the seasonality of smolt-to-adult return rates (SARs). LWG biological staff began collection for the early non-transport season Monday April 1. Fish are being collected Monday and Tuesday for tagging on Tuesday and Wednesday with the barge departing LWG on Thursdays. Collection will occur Sunday-Thursday with fish being tagged Monday-Friday once general everyday fish transport begins. Collection for this study began April 21.