U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#21-2022

Project: McNary
Biologist: Bobby Johnson and Paul Bertschinger
Dates: July 22 – July 28, 2022

Turbine Operation

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

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

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

	OOS		RTS		
Unit(s)	**Date**	**Time**	**Date**	**Time**	**Outage Description**
8	6/6	1002	8/12	N/A	9-year overhaul
6	7/25	0738	7/28	1255	Annual maintenance
10, 11 & 12	7/26	1000	7/26	1130	ESBS inspections, rotated through units

Comments: The one percent peak efficiency constraint and unit priority are being followed per the 2022 Fish Passage Plan (FPP). RTS dates are subject to change. The biologist requested the saw tooth unit priority pattern for temperature abatement on July 24, at 0640 hours as water temperature in the sample tanks reached 68 degrees Fahrenheit.

Adult Fish Passage Facilities

The McNary fisheries staff performed measured inspections of the adult fishways on July 22, 24 and 27. In person fish counting and video review of nighttime lamprey passage continued.

Fish Ladder Exits:

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

Comments: Debris loads were light to heavy near the Oregon exit and minimal to very light near the Washington exit. New incoming debris was very light. Most of the debris was residual and moved across the forebay by changes in wind direction. The general maintenance staff cleaned both exits’ picketed leads as needed including the weekend.

At the Washington shore exit, a low water alarm and a regulating weir alarm came in and were reset on July 22 and 27, respectively.

There are no 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 1.6'
	X		NFEW2 Weir Depth	≥ 8.0'	7.9' to 8.1'
	X		NFEW3 Weir Depth	≥ 8.0'	7.9' to 8.1'
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.4' to 1.5'
	X		SFEW1 Weir Depth	≥ 8.0'	7.9' to 8.1'
	X		SFEW2 Weir Depth	≥ 8.0'	7.9' to 8.1'
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 1.7 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	1.2' to 1.3'
X			WFE2 Weir Depth	≥ 8.0'	9.2'
X			WFE3 Weir Depth	≥ 8.0'	8.4' to 8.7'

Comments: NEFW3, SFEW1 and SFEW2 were out of criteria on July 22. NFEW2 was out of criterion on July 22 and 24. An adjustment in the weirs' set points resolved the issue on July 24. WFE3 still requires calibration, and this will occur when the spill season concludes. The weir remains in criterion.

There are three floating orifice gate slots that still require future gate replacement, W8, W37 and W 41. These slots remain closed.

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			24°	Oregon Ladder Fish Pump 1
		Yes		Oregon Ladder Fish Pump 2 RTS date is Sept 30, 2022
Yes			25° to 26°	Oregon Ladder Fish Pump 3 RTS on July 6
Yes				OR North Powerhouse Pool supply from juvenile fishway

Comments: Fish pump 2 remains out of service. Repairs are waiting on funding so the return to service date is subject to change.

Juvenile Fish Passage Facility

Every other day sample collection continued with no interruptions in the schedule.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to heavy
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: Debris loads were minimal to heavy near the powerhouse and light to moderate beside the spillway. New debris loads were light and constant. Wind direction changes moved the new and residual debris across the forebay. Much of the debris was woody material and aquatic vegetation.

No trash racks were cleaned this week.

There are no problems to report. An algae bloom continued in 8A slot, which is isolated.

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 are installed in all units. Only 8A slot is without a fish screen as the emergency bulkhead remains in the slot with the unit out of service. ESBS camera inspections revealed no issues in units 10, 11 and 12 on July 26.

Daily VBS differential monitoring revealed no high differentials. There was a total of ten screens cleaned on July 25, 27 and 28. Two smolt mortalities were observed during the cleaning.

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

Yes	No	NA	Item	Number of orifices in service
X			Did orifices operate satisfactory?	41 to 42
	X		Dewatering and cleaning systems operating satisfactory?	

Comments: There was no moisture in the temporary air supply line this week. We continued to bleed off the line on every shift. Orifices were adjusted for VBS cleaning. The orifice in 8A slot remained closed. The 8B slot north orifice was closed in order to reduce the percentage opening of the two side dewatering valves on July 24.

The side screen cleaning brush appeared to have jammed on debris while traveling downstream at about 0850 hours on July 25. This tripped timing alarms for all three screen cleaning brushes. The biologist found the side brush travel motor grinding and turned the unit off. After moving the brush manually with the control switches, the biologist was able to dislodge the debris and return all three brushes to service by 1024 hours. Mechanics examined the side screen brush on July 28 and found not issues with the device.

However, after the above examination, the brushes' cycle timer zeroed, and the brushes appeared to not be cycling on July 28 at 1045 hours. This appeared to be some kind of program timing issue as the PLC did accept at cycle sequence value at 1515 hours. Once the valve was entered, the side and rectangular screen cleaning brushes both ran. The transition screen brush did not run but the panel view recorded a cycle. It was soon determined that the transition brush was not going to run. After which, it was also determined the rectangular brush was not functional. Fortunately, the side brush was operational.

An electrician was called at 1600 hours. They found the rectangular screen brush's upstream limit had failed, which would keep the rectangular and transition brushes from operating properly since the paths of these devices overlap. The limit switch was replaced, the brushes were tested, and they were returned to automatic mode by 1800 hours. During that evening, the brushes cycle sequence timer appeared to have reset itself. Otherwise, there were no other issues.

With debris loads and brush issues, the brushes cycle sequence was set for every four to six hours this week.

Bypass Facility:

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

Comments: All bypass facility systems functioned well. 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, 230 juvenile lamprey and 23,440 smolts, mostly sub-yearling Chinook salmon, were bypassed during secondary bypass. The smolt monitoring staff reports fish data in a separate report.

The facility PIT room air conditioning continued to trip offline and be reset. A new unit has been ordered.

There are no problems to report.

Top Spillway Weir (TSW) Operations: Spillbays 19 and 20 currently have standard spillgates in operation with TSW's removed.

River Conditions

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
237.4	194.6	135.8	111.6	69.4	67.3	6.0	6.0

Comments: The above data is provided by the smolt monitoring staff except water clarity, which comes from the control room. The data day runs from 0700 to 0700 hours. The summer spill program continued with 57 percent of total flow being spilled.

In bay 20, the upper and lower hoist limits were calibrated on July 25. The bay was opened, and the hoist returned to automatic mode by 1222 hours.

In bay 21, the hoist was removed on July 26. Crane 6 was used to test the gate load and dog open the gate at 3 feet by 1051 hours. The project engineer expects bay 21's hoist to be out of service for at least a couple weeks.

While bays 20 and 21 were closed, spill was distributed evenly through the remaining bays with functional hoist.

Bay 14 was lowered to two stops on July 26.

With limited crane use, hoist issues and control problems previously discussed, bays 2, 6, 14, 16 and 19 have the gates dogged open and require a crane for adjustment along with bay 21.

Due to the issues with cranes and hoists, the project staff is examining an alternate way to use hoists and still provide spill as hoist rehabilitation will require approximately 10 years to complete.

Project wide temperature monitoring continued. The data will be published in separate daily and weekly reports by the smolt monitoring staff.

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections will occur on August 2.

Avian Activity: Recording avian counts continued. These counts are reflected in the Table below.

McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
July 22	Spill	0	0	0	24	0
	Powerhouse	0	0	0	5	0
	Outfall	2	5	0	0	0
	Forebay	12	0	0	2	0
July 23	Spill	0	0	0	13	0
	Powerhouse	0	0	0	9	0
	Outfall	11	5	0	0	0
	Forebay	12	0	0	0	0
July 24	Spill	1	0	0	11	0
	Powerhouse	0	0	0	3	0
	Outfall	4	16	0	0	0
	Forebay	19	0	0	0	0
July 25	Spill	0	0	0	7	0
	Powerhouse	0	0	0	3	0
	Outfall	7	7	0	0	0
	Forebay	8	0	0	2	0
July 26	Spill	5	0	0	5	0
	Powerhouse	0	0	0	7	0
	Outfall	4	21	0	0	0
	Forebay	10	3	0	1	0
July 27	Spill	0	0	3	12	0
	Powerhouse	0	0	0	4	0
	Outfall	4	6	0	0	0
	Forebay	11	0	0	1	0
July 28	Spill	11	0	0	7	0
	Powerhouse	0	0	0	12	0
	Outfall	5	12	0	0	0
	Forebay	6	0	0	0	0

For the outfall, the LRAD still requires sounds to be programmed into the system and parts are on order for the laser.

The navigation lock wing wall laser, which is aimed at the outfall, remains in service along with the two large bird distress calls. USDA Wildlife Services daily shore hazing concluded on July 23. Hazing pelicans that enter the adult fish ladders was effective.

In the spillway zone, pelican numbers decreased. A few terns and gulls were also noted. Most birds were feeding.

In the powerhouse zone, pelican numbers remained low as hazing the Oregon ladder continued.

In the bypass outfall zone, gull and cormorant numbers increased slight with birds mostly roosting.

In the forebay zone, juvenile gulls were observed along with a few cormorants and pelicans. Only the pelicans were feeding. Outside the zone, small gull flocks, a couple of ospreys, a few cormorants, a few grebes, and several pelicans were noted.

No pelicans were observed in the ladders and no grebes entered the gatewell slots this week.

Invasive Species: The mussel station examinations revealed no issues on July 24.

Siberian Prawn: No Siberian prawns were removed from the sample this week. None have been seen this year.

Fish Rescue/Salvage: No fish rescue occurred this week.

Research: For a CRITFC study, there were tissue samples removed from seven juvenile lamprey collected at the facility this week. For the season, a total of 635 juvenile lampreys have been sampled. All fish were returned to the river unharmed.

Gas bubble trauma examinations occurred on July 25. Fish are recorded on the next data day. For the report week, no smolt were observed with signs of trauma.

Project: Ice Harbor
Fisheries Biologist: Ken Fone

Turbine Operation

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

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

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

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
3	5/3/19	0641	---	---	Turbine runner replacement and stator rewind
2	7/11/22	0750	---	---	Doble testing, annual maintenance, cavitation repair

Comments: None.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on July 25, 26, and 27.

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:

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

Comments: Three of the operating south shore AWS pumps and both operating north shore pumps were without power on July 24 at 0439 hours when the dam loss station service. Power was restored and all of the affected pumps were restarted by 0505 hours. The channel/tailwater differential was below criteria at all of the fish ladder entrances while those pumps were off.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	Average of 2 square yards
x			Gatewell drawdown measured this week?	
x			Gatewell drawdown acceptable	
x			Any debris seen in gatewells (% coverage)	0-4% coverage
	x		Any oil seen in gatewells?	

Comments: None.

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

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

Comments: 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: The actuator for the water regulating weirs in the collection channel is in local control due to a problem with the automatic control function. The weirs are being operated at the actuator to adjust the water level as needed until the problem can be fixed.

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

Fish Sampling: Juvenile fish sampling is done for the season.

Removable Spillway Weir (RSW): Summer 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
39.8	33.3	11.9	9.6	69	68	9.0	6.3

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainer inspections for fish are done for the season until December.

Avian Activity: There were moderate to high numbers of piscivorous birds observed around the project (see table below). Most of the birds were observed foraging downstream of the spillway and near the upstream tip of Eagle Island. Predation attempts by Caspian terns diving in the water were observed downstream of the avian wire array.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
July 22	---	---	---	---	---
July 23	---	---	---	---	---
July 24	---	---	---	---	---
July 25	5	4	51	10	15
July 26	7	3	21	0	8
July 27	0	4	11	0	13
July 28	0	4	43	0	10

Invasive Species: No exotic species that are new to the area have been found.

Fish Rescue/Salvage: None.

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

Project: Lower Monumental
Biologists: Denise Griffith and Raymond Addis

Turbine Operation

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

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

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
Unit 5	06/13/2022	0805	7/28/2022	ERTS	6 Year Overhaul

Comments: None.

Adult Fish Passage Facility

The adult fishways were inspected by Army Corps and EAS biologists July 22, 23, 24 and 28.

Fish Ladder:

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

Comments: None.

Fishway Entrances and Collection Channel:

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

Comments: The south powerhouse entrance weir (SPE-1) was on sill during all inspections with readings 5.5, 5.5, 5.5 and 6.0 feet, respectively. The south powerhouse entrance weir (SPE-2) was on sill during all inspections with readings 5.5, 5.5, 5.5 and 6.0 feet, respectively. The south shore entrance weir (SSE-1) was on sill during all inspections with readings 6.2, 6.2, 6.2 and 6.6 feet, respectively. South powerhouse tailwater staff gauge’s, SG9N, frame was found loose on the April 13 inspections. If the gauge remains unreadable, readings will be taken from the digital readings. The project is looking into new staff gauges, so they can be ordered and installed during the winter maintenance period.

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)	3 yds^2
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 25%
	X		Any oil seen in gatewells?	

Comments: None.

STSs/VBSs:

Yes	No	NA	Item
X			STSs deployed and in service in operating and 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 running in Cycle-Run mode throughout this reporting period due to average sub-yearling Chinook salmon and sockeye salmon lengths being greater than 120 mm.

Unit 5 STS screens were found to be not responding on July 26. The electricians examined them on July 27 and the relay to the screens was found to be faulty. The relay was then replaced and the screens were placed back into service.

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: Air supply to zone 4 of the air bubbler system was adjusted to stop the air from setting off the high water alarm.

Collection Facility: Sampling for condition on alternating days began July 7. The facility was placed into Primary Bypass on non-sample days. A total of 1,652 fish were collected with 1,652 fish bypassed back to the river during this reporting period.

The air conditioner went out in the JFF shop and was replace on July 25. The flow coming from the upwell diffuser appeared to be lessoning over the last few weeks. The diffuser was removed and cleaned on July 25, which increased the flow into the raceway.

Transport Summary: Collection for truck transport was scheduled to begin August 1. Truck transport from Lower Monumental was canceled by the Technical Management Team on July 27. An SOR was issued requesting truck transport be removed from the program at Lower Monumental and will be discussed by the Corps team in the near future.

Spillway: Summer spill began at 0000 on June 21.

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
38.4	32.5	17.3	16.9	69.5	68.0	6.6	5.2

*Scrollcase temperatures.

Other

Cooling Water Strainers: Cooling water strainers inspection will occur in August.

Avian Activity: Highest daily counts of piscivorous birds in all zones combined at Lower Monumental Dam are reported in the table below.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
7/22/2022	820	33	9	23	0	19
7/23/2022	1030	39	8	19	0	7
7/24/2022	1200	28	18	22	0	8
7/25/2022	1530	13	7	0	0	6
7/26/2022	800	30	8	16	0	22
7/27/2022	730	52	6	16	0	23
7/28/2022	750	70	3	10	0	3

Comments: Piscivorous bird observations are occurring daily. Birds were also hazed from the entrance of the North ladder. The outfall bird cannon functioned efficiently this week. JFF personnel have been performing bird hazing activities during the day, due to larger than normal numbers of piscivorous birds feeding in the tailrace area and in the adult fishways.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on July 3.

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

Research: GBT examinations occurred on July 25. A total of 25 clipped and 47 unclipped subyearling Chinook salmon smolts were examined. Gas bubble trauma was seen in the fins of 2 clipped and 1 unclipped of these smolts.

Project: Little Goose
Biologists: Chuck Barnes and Deborah Snyder

Turbine Operation

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

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

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

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
4	07/11/2022	10:34	07/28/2022	15:15	Unit Annual Maintenance
5	4/14/2017	14:11	12/31/2022	ERTS	Spider and upper guide bearing repair.
6	4/18/22	5:10	12/31/2022	ERTS	Rooftop replacement / BUS work replacement

Comments: Previously reported Unit 6 RTS date of 4/21/2022 pertained to station service only, the anticipated RTS for regular service is 12/31/2022.

Adult Fish Passage Facility

ODFW, EAS Bio, and USACE staff inspected the adult Fishway on July 22, July 24, July 26, and July 28.

Fish Ladder:

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

Fishway Entrances and Collection Channel:

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

Comments: The adult fishway was returned to service on February 8 with AWS pumps returning to service on February 24. The NSE channel/tailwater differential and NSE weir depths were manually measured, adjusted, and monitored into criteria from February 24 through March 1. The fishway Fish System Control (FSC) was recommissioned on May 5 with NSE weir reading anomalies. NSE weirs 1 and 2 are being monitored with manual measurements as both weir targets enabling the FSC system to accurately read and automatically adjust weir heights were compromised during emergency flood control measures in June, repairs are pending. The Fish Ladder Exit Cooling Water Pump was replaced, installed, and readied for service on April 23. Criteria requiring the activation of

the Fish Ladder Exit Cooling Pump was met during the night hours of June 26, and the system was started at 0800 hours on June 27.

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, 2, and 3 were returned to service February 24.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comment
X			Forebay debris load acceptable? (amount)	High 50ft² - Low 0ft²
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: The forebay had minimal floating debris inside the trash shear boom.

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: Installation of ESBS's began March 21 with most units completed on March 22. Unit 1 differentials were checked on July 28.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	19
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: The juvenile bypass system was watered up March 23.

Collection Facility: The juvenile collection facility completed water up activities on March 29. Every other day collection for condition monitoring in conjunction with secondary bypass commenced on April 1 with the first sample being conducted on April 2. Everyday collection began April 23 coinciding with every other day barge transportation. A total of 8,653 fish were collected, 8,648 were bypassed, and there were 5 sample or facility mortalities. The descaling and mortality rates were 0.4% and 0.06%, respectively. No adult lamprey were removed from the separator during this report period. The collection and transport facility operated within criteria this report period, initiating every-other day primary by-pass on July 21 due to water temperatures above 68◦F. Every day

collection resumed at 0700 on July 29 in accordance with the FPP three-day window prior initiation of trucking operations.

Transport Summary: Collection for fish transportation began April 23 with the first barge departure on April 24. Every other day barging transitioned to every day barging on May 16 due to an increase in fish numbers. Every other day barging resumed on May 24. Barge transportation for the season ended with the final barge departure of June 19.

Spillway Weir: Little Goose began operation of the adjustable spillway weir (ASW) on March 2 to facilitate passage of adult steelhead overshoots. Operation occurred three days each week on non-consecutive days for four hours in the morning on Tuesday, Thursday and Sunday each week, through March 31. Spring spill operations began as scheduled on April 3 with the ASW in high crest. The ASW was positioned in low crest on May 28. Summer spill operations began as scheduled on June 21, and the ASW was repositioned into high crest on June 28.

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
37.9	33.1	11.4	9.9	69.9	67.2	6.0	5.4

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainer inspections commenced on December 9, 2021. Inspections will continue in accordance with the Fish Passage Plan (FPP) and results will be submitted to the District.

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
7-22	8:30	42	1	0	1
7-23	8:30	24	9	0	4
7-24	8:30	38	1	0	2
7-25	8:30	49	3	0	1
7-26	8:00	36	2	0	3
7-27	7:30	60	0	0	1
7-28	8:00	35	8	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 listed below.

Date	Sample	Collection
7-22	NA	NA
7-23	26	260
7-24	NA	NA
7-25	19	190
7-26	NA	NA
7-27	9	90
7-28	NA	NA
Totals	54	540

Gas Bubble Trauma (GBT): GBT monitoring occurred July 26. None of the 82 fish examined exhibited signs of GBT.

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

Research: The Nez Perce Tribe (NPT) began adult steelhead kelt collection efforts on April 1 and concluded June 29.

Project: Lower Granite
Biologists: Elizabeth Holdren and David Miller

Turbine Operation

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

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

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

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
4	7/11	0733			Annual Maintenance

Comments: None.

Adult Fish Passage Facility

Lower Granite Biologists and Anchor QEA staff inspected the adult fishway on July 22, 23, 25, and 27.

Fish Ladder:

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

Comments: The fish ladder cooling water pumps are in operation. The fish ladder temperature probes and system were upgraded over the winter outage season. NWW and NWD continues working on the issue with only some sensor readings available online. Fish ladder temperature data id provided in (Figure 1).

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
	X		South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	7.9’, 7.9’, 7.8’
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	7.9’, 7.7’
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	
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	6.9’
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.9’, 0.9’, 0.9’
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. Although both NSEs and all four FOGs are in operation, the north shore has not consistently met channel/tailwater head differential criteria which seems to be related to the operations of all four FOGs.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
	X		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)	58.6 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: Gatewells are inspected for foreign substances and debris quantity and removal daily.

ESBSs/VBSs:

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

Comments: None.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

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

Comments: None.

Collection Facility: The juvenile facility is collecting for condition sample in secondary bypass mode. There were 15,157 fish bypassed to the river this week.

Transport Summary: N/A

Spillway Weir: Summer spill continues. There were 106,085 juvenile and 170 PIT-tagged adult Chinook salmon, 72,837 juvenile and 494 adult PIT-tagged steelhead, 10,815 juvenile and 4 adult sockeye salmon, and 4,064 juvenile coho salmon detected over the RSW spillway since March 1. There have been 35,576 juvenile and 18 adult Chinook salmon, 18,075 juvenile and 86 adult steelhead, 2,112 juvenile sockeye salmon, and 950 juvenile coho salmon detected at the JBS full flow PIT tag detection array since March 14 (DART).

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
38.4	34.3	18.6	16.9	67.0	64.5	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 3,571 Siberian prawn in the condition sample this report week.

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
July 22	0850	1	0	0	0
July 23	0945	0	0	0	0
July 24	1515	1	6	2	0
July 25	1520	0	3	0	0
July 26	1217	7	3	0	0
July 27	1304	1	8	0	0
July 28	1410	0	3	0	0

Gas Bubble Trauma (GBT) Monitoring: N/A

Adult Fish Trap Operations: The adult trap is operating Monday through Friday at a 20% (18%/week) sample rate. HOBO data indicates a temperature between the main ladder and the adult trap (Figure 1). The adult trap turnpool gate was repositioned to remove Shad from 0945-1015 hours July 28.

Fish Rescue/Salvage: N/A

Research:

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

The goal of this project is to PIT tag up to 4000 unclipped adult Chinook salmon 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. 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.

Columbia River Inter-Tribal Fisheries Commission (CRITFC) Pacific Lamprey Genetic Study:

CRITFC has requested that the SMP collect non-lethal tissue samples from up to 1,000 juvenile and 2,230 larval Pacific lamprey, not to exceed 20 juvenile or 10 larvae daily, during the routine smolt monitor condition sampling from March through October. The purpose of this study is to fill two objectives; 1) Determine relative proportion of translocation offspring among the total abundance of larval and juvenile lamprey passing the juvenile bypass systems at BON, JDA, MCN, and LWG. 2) Describe life history characteristics of larval and juvenile lamprey emigrating from the Columbia and Snake River basins. The genetic information collected will be used to evaluate the tribal Pacific lamprey programs efficacy and assist with guiding future management. There have been 524 macrophthalmia (juvenile) and 1130 ammocoete (larval) lamprey samples have been collected this season.

Idaho Power Hells Canyon Sturgeon Recruitment:

LWG Corps bio techs continue collecting passage and estimated lengths and of White Sturgeon prior to removing them from the separator in support of Idaho Power Sturgeon program.

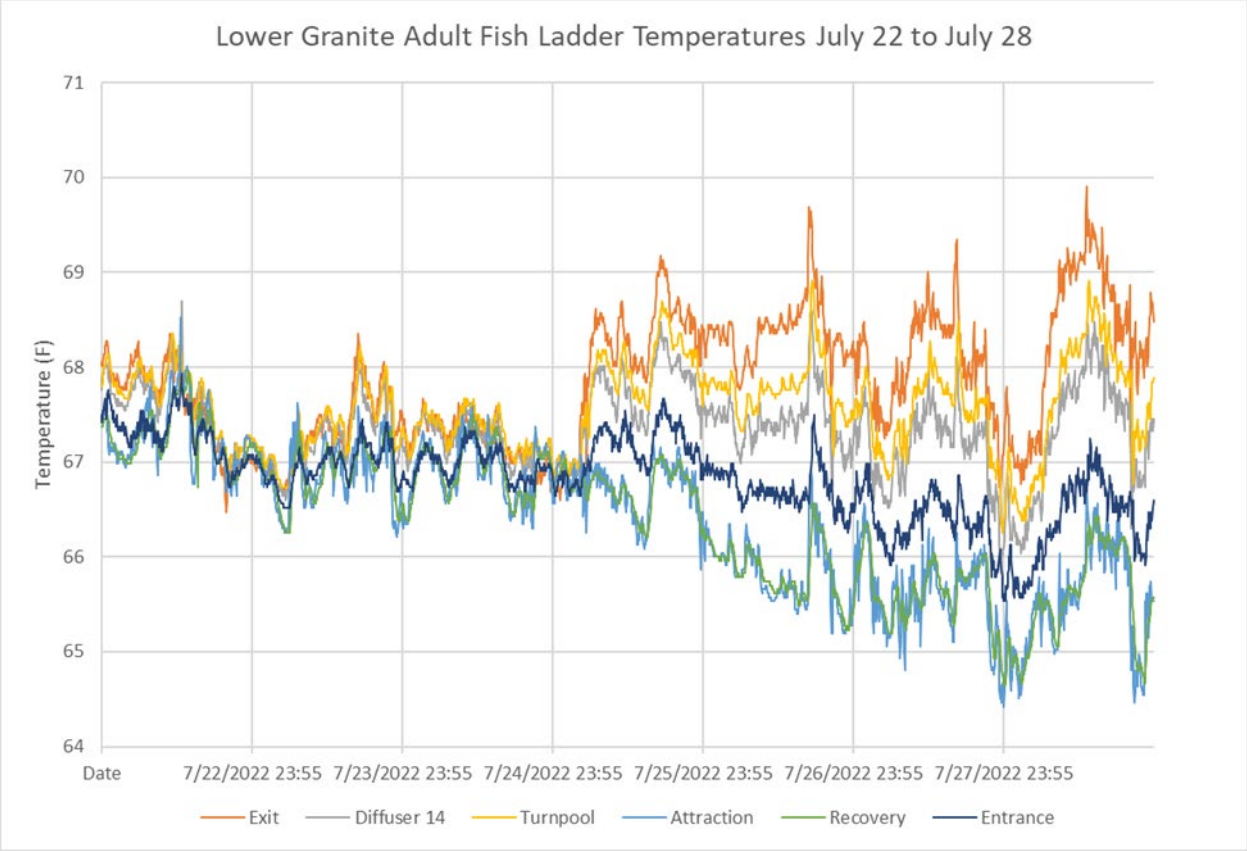

Figure 1. Lower Granite Dam adult fish ladder temperatures July 12 to July 28, 2022.