Out of Criteria – NWW Weekly Report #37 – November 8 – 14, 2024

1. McNary

Yes	No	Location	Criteria	Measurements
	X	Washington Exit	Head over weir 1.0’ to 1.3’	0.9’ to 1.1’

At the Washington shore exit, weir 339 remains in bypass mode. The control system continued to regulate the exit without this weir moving. The out of criterion point noted above occurred on November 10. The operators immediately adjusted the exit set points.

Yes	No	Sill	Location	Criteria	Measurements
	X		NFEW3 Weir Depth	$\geq$ 8.0’	7.9’ to 8.1’

At the Oregon shore entrances, NEFW3 was out of criterion on November 13. The out of criterion point may have been due to calibration drifts or set point adjustments.

Yes	No	NA	Item
	X		VBSs differentials acceptable?

The control program for the fish screens in unit 10 is not currently communicating with the panel view on the 8th floor. When the unit is in service, the brush cycle sequences will be monitored in the control room until repairs can occur in the future.

Daily VBS monitoring continued, and two high differentials were recorded when units were at 79 megawatts on November 11. The general maintenance staff was called in to clean these VBS’s that day

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

A transition screen brush timing alarm came in on November 13, at 1333 hours. The biologist on duty found the device on the A (park) beam, but the brush was continuously raising and lowering. The biologist used the control switches to raise the brush and ensure it was parked before removing the device from service. The electrical staff examined the brush and determined a limit switch could be at fault on November 14. However, considering the season is almost completed, we decide to leave the brush out of service.

2. Ice Harbor

Yes	No	NA	Item	Number open and in service
	x		Dewatering and cleaning systems operating satisfactory?	

The replacement actuator for the water regulating weirs in the collection channel is in local control due to a problem with the actuator being undersized for this application. The actuator will be replaced to enable automatic control. The weirs are being operated at the actuator to adjust the water level as needed until the problem can be fixed.

Numerous false alarms were received during the week, indicating high water levels and high differentials in the collection channel. An electrician attempted to calibrate the water level sensors on November 12, but a control module for the sensors was discovered to have failed. Until the control module can be replaced, the screen cleaner will be operated in manual control to prevent excessive runtime.

3. Lower Monumental – No comments

4. Little Goose

Yes	No	Sill	Location	Criteria	Measurements
X	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0’ or on sill	11/8-5.9
X	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	11/8-0.7

The fish system control program is proving unreliable and inadequate to balance the adult fishway in “automated” mode. Biologist personnel are manually adjusting and balancing the adult fishway with increasing frequency. EAS Bio personnel report the FSC board reflects weir and channel height readings with notable discrepancies compared to actual physical hand measurements taken during inspection periods. USACE Biologists, EAS Bio, and ODFW personnel are collaborating and manually taking physical readings for weir elevations at all three fishway entrances. FSC board readings of SSE Channel elevation continues to report discrepancies below physical staff gauge measurements. Criteria evaluations default to physical staff gauge measurements in this area. NPE FSC board no longer accurately reading weir heights, reporting measurements 1.2 and 1.1 ft higher than weirs currently positioned on sill (532 ft). NSE FSC board channel heights reflect similar and corresponding readings to staff gauge measurements.

5. Lower Granite Dam

Yes	No	Sill	Location	Criteria	Comments
	X		South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	7.8’, 7.5’
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	7.9’, 7.5’
	X		North Powerhouse Entrance (NPE-1) Weir Depth	≥ 8.0’ or on sill	

Fish ladder control system operation and configuration is an ongoing issue that began when the system was installed in 2016.

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#37-2024

Project: McNary
Biologist: Bobby Johnson and Paul Bertschinger
Dates: November 8-14, 2024

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	**Date**	**Time**	**Date**	**Time**	**Outage Description**
14	5/13	1232	11/18	NA	Isophase replacement and headgate work
13	5/21	0955	11/22	NA	Isophase replacement and headgate work
3 & 4	5/29	0634	11/30	NA	Control system upgrades
5	8/21	1057	11/14	1049	9-year overhaul
1 & 2	10/21	1209	12/1	NA	Governor air accumulator issue

Comments: RTS dates are subject to change. Slight variations outside the soft one percent criterion are not recorded here. If units due run outside the soft constraint, it is at BPA's request, which did occur daily. Units 13 and 14 were tested speed no load on November 8. Unit 14 was also tested speed no load on November 12.

Adult Fish Passage Facilities

McNary fisheries staff performed measured inspections of the adult fishways on November 8, 10 and 13. For water temperature monitoring, the Washington shore midpoint probe and the Oregon shore south entrance probe have been referred to district personnel.

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'	0.0' to 0.1'
	X	Washington Exit	Head over weir 1.0' to 1.3'	0.9' to 1.1'
X		Washington Count Station Differential	0.0' to 0.5'	0.0' to 0.1'

Comments: Debris loads were minimal near both exits.

At the Oregon shore exit, multiple alarms were noted, and the exit controls were in manual mode on November 13. The operators will be adjusting the exit in manual mode with forebay elevation changes until the electrical staff resolves the issue next week.

At the Washington shore exit, weir 339 remains in bypass mode. The control system continued to regulate the exit without this weir moving. The out of criterion point noted above occurred on November 10. The operators immediately adjusted the exit set points.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0' – 2.0'	1.2' to 1.3'
X			NFEW2 Weir Depth	≥ 8.0'	8.0' to 8.2'
	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'	8.3' to 8.4'
X			SFEW2 Weir Depth	≥ 8.0'	8.2' to 8.5'
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	1.9 fps
X			Washington Entrance Head Differential	1.0' – 2.0'	1.4' to 1.6'
X			WFE2 Weir Depth	≥ 8.0'	8.3' to 9.4'
X			WFE3 Weir Depth	≥ 8.0'	8.2' to 9.3'

Comments: At the Oregon shore entrances, NEFW3 was out of criterion on November 13. The out of criterion point may have been due to calibration drifts or set point adjustments.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Blade angle	Auxiliary Water Supply System (AWS)
X		X		WA shore Wasco County PUD Turbine Unit, RTS 11/9
X	X			WA shore Wasco PUD Bypass
		X	NA	Oregon Ladder Fish Pump 1, RTS 11/30
X			22° to 23°	Oregon Ladder Fish Pump 2
X			23°	Oregon Ladder Fish Pump 3
X				OR North Powerhouse Pool from juvenile fishway

Comments: Fish pump 1 remained out of service for a scheduled 5-year overhaul. Return to service dates are subject to change. The Wasco PUD unit returned to service on November 9 at approximately 1200 hours. The unit was also out of service for switching on November 14, from 1210 to 1240 hours. When in use, the bypass system has been functioning well.

Juvenile Fish Passage Facility

Fall primary bypass season and light winter maintenance continued.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to light near the powerhouse
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: The debris load near the powerhouse was minimal to light. New incoming debris and the debris load at the spill were minimal. Most of the debris was aquatic vegetation and woody material, which is dissipating.

No trash rack cleaning is scheduled.

The ESBS rope for the screen in 9B slot was found in the slot's south orifice on November 14. The general maintenance staff immediately removed and resecured the rope.

There are no other 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: The control program for the fish screens in unit 10 is not currently communicating with the panel view on the 8th floor. When the unit is in service, the brush cycle sequences will be monitored in the control room until repairs can occur in the future. Testing of ESBS screen brush programming continued with the screens in unit 4. ESBS camera inspections in out of service units 1, 2, 13 and 14, except 1A slot, revealed no issues on November 10.

Daily VBS monitoring continued, and two high differentials were recorded when units were at 79 megawatts on November 11. The general maintenance staff was called in to clean these VBS's that day. An additional total of 15 screens was cleaned on November 9, 11, 12 and 14. VBS inspections, which includes cleaning, occurred in unit 14 along with 4A and 4B slots on November 12. No fish were observed during cleaning and inspections.

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

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

Comments: Orifices were adjusted for VBS cleaning and inspections as required. Orifice valve operator and orifice valve rehabilitations continued. This fall, we should have about 40 of the 84 orifices rehabilitated.

A transition screen brush timing alarm came in on November 13, at 1333 hours. The biologist on duty found the device on the A (park) beam, but the brush was continuously raising and lowering. The biologist used the control switches to raise the brush and ensure it was parked before removing the device from service. The electrical staff examined the brush and determined a limit switch could be at fault on November 14. However, considering the season is almost completed, we decide to leave the brush out of service. No water elevation alarms occurred this week. Still, due to cyclic fluctuations, the channel water elevation will be monitored.

Bypass Facility:

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

Comments: The sample system remained out of service. The PIT tag system was not utilized this season.

Winter maintenance continued.

TSW Operations: The TSW bay 19 remained closed unless required for spill due to flow being in excess of powerhouse capacity. The TSW in bay 20 was opened every morning for four hours for adult fallback passage, which concludes November 15. However, this bay too remained open when flow was in excess of powerhouse capacity.

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
119.7	106.4	18.3	13.0	55.0	54.0	6.0	6.0

Comments: The above data is from the control room, with the data day starting at 0000 hours. Spill of flow in excess of available powerhouse capacity occurred every day except on November 13. The FPP spill pattern was followed. Rehabilitated of downstream wall dogs continued with the dogs from bays 14 and 17 currently removed. The dogs for bay 17 will be reinstalled in the near future.

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections will occur on December 3.

Avian Activity: Casual bird observations continued during other inspections.

In the spill zone, gull numbers appeared lower and cormorant numbers remained fairly stable. Most gulls were roosting around the spill basin or with light feeding in the TSW and spill flow at times. Cormorants were mostly roosting around the basin or feeding in the calmer side areas.

In the powerhouse zone, gulls in lower numbers were observed feeding along with roosting on the water or structures at times.

In the outfall zone, gull numbers were low and cormorant numbers were stable with the birds roosting and occasionally feeding at the outfall.

For the tailwater area and locally, the gulls appeared to move freely between the three zones and the local area with spill and feeding actively effecting that movement.

For the forebay zone, grebes and gulls in fluctuating numbers were observed. Most birds are roosting, but some grebes were occasionally noted feeding. A few gulls and cormorants were noted outside the zone.

There is no hazing occurring.

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

Siberian Prawn: With sampling concluded, no prawns have been observed.

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

Research: PNNL will remove their spillway equipment some time in December.

Project: Ice Harbor
Biologist: Ken Fone
Biological Science Technician: Ben McArthur
Dates: November 8-14, 2024

Turbine Operation

Yes	No	Turbine Unit Status
	x	All 6 turbine units available for service (see table & comments below for details).
x		All available turbine units are operated in accordance with Appendix 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
1	6/27/23	0708	---	---	Turbine runner replacement and stator rewind
6	10/9/24	0640	---	---	6-year overhaul

Comments: None.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on November 12, 13, and 14.

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 fish entrance (SFE-1) weir depth	≥ 8.0’ or on sill	
x			South fish entrance channel/tailwater differential	1.0’ – 2.0’	
x			South shore channel velocity	1.5 – 4.0 fps	
		x	Central fish entrance (CFE-2) weir depth	≥ 8.0’ or on sill	
x			Central fish entrance channel/tailwater differential	1.0’ – 2.0’	
		x	North fish entrance (NFE-1) weir depth	≥ 8.0’ or on sill	
x			North fish entrance channel/tailwater differential	1.0’ – 2.0’	

Comments: None.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System
5 pumps	2 pumps	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 #6 has been out of service since March 1, 2024, due to high vibration readings coming from the motor and gearbox. The gearbox was replaced with a refurbished one and will require an overhead 115 kv line outage during the winter maintenance period to remove the pump bulkhead.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	Average of 3 square yards
x			Gatewell drawdown measured this week?	
x			Gatewell drawdown acceptable	
x			Any debris seen in gatewells (% coverage)	0-5% 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 inspected this week?
		x	STSs inspection results acceptable?
		x	VBSs differentials checked this week?
		x	VBSs differentials acceptable?

Comments: None.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
x			Orifices operating satisfactory?	20
	x		Dewatering and cleaning systems operating satisfactory?	

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

Numerous false alarms were received during the week, indicating high water levels and high differentials in the collection channel. An electrician attempted to calibrate the water level sensors on November 12, but a control module for the sensors was discovered to have failed. Until the control module can be replaced, the screen cleaner will be operated in manual control to prevent excessive runtime.

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

Fish Sampling: Juvenile fish sampling has ended for the season.

Removable Spillway Weir (RSW): The RSW is opened daily from approximately 0500 hours to 0900 hours to facilitate downstream passage back to the Columbia River for steelhead that strayed into the Snake River.

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
19.2	14.6	1.8	1.5	57	56	11.0	8.9

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers are being monitored for increased pressure differential due to juvenile shad buildup and will be cleaned as necessary. Installation of a prototype fish exclusion cover over unit 6 cooling water intake in the scroll case began on November 12.

Avian Activity: There were variable numbers of piscivorous birds observed around the dam. The birds were roosting on Eagle Island and opportunistically foraging downstream of the spillway and at the discharge of the navigation lock while it was being drained.

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

Siberian Prawn: Siberian prawns that were collected in the sample at the Juvenile Fish Facility were humanely euthanized by the fish sampling contractor, frozen and properly disposed of in a landfill. Fish sampling has ended for the season.

Fish Rescue/Salvage: None.

Research: On October 16, Pacific Northwest National Laboratory (PNNL) personnel deployed four new autonomous hydroacoustic receivers into spillway forebay trolley pipes. PNNL is evaluating the equipment in preparation for a study at Little Goose Dam next year. The system is being checked once per week.

Project: Lower Monumental
Biologists: Denise Griffith and Raymond Addis
Dates: November 8 - 14, 2024

Turbine Operation

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

Comments: See Unit Outages and Return to Service comments below.

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

	OOS		RTS		
Unit	Date	Time	Date	Time	Outage Description
Unit 3	10/15/24	0700	12/06/24	ERTS	6 Year annual maintenance
Unit 4	11/12/24	0804	11/12/24	1030	DC/Low Voltage Upgrade

Comments: None.

Adult Fish Passage Facility

Lower Monumental fish facility staff inspected the adult fishways on November 12, 13 and 14.

Fish Ladder Exit:

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 Powerhouse Channel Velocity	1.5 – 4.0 fps	AVG 2.4 fps
		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: South Powerhouse Entrance SPE-1 weir was at sill during all inspections with readings of 7.3, 7.3 and 7.1 feet respectively. South Powerhouse Entrance SPE-2 weir was at sill during all inspections with of 7.3, 7.3 and

7.1 feet respectively. South Shore Entrance SSE-1 weir was at sill during all inspections with readings of 8.1 feet each inspection.

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	Comments
X			Forebay debris load acceptable? (amount)	323 yrd² large woody debris along shore
	X		Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
		X	Any debris seen in gatewells (% coverage)	
		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	VBS screens checked this week?
		X	VBS screens acceptable?

Comments: STSs were running on cycle-run mode due to the average sub-yearling Chinook and sockeye lengths being greater than 120 mm.

Orifices, Collection Channel, Dewatering Structure, and Flume:

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

Comments: None.

Collection Facility: The collection facility is down for winter maintenance.
Corrosion found in the separator will be repaired during the winter maintenance period.

Outfall pipe leakage at the expansion joint near the lamprey bypass Y is planned to be repaired the winter maintenance period.

Transport Summary: Transport at Lower Monumental has ended for the season.

Spillway Weir: Surface spill for fall steelhead: RSW spill (~7.5kcfs) for 4 hours in the morning, 7 days a week ended with the November 15 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
18.8	15.4	1.4	1.3	54.0	53.5	7.2	6.1

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers inspections will resume in December.

Avian Activity: All bird hazing is over for the season.

Invasive Species: Zebra or quagga mussel traps will be examined in December.

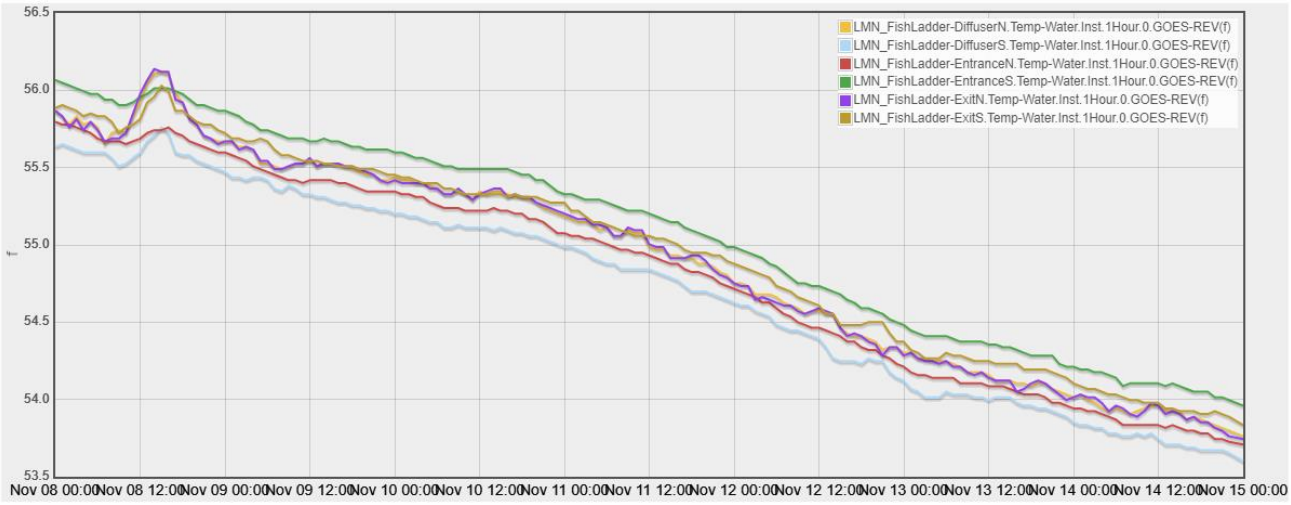
Siberian Prawn: Siberian prawn collection ended for the season.

Fish Rescue/Salvage: No fish salvage occurred during reporting period.

Research: The collection of lamprey for the PNNL study of the behavior and survival of Pacific lamprey has ended. GBT sampling has ended for the 2024 season. The Nez Perce steelhead kelt study and rehabilitation collection ended on for the season.

Temperature Probes: The adult passage temperature probes operated correctly during this reporting period.

The graph below shows the temperatures per recording point for the reporting period.



Project: Little Goose Dam
Biologist: Deb Snyder
Dates: November 8 – November 14, 2024

Turbine Operation

Yes	No	Turbine Unit Status
	X	All 6 turbine units available for service? (See table and comments below for details)

*All available turbine units are operated in accordance with Appendix 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
3	8/19/2024	07:00	2/15/2025	17:00	Annual 6-year overhaul.
5	4/14/2017	14:11	01/31/2025	ERTS	Spider and upper guide bearing repair.

Comments: Contractor has demobilized until further notice realigning the Unit 5 ERTS date to January 31, 2025. Unit 3 Annual 6-year overhaul extended for oil leak precautionary measures.

Adult Fish Passage Facility

USACE and EAS Bio staff inspected the adult Fishway on November 8, 13, and 14.

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		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 7.0’ or on sill	
X		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	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0’ or on sill	11/8-5.9
X	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	11/8-0.7
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: The adult fishway was returned to service on February 15. The AWS pumps returned to service on February 22. The Collection Channel Surface Velocity is measured at NPE. The fish system control program is proving unreliable and inadequate to balance the adult fishway in “automated” mode. Biologist personnel are manually adjusting and balancing the adult fishway with increasing frequency. EAS Bio personnel report the FSC board reflects weir and channel height readings with notable discrepancies compared to actual physical hand measurements taken during inspection periods. USACE Biologists, EAS Bio, and ODFW personnel are collaborating and manually taking physical readings for weir elevations at all three fishway entrances. FSC board

readings of SSE Channel elevation continue to report discrepancies below physical staff gauge measurements. Criteria evaluations default to physical staff gauge measurements in this area. NPE FSC board no longer accurately reading weir heights, reporting measurements 1.2 and 1.1 ft higher than weirs currently positioned on sill (532 ft). NSE FSC board channel heights reflect similar and corresponding readings to staff gauge measurements. On May 29 the new fish ladder cooling pump installation was completed. The newly installed pump unit was commissioned for seasonal use June 9 at 1420 hours upon reaching criteria per FPP 2.4.2.14.i the prior evening of June 8 at 1900 hours. The fish ladder cooling pump was turned off for the season on September 19 at 0933 in accordance with FPP Chapter 8 section 2.4.2.14.

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 3 were returned to service February 22. Fish pump 2 was returned to service on February 28.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comment
X			Forebay debris load acceptable? (amount)	High 30 ft² - Low 0 ft²
	X		Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
X	X		Any debris seen in gatewells (% coverage)	11/9-4C:2%
X	X		Any oil seen in gatewells?	11/13 & 11/14 – 3C

Comments: The forebay had minimal floating debris inside the trash shear boom with the highest measurement occurring on November 8 and November 9 at 30 ft². The overall total forebay debris high occurred on November 8 and November 9 at 30 ft^2. Oil sheen incidents were reported to the control room and referred to the acting Environmental Compliance Officer and determined to be deck wash from recent rain events of EAL grease sourced from the parked area of the old trash rake crane.

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 were fully functional and deployed the week of March 18. The third round of gatewell camera inspections was completed July 8-11. Unit 2 annual camera inspections were completed July 31.

Orifices, Collection Channel, Dewatering Structure, and Flume:

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

Comments: The juvenile bypass system was watered up on March 7 without incident.

Collection Facility: The juvenile collection facility was successfully watered up on March 20. Every other day collection for condition monitoring in conjunction with secondary bypass commenced March 25 with the first sample being conducted on March 26. Every day collection began April 23 coinciding with barge transportation operations. Every-other day collection was initiated on July 8 due to water temperatures above 68°F. Every day collection resumed at 0700 on August 1st corresponding with the start of every other day trucking operations as per the FPP. Final season collection cycle and truck transport transpired the morning of November 1.

Transport Summary: Collection for fish transportation began April 23 with the first barge departure on April 24. Every day barging continued through May 16 upon transition to every other day barge operations. The last barge for the season departed on June 19. Collection for truck transport operations began August 1 with the first truck departure on August 3 and concluded with the final truck departure on November 1.

Spillway Weir: Little Goose began operation of the adjustable spillway weir (ASW) on March 1 to facilitate passage of adult steelhead overshoots. On March 21, the ASW transitioned to 625 ft. crest height spilling 24 hours 7 days per week per CBR LGS R 022724 1735. Spring spill operations began on April 3 spilling 24/7 up to the 125% gas cap. On April 16th we hit the 50 adult Chinook threshold at Ice Harbor and began spilling at performance spill (30% of outflow) from 0400 to 1200 to facilitate adult fish passage. On May 14 the ASW was positioned to Low Crest. On June 13 the ASW position changed to High Crest. Summer spill operations began as scheduled on June 21. On August 1 at 00:15 hours the ASW was closed per FPP Chapter 8 section 2.3.2.7.e.i, diminished outflows below the 35 kcfs threshold. The ASW was opened on September 1 for 4 daily hours of steelhead overshoot spill operations from 0600 to 1000 hours.

River Conditions

River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		**Daily Average Spill (kcfs)**		**Water Temperature* (°F)**		**Water Clarity (Secchi disk - feet)**	
High	Low	High	Low	High	Low	High	Low
18.5	15.4	1.4	1.1	56.2	54.0	6.0	57

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainer inspections commenced on December 1, 2023. 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, while USDA-APHIS bird abatement contract services are in place. Daily bird counts for the season ended on November 7.

Invasive Species: No invasive species have been observed on the mussel station.

Siberian Prawn: Juvenile fish collection began March 25 and ended on November 1. Siberian prawns collected in the sample at the Juvenile Fish Facility were humanely euthanized by Oregon Department of Fish and Wildlife and EAS Bio personnel, frozen and properly disposed of in a landfill.

Gas Bubble Trauma (GBT): Oregon Department of Fish and Wildlife began GBT monitoring on April 4 and completed final monitoring activities on July 23.

Fish Rescue/Salvage: No fish rescue activities took place during the report period.

Research: The Nez Perce Tribe (NPT) commenced adult steelhead kelt collection efforts on March 27 and concluded July 1.

Project: Lower Granite
Biologists: Elizabeth Holdren and Steve Lee
Dates: November 8-14, 2024

Turbine Operation

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

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
4	10/15	0700			Annual Maintenance (6-year overhaul)

Comments:

Adult Fish Passage Facility

Lower Granite Biologists and EAS staff inspected the adult fishway November 9, 12, 13, and 14.

Fish Ladder:

Yes	No	NA	Location	Criteria	Comments
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 Cooling Water Pumps Operating Satisfactorily		

Comments:

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
	X		South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0’	7.8’, 7.5’
	X		South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0’	7.9’, 7.5’
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
	X		North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 8.0’ or on sill	
X			North Powerhouse Entrance (NPE-2) Weir Depth	$\geq$ 8.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
X			North Shore Entrance (NSE-1) Weir Depth	$\geq$ 7.0’ or on sill	6.9’
X			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 7.0’ or on sill	6.9’
X			North Shore Channel/Tailwater Differential	1.0’–2.0’	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Fish ladder control system operation and configuration is an ongoing issue that began when the system was installed in 2016.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
N/A	X		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)	42.0 yd^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		ESBS/VBSs inspected this week?
		X	ESBS/VBSs 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: The facility is dewatered for winter maintenance.

Transport Summary: N/A

Spillway Weir: Steelhead fallback spill through the RSW is occurring daily for 4-consecutive hours from about 0600-1000 hours.

PIT tag interrogations: RSW detections included 64,494 juvenile and 174 adult Chinook salmon, 48,457 juvenile and 808 adult steelhead, 8,864 juvenile and 3 adult sockeye, 2,592 juvenile and 30 adult coho salmon. Juvenile bypass system detections included 10,239 juvenile and 25 adult Chinook salmon, 14,595 juvenile and 131 adult steelhead, 221 juvenile and 4 adult sockeye, 240 juvenile and 7 adult coho salmon (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
17.0	15.8	1.7	1.5	52.0	51.0	5+	5

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A

Introduced Species: No zebra/quagga muscles were detected on the trap substrate.

Avian Activity: N/A

Gas Bubble Trauma (GBT) Monitoring: N/A

Adult Fish Facility Operations: Trapping at the adult facility ended at 1400 hours November 14.

Fish Rescue/Salvage:

Research: Research at the juvenile and adult fish facilities have concluded for the season.

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 March 1 through November 30. The goal is to collect 5-20% of adult steelhead, spring/summer Chinook salmon, and sockeye salmon ascending the ladder March 1 through the end of the adult trap operation season. 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. Collection for this study ended with the last day of trap operations November 14.

Sampling and PIT tagging of Walleye by the Idaho Department of Fish and Game (IDFG) and NOAA Fisheries.

Walleye collected in the adult fish trap will be PIT tagged to investigate movement and ascension rate of walleye that successfully exit the fish ladder into the upstream reservoir. PIT tag data collected will be used to gain an understanding of the potential expansion and threat of walleye upstream of LWG to ESA-listed salmonids and guide future management actions of walleye in the Snake River Basin. To date 182 walleye have been PIT tagged at LWG adult trap as part of this study. Collection ended November 14.

Idaho Power Hells Canyon Sturgeon Recruitment:

Idaho Power Company has established and refined standardized sampling for juvenile White Sturgeon to monitor year class production (recruitment). Juvenile sampling will occur annually during the months of October and November, between RM 108 and RM 145, using small mesh, sinking style gill nets. This sampling is the continuation of previous sampling efforts over the last decade (2014-2023). Idaho Power will also incorporate baited set-lines to further understand growth and movement of juvenile White Sturgeon.