Out of Criteria – NWW Weekly Report #42 – December 13 – 19, 2024

1. McNary

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

At the Oregon shore exit, multiple exit alarms were recorded and reset on December 13. One regulating weir alarm was reset on December 15. After resolving control issues, the system was switched back to automatic mode on December 16, at 1700 hours. The roving operators adjusted the exit as needed with forebay elevation changes while the system was previously in manual mode. Issues with the control panel view touch screen were noted on December 18. The out of criterion point recorded above occurred and was immediately resolved on December 18.

Yes	No	Sill	Location	Criteria	Measurements
	X		NFEW2 Weir Depth	$\geq$ 8.0’	7.1’ to 7.5’
	X		NFEW3 Weir Depth	$\geq$ 8.0’	7.1’ to 7.5’
	X		SFEW1 Weir Depth	$\geq$ 8.0’	7.5’ to 9.9’
	X		SFEW2 Weir Depth	$\geq$ 8.0’	7.4’ to 9.9’

At the Oregon shore entrances, NFEW2 and NEFW3 were out of criteria all week. SFEW1 and SFEW2 were out of criteria on December 13 and 15. The out of criteria points may have been due to calibration drifts, set point adjustments and the juvenile system no longer supply auxiliary water. With fish pump 1 returning to service on December 16, adjustments to the entrances were made that day and December 18.

2. Ice Harbor

Yes	No	Sill	Location	Criteria	Measurements
	x		Central fish entrance channel/tailwater differential	1.0’ – 2.0’	0.7

On 16 Dec, Central fish entrance channel/tailwater differential was measured as slightly low out of criteria when observed, PLC readings were in criteria shortly after the measurement was taken, the error was most likely due to changing tailwater levels and was corrected quickly.

North Fish pump #1 tripped on lube pump failure on December 18, only one pump was running for a short period of time.

Yes	No	NA	Item	Comments
x			Any oil seen in gatewells?	

A sheen was observed in the Pump 8 Lagoon on the morning of December 13, The ECC was notified and an oil boom was installed pending testing to determine the nature of the sheen.
A slight sheen was observed in Gatewell 5B on December 17, The ECC was notified and a new oil boom was installed.

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.

3. Lower Monumental

Yes	No	Sill	Location	Criteria	Measurements
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 8.0’ or on sill	7.9 on 12/17
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 8.0’ or on sill	7.8 on 12/17

North Shore Entrance NSE-1 and NSE-2 were found out of criteria at 7.9 and 7.8 feet, respectively, during the inspection on December 17.

4. Little Goose

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.

5. Lower Granite Dam

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’	7.9’
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.9’, 0.9’

Fish ladder control system operation and configuration is an ongoing issue that began when the system was installed in 2016. North shore channel/tailwater differentials were in criteria on the biologist print out for the fish ladder control system.

An oil sheen was observed in gatewell slot 4A during the morning inspection. The environmental resource specialist determined the source was contactor hydraulic equipment used to trash rake crane removal.

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#42-2024

Project: McNary
Biologist: Bobby Johnson and Paul Bertschinger
Dates: December 13-19, 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**
3 & 4	5/29	0634	1/24/25	NA	Control system upgrades
11	12/12	0629	12/13	0610	ESBS's raised, exciter issue
13	12/16	0634	12/16	1054	ESBS's raised
14	12/16	0634	12/16	1344	ESBS's raised

Comments: RTS dates are subject to change. Slight variations outside the soft one percent criterion are not recorded here. At BPA's request, units ran outside the soft constraint on December 16, 17 and 19.

Adult Fish Passage Facilities

McNary fisheries staff performed measured inspections of the adult fishways on December 13, 15 and 18. 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'	0.9' 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'	1.0' 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 exit alarms were recorded and reset on December 13. One regulating weir alarm was reset on December 15. After resolving control issues, the system was switched back to automatic mode on December 16, at 1700 hours. The roving operators adjusted the exit as needed with forebay elevation changes while the system was previously in manual mode. Issues with the control panel view touch screen were noted on December 18. The out of criterion point recorded above occurred and was immediately resolved on December 18.

At the Washington shore exit, weir 339 remains in bypass mode. The control system continued to regulate the exit without this weir moving. One regulating weir was noted and reset on December 18.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0' – 2.0'	1.1' to 1.4'
	X		NFEW2 Weir Depth	≥ 8.0'	7.1' to 7.5'
	X		NFEW3 Weir Depth	≥ 8.0'	7.1' to 7.5'
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.4' to 1.5'
	X		SFEW1 Weir Depth	≥ 8.0'	7.5' to 9.9'
	X		SFEW2 Weir Depth	≥ 8.0'	7.4' to 9.9'
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	2.1 fps
X			Washington Entrance Head Differential	1.0' – 2.0'	1.2' to 1.6'
X			WFE2 Weir Depth	≥ 8.0'	9.1' to 9.7'
X			WFE3 Weir Depth	≥ 8.0'	9.1' to 9.8'

Comments: At the Oregon shore entrances, NFEW2 and NEFW3 were out of criteria all week. SFEW1 and SFEW2 were out of criteria on December 13 and 15. The out of criteria points may have been due to calibration drifts, set point adjustments and the juvenile system no longer supply auxiliary water. With fish pump 1 returning to service on December 16, adjustments to the entrances were made that day and December 18.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Blade angle	Auxiliary Water Supply System (AWS)
X				WA shore Wasco County PUD Turbine Unit
	X			WA shore Wasco PUD Bypass
X		X	OOS or 23°	Oregon Ladder Fish Pump 1, RTS 12/16
X			22° to 24°	Oregon Ladder Fish Pump 2
X			22°	Oregon Ladder Fish Pump 3
		X		OR North Powerhouse Pool from juvenile fishway

Comments: Fish pump 1 returned to service on December 16, at 1456 hours. The juvenile fishway is no longer suppling auxiliary flow.

Juvenile Fish Passage Facility

With ESBS removal completed, emergency bypass was terminated on December 17, at 0830 hours, when all orifices were closed, and fish were evacuated from the emergency bypass system. Winter maintenance continued.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Light near the powerhouse
X			Gatewell drawdown measured this week?	Daily until ESBS removal
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 light. New incoming debris and the debris load at the spill were minimal. Most of the debris was woody material.

No trash rack cleaning is scheduled until January, when four slots will be checked. With ESBS's raised, gatewell drawdown measurements will be biweekly.

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: ESBS's were removed from units 13 and 14 on December 16. All ESBS's are raised for maintenance.

No camera inspections were required as the screens were being raised. No issues were observed once the ESBS's were elevated. Only a few juvenile shad mortalities were seen on each screen.

ESBS screen brush programming is being updated in unit 1 to 4 at this time.

Daily VBS monitoring concluded on December 16 with all ESBS's have been raised. No high differentials were recorded, and no cleaning occurred before this date.

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

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

Comments: During emergency bypass, there were 42 orifices in use. Orifices were closed on December 17, at 0830 hours. Fish were evacuated from the upper and lower emergency bypass channels, from 1000 to 1200 and 1400 to 1500 hours, respectively.

All systems are out of service for winter maintenance.

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 continues.

TSW Operations: The TSW's in bays 19 and 20 remained closed.

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
128.2	109.4	0.0	0.0	47.0	46.0	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 did not occur this week. Rehabilitated of downstream wall dogs continued. The dogs for bay 13 are removed for repair. The dogs in bay 12 will be removed next week.

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections will occur on January 7.

Avian Activity: Casual bird observations continued during other inspections.

In the spill zone, gull and cormorant numbers were low. Most of the gulls were flying by and the cormorants were roosting around the spill basin or on the water. A few mergansers were noted.

In the powerhouse zone, gulls in low numbers were observed feeding occasionally.

In the outfall zone, gull numbers were low and cormorant numbers were stable with the birds roosting and occasionally feeding at the outfall. Approximately 50 cormorants over winter on the outfall pipe.

For the forebay zone, grebes and gulls in fluctuating numbers were observed along with a few fly by cormorants. The birds are roosting a large distance from the powerhouse. A few gulls and cormorants along with one loon were noted outside the zone.

There is no hazing occurring.

Invasive Species: The next mussel station examinations will occur on December 22.

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

Fish Rescue/Salvage**:** With the switch to emergency bypass last week and the evacuation of the emergency bypass channels this week, we estimate there were 30 adult steelhead (most appeared unclipped), one adult coho, one adult channel catfish, about 12 smallmouth bass (8 to 12 inches), two juvenile walleye (one mortality), a few sculpin and several juvenile shad (a couple of mortalities) were release to the river on December 17.

Research: PNNL will remove their spillway equipment in mid-January.

Project: Ice Harbor
Biologist: Ben McArthur
Dates: December 13-19, 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	12/17/24	1612	6-year overhaul
2	12/16/24	0809	12/16/24	1015	STS Removal
3	12/16/24	1118	12/16/24	1337	STS Removal
4	12/17/24	0717	12/17/24	0859	STS Removal
5	12/17/24	0958	12/17/24	1224	STS Removal

Comments: Units 2-5 were taken out of service one at a time to remove STSs for winter maintenance.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on December 16, 17, 19.

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’	0.7
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: On 16 Dec, Central fish entrance channel/tailwater differential was measured as slightly low out of criteria when observed, PLC readings were in criteria shortly after the measurement was taken, the error was most likely due to changing tailwater levels and was corrected quickly.

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.

North Fish pump #1 tripped on lube pump failure on December 18, only one pump was running for a short period of time.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	Average of 12 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: A sheen was observed in the Pump 8 Lagoon on the morning of December 13, The ECC was notified and an oil boom was installed pending testing to determine the nature of the sheen.
A slight sheen was observed in Gatewell 5B on December 17, The ECC was notified and a new oil boom was installed.

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: All STSs were removed on December 16 and 17.

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.

The JCC was dewatered on December 18, in preparation for winter maintenance.

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): Spill for fish passage is done for the year.

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
21.9	10.8	0	0	48	46	10.3	8.8

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers differential pressure is being monitored and the strainers are periodically cleaned for seasonal fish and lamprey.

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 dam 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: There is no research occurring currently.

Project: Lower Monumental
Biologists: Denise Griffith and Raymond Addis
Dates: December 13 – December 19, 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 1	12/12/24	0700	01/10/25		Annual maintenance
Unit 1	12/17/24	-	12/17/24	-	STS Removal/Unit already OOS for Annual
Unit 2	12/18/24	0700	12/18/24	1140	STS Removal
Unit 3	12/18/24	1155	12/18/24	1500	STS Removal
Unit 4	12/16/24	0715	12/16/24	1030	STS Removal
Unit 5	12/16/24	1035	12/16/24	1500	STS Removal
Unit 6	12/17/24	0700	12/17/24	1135	STS Removal

Comments: Unit 1 was OOS for annual maintenance when the STS was raised for winter maintenance. No time was recorded in above table for this reason.

Adult Fish Passage Facility

Lower Monumental fish facility staff inspected the adult fishways on December 16, 17 and 18.

Fish Ladder Exit:

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: 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	7.9 on 12/17
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 8.0' or on sill	7.8 on 12/17
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 2.5 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: North Shore Entrance NSE-1 and NSE-2 were found out of criteria at 7.9 and 7.8 feet, respectively during the inspection on December 17. South Powerhouse Entrance SPE-1 weir was at sill during all inspections with readings of 7.4, 6.8 and 6.5 feet respectively. South Powerhouse Entrance SPE-2 weir was at sill during all inspections with of 7.4, 6.8 and 6.5 feet respectively. South Shore Entrance SSE-1 weir was at sill during all inspections with readings of 8.0, 7.6 and 7.5 feet respectively. South Powerhouse channel velocity averaged 2.5 ft/sec.

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)	104 yrd² large woody debris along shore/exits
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: Gatewell debris was observed in slots where an STS wasn't being raised for winter maintenance.

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 pulled up for winter maintenance from December 16 – 18. On deck, STS inspections occurred on December 18 and December 19. All STS screens appeared to be fully functioning with no observable damage to the screen mesh during the inspection.

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 collection channel and primary dewatering structure were dewatered fully on December 19. On December 19 at 1000 hours, the orifices were closed to dewater the channel. The orifices will be closed until water-up in the spring. The dewatering screen cleaning brush was placed OOS on December 19 at 0930 hours in order to perform winter maintenance.

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: Spill has ended for the season.

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
22.8	9.0	0.0	0.0	44.0	44.0	7.2	7.1

*Scrollcase temperatures were taken from unit 2, as unit 1 is currently dewatered for annual maintenance.

Other

Inline Cooling Water Strainers: Cooling water strainers will be inspected again in January.

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

Invasive Species: Zebra or quagga mussel traps will be inspection again in January.

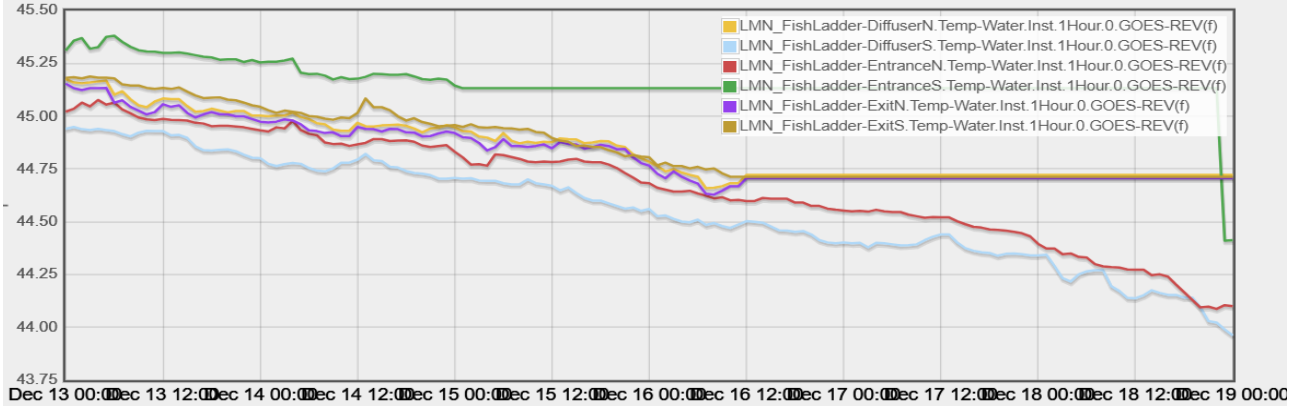
Siberian Prawn: Siberian prawn collection ended for the season.

Fish Rescue/Salvage: Fish salvage of the juvenile collection channel/primary dewatering structure occurred on December 19 from 1000 to 1120 hours. A total of 107 live adult Steelhead, 17 live juvenile Sculpin, 3 dead juvenile Sculpin, 1 live juvenile Long Nose Dace, 6 dead juvenile American Shad, and 1 live adult catfish were recovered from the channel. All live fish were released into the adult fish ladder/tailwater return pipe. During the dewater, a cable used to raise and lower a screen covering the DF-8 return to river pipe broke making it difficult to lift the screen to release the fish. After approximately 15 minutes, three Corps employees were able to lift the screen manually opening the entrance to the release pipe. During the process, the fish were kept in the juvenile collection channel water. All fish appeared unharmed during the operation.

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, Latricia Rozeboom
Dates: December 13 – December 19, 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**
1	12/02/2024	0630	12/24/2024	17:00	Unit Annual
3	8/19/2024	07:00	11/30/2025	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, returning in January to continue Unit 5 repairs with an ERTS date to January 31, 2025. Unit 3 Annual 6-year overhaul extended for oil leak precautionary measures.

Adult Fish Passage Facility

USACE staff inspected the adult Fishway on December 15, and 19.

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			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 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 4164 ft² - Low 275 ft²
	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 with the highest measurement occurring on December 19 at 414 ft². The overall total forebay debris high occurred on December 19 at 4164 ft².

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. ESBS screens pulled and visually inspected on units 1, 3, and 5 the week of December 9th. ESBS screens pulled on units 2, 4, and 6 December 17.

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 and dewatered for seasonal winter maintenance on December 18.

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 and ceased November 15 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
25.3	11.8	0.0	0.0	44.9	44.5	6.0	5.5

*Ladder temperature.

Other

Inline Cooling Water Strainers: The 2024 season inline cooling strainer inspections commenced on December 1, 2023, and continued through July 28, 2024, with results submitted to the District. Season 2025 inline cooling strainer inspections commenced November 14, 2024, and will continue in accordance with the Fish Passage Plan with results submitted to 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: Fish salvage activities occurred in the Juvenile collection channel and the primary dewaterer on December 18. Fish salvage underneath the primary dewaterer and baffle boards occurred December 19.

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: December 13-19, 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**
1	12/02	0804	12/19	1326	Annual Maintenance

Comments: Units were rolled out of service to remove ESBSs December 16-18.

Adult Fish Passage Facility

Lower Granite Biologists inspected the adult fishway December 16, 17, and 18.

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:

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’	7.9’
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’	
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	
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.9’, 0.9’
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. North shore channel/tailwater differentials were in criteria on the biologist print out for the fish ladder control system.

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)	200.0 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: An oil sheen was observed in gatewell slot 4A during the morning inspection. The environmental resource specialist determined the source was contactor hydraulic equipment used to trash rake crane removal.

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: The south side vertical screen cleaning brush is out of service. The south side vertical screen is being cleaned manually while parts are on order. Floor screen cleaner brush 3 chain came off sprocket and is currently out of service. Juvenile collection channel orifice gallery lights were shut off as ESBSs were removed beginning with unit 6 on December 16. The juvenile bypass system was changed to emergency bypass to flush adult steelhead from the cannel at 0840 hours December 18. The collection channel was dewatered and fished from 1000-1045 hours December 19.

Collection Facility: The facility is dewatered for winter maintenance.

Transport Summary: N/A

Spillway Weir: N/A

PIT tag interrogations: RSW detections for the season included 64,493 juvenile and 183 adult Chinook salmon, 48,459 juvenile and 808 adult steelhead, 8,864 juvenile and 3 adult sockeye, 2,592 juvenile and 31 adult coho salmon. Juvenile bypass system detections included 10,256 juvenile and 27 adult Chinook salmon, 14,599 juvenile and 144 adult steelhead, 221 juvenile and 4 adult sockeye, 240 juvenile and 10 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
24.4	11.5	0.0	0.0	5.0	5.0	42.0	42.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainer inspections are scheduled for December 23.

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: N/A

Fish Rescue/Salvage: A fish rescue was performed at the juvenile collection channel from 1000-1040 hours December 19. All salmonids were safely flushed to the river through the emergency bypass hatch. One decomposed sunfish was removed from the channel.

Research: N/A