Out of Criteria – NWW Weekly Report #31 – September 27 – October 3, 2024

1. McNary

Yes	No	Sill	Location	Criteria	Measurements
	X		NFEW2 Weir Depth	≥ 8.0’	7.9’ to 8.1’
	X		NFEW3 Weir Depth	≥ 8.0’	7.8’ to 8.0’
	X		WFE3 Weir Depth	≥ 8.0’	7.7’ to 8.0’

NFEW2 was out of criterion on September 27 and 29. NFEW3 was out of criterion on September 29. These out of criteria points may be due to calibration drifts. WFE3 was out of criterion on October 1. This may be due to the PUD unit being in bypass and low tailwater elevations.

Fish pump 1 remained out of service for a scheduled 5-year overhaul. Return to service dates are subject to change. For the isophase replacement at units 13 and 14, transmission line 6 and the Wasco PUD unit remained out of service. The unit will return to service in November with units 13 and 14.

2. Ice Harbor

Yes	No	Sill	Location	Criteria	Measurements
	x		South fish entrance channel/tailwater differential	1.0’ – 2.0’	2.1’
	x		Central fish entrance channel/tailwater differential	1.0’ – 2.0’	0.7’
	x		North fish entrance channel/tailwater differential	1.0’ – 2.0’	2.2’ 2.2’ 2.2’

The water velocity meter was observed to not be updating its velocity readout on October 1. The meter was rebooted the next day to get it functioning.

The north fish entrance channel/tailwater differential was above criteria on all three inspections due to low tailwater levels. Two north shore auxiliary water supply (AWS) pumps are normally operated to meet criteria, and the north channel/tailwater differential would most likely be below criteria with only one pump running unless tailwater was very low.

The south fish entrance channel/tailwater differential was slightly above criteria on October 1 because of low tailwater level. At least five south shore AWS pumps need to be running to keep water flowing over the stationary weirs that are just above tailwater level.

The central fish entrance channel/tailwater differential was below criteria on October 2. This was most likely due to spill making it difficult to get an accurate tailwater level reading.

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 to remove the pump bulkhead.

Yes	No	NA	Item	Number open and in service
	x		Dewaterer 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.

The light for orifice 6CN was found to be burned out on September 28. Orifice 6CS was already open with its light on. The light for 6CN was replaced on October 2.

3. Lower Monumental

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

4. Little Goose

Yes	No	Sill	Location	Criteria	Measurements
	X	X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 7.0’ or on sill	10/3-4.9
	X	X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 7.0’ or on sill	10/3-5.0
X	X		North Shore Entrance (NSE-1) Weir Depth	≥ 6.0’ or on sill	9/28-5.8
X	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0’ or on sill	9/28-5.8
X	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	10/3-0.7

5. Lower Granite Dam

Yes	No	Sill	Location	Criteria	Comments
	X		South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	7.9, 7.7’
	X		South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	7.9, 7.7’
	X		North Powerhouse Entrance (NPE-1) Weir Depth	≥ 8.0’ or on sill	7.1’, 7.8’, 7.9’
	X	X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0’ or on sill	7.3’
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	6.8’
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	6.8’

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#31-2024

Project: McNary
Biologist: Bobby Johnson and Paul Bertschinger
Dates: September 27-October 3, 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	11/18	NA	Isophase replacement and headgate work
3 & 4	5/29	0634	11/15	NA	Control system upgrades
5	8/21	1057	10/10	NA	Turbine noise, annual maintenance
11	10/1	0632	10/1	1722	Brush maintenance
1, 8, 9 & 10	10/1	1002	10/1	1146	ESBS camera inspections, rotated through units

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 generally at BPA's request.

Adult Fish Passage Facilities

McNary fisheries staff performed measured inspections of the adult fishways on September 27, 29, and October 1. Adult fish counting continued. Video review of nighttime lamprey passage concluded on September 30.

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'	1.0' to 1.1'
X		Washington Count Station Differential	0.0' to 0.5'	0.2' to 0.3'

Comments: Debris loads were minimal near both exits. The general maintenance staff came in on Saturday to clean picketed leads.

At the Washington shore exit, weir 339 remains in bypass mode. The control system continued to regulate the exit without this weir moving.

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'	7.9' to 8.1'
	X		NFEW3 Weir Depth	≥ 8.0'	7.8' to 8.0'
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.3' to 1.6'
X			SFEW1 Weir Depth	≥ 8.0'	8.0' to 8.2'
X			SFEW2 Weir Depth	≥ 8.0'	8.0' to 8.3'
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	2.1 fps
X			Washington Entrance Head Differential	1.0' – 2.0'	1.4' to 1.5'
X			WFE2 Weir Depth	≥ 8.0'	9.1' to 9.4'
	X		WFE3 Weir Depth	≥ 8.0'	7.7' to 8.0'

Comments: NFEW2 was out of criterion on September 27 and 29. NFEW3 was out of criterion on September 29. These of criteria points may be due to calibration drifts. WFE3 was out of criterion on October 1. This may be due to the PUD unit being in bypass and low tailwater elevations.

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	NA	Oregon Ladder Fish Pump 1, return to service Oct 14
X			21°	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. For the isophase replacement at units 13 and 14, transmission line 6 and the Wasco PUD unit remained out of service. The bypass system has been functioning well. The unit will return to service in November with units 13 and 14.

Juvenile Fish Passage Facility

Alternating between primary and secondary bypass along with sample collection concluded on September 30, at 0700 hours, with the start of fall primary bypass season. There were no smolts in the sample examined on September 30.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal 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, new incoming debris and the debris load at the spill were minimal. Most of the debris was aquatic vegetation and has dissipated.

No trash rack cleaning is scheduled.

The slots in units 7, 13, at 14A and 14B slots remained covered. This improved isophase contractor access by units 13 and 14.

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 except 14A slot. 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. With units 3, 13 and 14 being out of service, the ESBS's remained in manual mode so the brush cycle sequence would not occur. Testing of ESBS screen brush programming continued with the screens in unit 4. ESBS camera inspections in units 1, 8, 9, and 10 revealed no problems on October 1.

Daily VBS monitoring continued, and no high differentials were recorded. Two screens were cleaned on October 2. No fish were observed.

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 as required. Orifice valve operator and orifice valve rehabilitations continued. This fall, we should have about 40 of the 84 orifices rehabilitated. Orifice valve oil reservoirs were repaired on September 30.

A low water elevation alarm came in and was reset on October 3, at 0036 hours. There appears to be no issues at this time. The channel will continue to be monitored.

The adult flush line valve remained open. The capacitor required to return the valve to automatic service will be ordered as soon as possible. The additional water during primary bypass is not a serious issue.

Bypass Facility:

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

*Comments: The sample system was being used when in secondary bypass for sample collection until September 30. The PIT tag system will not be in use again this season, which is similar to past years.

There were four juvenile lamprey and four subyearling Chinook smolts bypassed before the end of sample season. Juvenile shad were the predominate species seen overall.

TSW Operations: The TSW bay 19 remained closed. The TSW in bay 20 was opened every morning for four hours for adult fallback passage.

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
85.0	62.4	1.8	1.6	68.0	66.0	6.0	6.0

Comments: The above data is from the control room, with the data day starting at 0000 hours. The smolt monitoring staff concluded data collection on September 30. No spill in excess of available powerhouse capacity occurred this week.

Rehabilitated of downstream wall dogs continued. The dogs from bays 14 and 17 are being rehabilitated currently. Scheduled crane and hoist maintenance also continued.

Other

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

Avian Activity: Bird counting concluded on September 30, with the sampling season. The last results of the year are reflected in Table 3 below. Future observations will be of a casual nature.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
September 27	Spill	356	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	19	31	0	0	0
	Forebay	0	0	0	0	0
September 28	Spill	85	1	0	0	0
	Powerhouse	25	0	0	0	0
	Outfall	15	30	0	0	0
	Forebay	0	0	0	0	0
September 29	Spill	210	6	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	2	34	0	0	0
	Forebay	0	0	0	0	0
September 30	Spill	180	10	0	0	0
	Powerhouse	13	0	0	0	0
	Outfall	70	55	0	0	0
	Forebay	0	0	0	0	0

In the spill zone, gull numbers fluctuated. This is probably due to the juvenile shad out migration. Most gulls were roosting with feeding in the TSW flow at times. Some cormorants were noted. The birds were mostly roosting and feeding when the TSW was closed.

In the powerhouse zone, gulls were occasionally observed roosting and/or feeding.

In the outfall zone, gull and cormorant numbers slowly increased. Most birds were roosting, but occasional feeding was noted by both species.

For the tailwater area, casual observations during the rest of the week were very similar. The gulls appeared to move freely between the three zones, with TSW closure effecting that movement.

For the forebay zone, no birds were observed during counting. However, a few gulls and a large number of grebes were noted during casual observations at times. Small gull flocks and a few cormorants were noted outside the zone with gull numbers fluctuating.

The LRAD remained redeployed and was somewhat effective.

The laser on the navigation lock wing wall opposite the outfall was shipped to the manufacture for a repair evaluation.

The two distress calls on the navigation lock wing wall remained in service and have been functioning well.

There is no other hazing.

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

Siberian Prawn: One prawn was observed in the samples this week. The final season total was 22.

Fish Rescue/Salvage**:** There were 69 live channel catfish removed from unit 5's draft tube on September 30. The fish were from about 12 inches to about 15 pounds.

Research: PNNL will remove their spillway equipment at a later date.

For the CRITFC study, tissue samples were taken from one juvenile lamprey this week. The final yearly total was 517 fish. All fish were released unharmed.

Project: Ice Harbor
Biologist: Ken Fone
Biological Science Technician: Ben McArthur
Dates: September 27- October 3, 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
3	9/9/24	1000	---	---	Annual Maintenance; indications of insulation degradation

Comments: None.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on September 30, October 1, and 2.

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’	2.1’
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’	2.2’ 2.2’ 2.2’

Comments: The lamprey passage structure at south fish entrance #2 was closed for the season on October 1.

The water velocity meter was observed to not be updating its velocity readout on October 1. The meter was rebooted the next day to get it functioning.

The north fish entrance channel/tailwater differential was above criteria on all three inspections due to low tailwater levels. Two north shore auxiliary water supply (AWS) pumps are normally operated to meet criteria, and the north channel/tailwater differential would most likely be below criteria with only one pump running unless tailwater was very low.

The south fish entrance channel/tailwater differential was slightly above criteria on October 1 because of low tailwater level. At least five south shore AWS pumps need to be running to keep water flowing over the stationary weirs that are just above tailwater level.

The central fish entrance channel/tailwater differential was below criteria on October 2. This was most likely due to spill making it difficult to get an accurate tailwater level reading.

Auxiliary Water Supply 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 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 8 square yards
x			Gatewell drawdown measured this week?	
x			Gatewell drawdown acceptable	
x			Any debris seen in gatewells (% coverage)	0-3% 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		Dewaterer 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 light for orifice 6CN was found to be burned out on September 28. Orifice 6CS was already open with its light on. The light for 6CN was replaced on October 2.

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 0600 hours to 1000 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
18.0	14.4	1.6	1.3	68	67	8.6	7.4

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Cooling water strainer differential pressure is routinely monitored. The strainers will be cleaned if there is indication of clogging caused by debris or juvenile shad, and inspection results will be reported.

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: No on-site research is occurring.

Project: Lower Monumental
Biologists: Denise Griffith and Raymond Addis
Dates: September 27 – October 3, 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	10/2/24	1330	10/2/24	1600	STS inspections
Unit 2	9/30/24	0900	10/10/24	ERTS	Annual maintenance
Unit 3	10/1/24	1315	10/1/24	1500	STS inspections
Unit 4	10/2/24	0755	10/2/24	1030	STS inspections
Unit 5	9/23/24	0700	11/4/24	ERTS	DC low voltage upgrade
Unit 6	7/08/24	0850	10/3/24	1615	DC low voltage upgrade

Comments: None.

Adult Fish Passage Facility

Lower Monumental fish facility and EAS staff inspected the adult fishways on September 27, 28 and 29.

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	
		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 5.9, 5.8 and 7.4 feet respectively. South Powerhouse Entrance SPE-2 weir was at sill during all inspections with of 5.9, 5.8 and 7.4 feet respectively. South Shore Entrance SSE-1 weir was at sill during all inspections with readings of 6.7, 7.8 and 8.2 feet respectively.

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)	108 yrd²
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 5%
		X	Any oil seen in gatewells?	

Comments: None

STSs/VBSs:

Yes	No	NA	Item
X			STSs deployed in all slots and in service?
	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. STSs were inspected for all units between October 1 and 2. All were in good operational condition.

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 facility ran in primary bypass for two days and secondary bypass for condition sampling the third day, every-third day, until 0700 on October 1. At that time the collection season ended, and the collection/bypass swing gate was left in primary bypass. A total of 6 fish were collected with 6 being bypassed this reporting period.

The supply valves for the JFF were closed at dewatering structure at 0830 on October 3.

The flush water pipe for the truck transport recovery tank was removed during a repair and the truck tank cannot be used until this is addressed. It will be replaced during the winter.

Due to the issues with the lamprey overshoot system, raceways 2 through 4 were drained to take the pressure off the system. An engineer from the powerhouse said the lamprey overshoot pipe adds so much water to the main flume piping that it creates a pressurized system. It is not deemed as a critical issue and will not impede fish passage. Plans for the repair will occur over the winter maintenance period.

The start of some winter maintenance has begun. Pressure washing of A and B sample holding tanks was completed on October 2. The separator was done on October 3, along with touch ups to other tanks and flumes.

The wet lab's anesthetizing system was disinfected on October 2.

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

Spillway Weir: Surface spill for fall steelhead continues: RSW spill (~7.5kcfs) for 4 hours in the morning, 7 days a week.

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
17.8	14.4	1.4	1.3	65.5	65.0	6.9	5.3

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers inspections are done until December.

Avian Activity: Tailrace counts of foraging piscivorous birds at Lower Monumental Dam began on April 1.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
9/27/2024	1000	109	4	0	0	0
9/28/2024	1000	61	6	0	0	0
9/29/2024	958	131	13	0	0	0
9/30/2024	1250	40	43	0	0	0

Comments: Bird hazing by USDA personnel ended on June 30. Daily bird observations ended on September 30.

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

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by EAS personnel, frozen and properly disposed of in a landfill. Daily and total Siberian prawn counts at Lower Monumental Dam for this reporting period are reported below.

Date	Sample (euthanized)	Collection*
9/27/2024	---	---
9/28/2024	28	56
9/29/2024	---	---
9/30/2024	---	---
10/1/2024	59	118
Total	87	174

*Collection refers to extrapolated values based on sampling percent.

Fish Rescue/Salvage: No fish rescue occurred this reporting period.

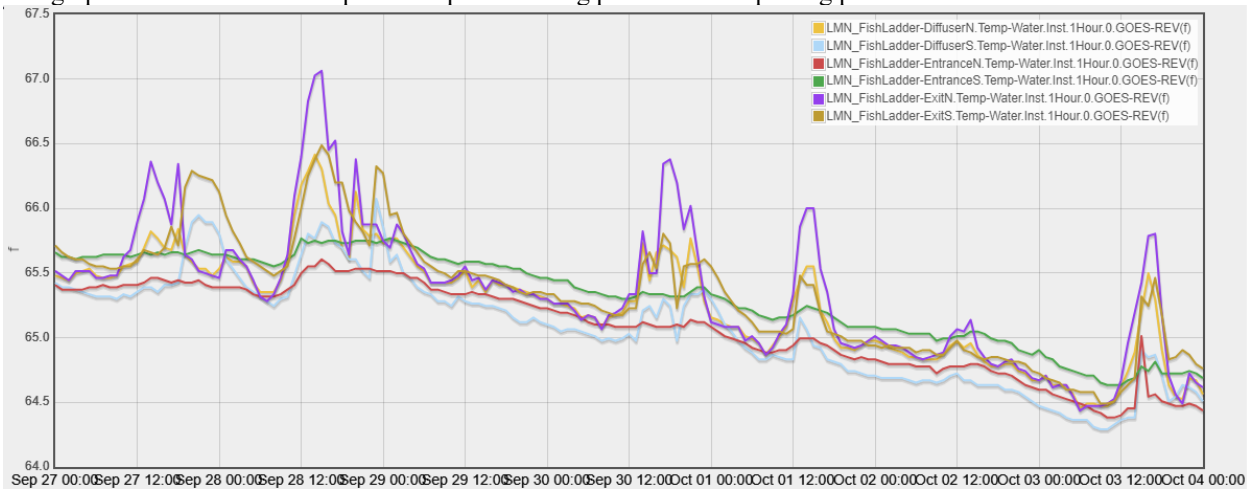
Research: The collection of lamprey for the PNNL study of the behavior and survival of Pacific lamprey has ended.

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, Brooke Gerard
Dates: September 27 – October 3, 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

EAS Bio staff inspected the adult Fishway on September 28, 29, and October 3.

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	10/3-4.9
	X	X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 7.0’ or on sill	10/3-5.0
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
X	X		North Shore Entrance (NSE-1) Weir Depth	≥ 6.0’ or on sill	9/28-5.8
X	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0’ or on sill	9/28-5.8
X	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	10/3-0.7
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. FSC board readings of SSE Channel elevation continue to report discrepancies an average of 8.2 feet below physical staff gauge measurements documenting the same channel

elevation. Criteria evaluations default to physical staff gauge measurements in this area. All other channel staff gauge and NPE and NSE FSC board channel heights reflect similar and corresponding readings. 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 90 ft² - Low 0 ft²
	X		Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
X	X		Any debris seen in gatewells (% coverage)	9/27-2C:1% 10/2-2B:1% 2C:1% 3A:2% 10/3-2A:5% 2B:1% 2C:5%
	X		Any oil seen in gatewells?	

Comments: The forebay had minimal floating debris inside the trash shear boom with the highest measurement occurring on October 3 at 50 ft². The overall total forebay debris high occurred on September 28 at 90 ft^2.

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. During this reporting period a total of 73 fish were collected, 67 were trucked, 0 were bypassed, and there was 0 sample or facility mortalities. The descaling and mortality rates were 7.9% and 0.0%, respectively. The collection and transport facility operated within criteria; 1 adult lamprey was removed from the collection facility during this report period.

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.

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
17.7	15.0	1.3	1.0	65.9	65.2	6.0	5.9

*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 are scheduled to begin April 1, while USDA-APHIS bird abatement contract services are in place.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
9-27	0745	15	0	0	0
9-28	1100	23	0	0	0
9-29	0730	47	2	0	0
9-30	0903	11	6	0	0
10-1	0800	52	4	0	0
10-2	0800	68	4	0	0
10-3	0800	43	1	0	0

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

Siberian Prawn: Juvenile fish collection will begin March 25. Siberian prawns collected in the sample at the Juvenile Fish Facility will be humanely euthanized by Oregon Department of Fish and Wildlife and EAS Bio personnel, frozen and properly disposed of in a landfill.

Date	Sample	Collection*
9-27	45	45
9-28	73	73
9-29	66	66
9-30	90	90
10-1	78	78
10-2	98	98
10-3	155	155
Totals	605	605

*Collection and sample numbers are equal when sample rates change to 100%

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: September 27 – October 3, 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**
3	09/16	0700	10/03	0748	Annual maintenance

Comments:

Adult Fish Passage Facility

Lower Granite Biologists and EAS staff inspected the adult fishway September 27, 28, 29 and October 2.

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, 7.7’
	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	7.1’, 7.8’, 7.9’
	X	X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0’ or on sill	7.3’
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
	X		North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	6.8’
	X		North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	6.8’
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. LWG is looking into inhouse design and install of fish ladder control system based on the system used at LMN. South shore channel velocity readings have been reading lower that the north shore this season. This is likely due to a faulted sensor as the north collection channel has been in criteria.

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)	20 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: VBS mesh in gatewell slot 3A was replaced during unit 3 annual outage.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

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

Comments:

Collection Facility: Collection for truck transport continues.

Transport Summary: Truck transport continues with LWG supporting transport from LGO as necessary with trucks departing every other day on even days in September and October.

Spillway Weir: The RSW is operated daily for 4-consecutive hours from about 0600-1000 hours.

PIT tag interrogations: RSW detections included 64,396 juvenile and 152 adult Chinook salmon, 48,222 juvenile and 701 adult steelhead, 8,864 juvenile and 3 adult sockeye, 2,592 juvenile and 7 adult coho salmon. Juvenile bypass system detections included 10,179 juvenile and 19 adult Chinook salmon, 14,580 juvenile and 106 adult steelhead, 221 juvenile and 4 adult sockeye, 240 juvenile and 1 adult coho salmon through October 3 (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
18.5	16.6	1.8	1.5	64.0	63.5	5.0	5.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A

Introduced Species: No zebra/quagga muscles were detected on the trap substrate. Siberian prawns collected in the sample included 1,548 live and 194 mortalities this report week with a season total collection of 381,572. All live Siberian prawns are euthanized.

Avian Activity: Biologist daily piscivorous bird counts began April 1.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
Sep 27	0905	1	6	0	0
Sep 28	1115	1	5	0	0
Sep 29	1040	2	5	0	0
Sep 30	1430	8	13	0	0
Oct 01	1446	0	6	0	0
Oct 02	1452	1	2	0	0
Oct 03	0752	0	0	0	0

Gas Bubble Trauma (GBT) Monitoring: N/A

Adult Fish Facility Operations: Collection for sampling continues with fish being collected 24-hours per day. Broodstock collection and transport from LWG ended September 16. Broodstock collection for NPT and WDFW included at total of 3,745 fall Chinook Salmon collected at LWG adult fish facility. NPT transported 2,789 Chinook with 1,748 being female and 1,041 being male. WDFW transported a total of 956 Chinook with 541 being female and 415 being male. Genetic samples and scales will be taken from fall Chinook with adipose intact that do not have coded wire tags for the remainder of the season.

Fish Rescue/Salvage: NA.

Research:

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

The goal of this project is to PIT tag up to 4000 unclipped adult Chinook and 4000 unclipped adult steelhead collected in the adult trap daily sample for dispersal monitoring.

Sampling of Steelhead, Chinook salmon, and Sockeye salmon by the Idaho Department of Fish and Game (IDFG) and NOAA Fisheries for Biological data collection.

Upriver migrating steelhead, spring/summer Chinook salmon, and sockeye salmon are collected from the adult trap beginning 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-November 30. 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.

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.

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.

United States Geological Survey (USGS) Wild Juvenile Fall Chinook Salmon Genetics Sampling:

The goal of this study is to determine the origin of unmarked subyearling Chinook salmon in LWG sample. The USGS has developed an approach to estimate the daily abundance of natural origin subyearling Chinook salmon passing LWG each year. The goal is to collect fin clips from 15 unmarked subyearling on Monday's, Wednesday's, and Friday's May 15 to August 31. Genetic samples will be used to determine origin of unclipped subyearling Chinook salmon thus validating estimates of origin and model abundance.

PNNL Juvenile Pacific Lamprey Passage Behavior and Survival study:

Juvenile lamprey (macropthalmia) were collected from LWG sample, as needed, to meet PNNL downriver study objectives. LWG collected a total of 1502 juvenile lamprey this season to support this study.

PNNL has requested that LWG collect additional juvenile lamprey to be used for testing a juvenile lamprey collection structure.

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 1000 juvenile and 500 larval Pacific lamprey, not to exceed 10 juvenile and 5 larvae daily during the routine smolt monitor condition sampling from March through September. 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 program's efficacy and assist with guiding future management. LWG SMP have collected genetic samples from 957 juvenile and 500 larval lamprey 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. Idaho Power Company commenced sampling for white sturgeon in the Snake River between Hells Canyon and Lower Granite dams May 7. This is the first of a two-year sampling effort to assess the current status of white sturgeon in the Hells Canyon Reach. Idaho Power crews will be sampling anywhere between Hells Canyon and Lower Granite dams, including a 23-mile section of

the lower Salmon River from its confluence to Snowhole Rapid. Idaho Power conducts these assessments every ten years compliant with measures outlined in Idaho Power's Snake River White Sturgeon Conservation Plan. Sampling will continue through October 17.

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.