Out of Criteria – NWW Weekly Report #25 – August 16 – 22, 2024

1. McNary

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

NFEW2 and NFEW3 were out of criteria on August 18. These out of criteria points may be due to low tailwater elevations and calibration drifts.

Fish pump 1 remained out of service for a scheduled 5-year overhaul. Return to service dates are subject to change.

A high-water alarm came in on August 21, at 1736 hours. The alarm cleared quickly. The channel elevation and the transition screen brush continued to be monitored.

2. Ice Harbor

Yes	No	Sill	Location	Criteria	Measurements
	x		South fish entrance channel/tailwater differential	1.0’ – 2.0’	2.1’, 2.1’
	x		North fish entrance channel/tailwater differential	1.0’ – 2.0’	2.9’, 2.3’

North fish entrance channel/tailwater differential was above criteria on August 19 and 22. The south fish entrance channel/tailwater differential was slightly above criteria on August 19 and 22. The high entrance heads were primarily caused by low tailwater levels. The entrance heads were in criteria on August 20 when tailwater was higher.

The water velocity meter was found to not be updating its velocity reading on August 20. An electrician rebooted the meter the next day to fix the immediate problem. The long-term solution will be to replace the meter and sensor when the ladder is unwatered for inspection and maintenance this winter.

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 is being replaced with a refurbished one.

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 rebuilt to enable it to work in automatic mode. 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	NA	Item	Number open and in service
	X		Orifices operating satisfactory?	18
	X		Dewaterer and cleaning systems operating satisfactory?	

Powerhouse operator found the attractant light out on orifice 2A7 on August 19. Gatewell orifice was switch to 2A8 at the time. Powerhouse electrical person replaced a burnt-out light bulb, and orifices were swapped back afterwards, also on August 19.

4. Little Goose

Yes	No	Sill	Location	Criteria	Measurements
X	X		North Shore Entrance (NSE-1) Weir Depth	$\geq$ 6.0' or on sill	8/20- 5.5

5. Lower Granite Dam

Fish ladder control system operation and configuration is an ongoing issue that began when the system was installed in 2016. LWG is moving forward with inhouse design and install of fish ladder control system based on the system used at LMN. Efforts of the electrical crew continue to bring the ladder back into criteria however the control system drifts out of calibration shortly after. The fish ladder was designed to operate between 633' and 638' MSL with a minimum operating elevation of 633.0'.

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#25-2024

Project: McNary
Biologist: Bobby Johnson and Paul Bertschinger
Dates: August 16-22, 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
8	8/19	0713	8/23	NA	Annual maintenance
6	8/20	0957	8/20	1024	ESBS camera inspections
7	8/20	1105	8/20	1134	ESBS camera inspections
5	8/21	1057	NA	NA	Turbine noise

Comments: RTS dates are subject to change. Unit 5 has an undetermined return date. Access to the area needed to dewater the unit may have been contaminated when sand blasting containment in the draft tube of station service unit 2 failed. The hard one percent criteria remained in place. The soft one percent criteria will begin on September 1. The sawtooth unit priority pattern for temperature abatement will conclude on September 1 just after temperature monitoring concludes.

Adult Fish Passage Facilities

McNary fisheries staff performed measured inspections of the adult fishways on August 16, 18 and 21. Adult fish counting, and video review of nighttime lamprey passage continued.

Fish Ladder Exits:

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

Comments: Debris loads were very light (mostly woody material and aquatic vegetation) near the Oregon exit and minimal (mostly aquatic vegetation) near the Washington exit. Due to increased aquatic vegetation, the general maintenance staff has been coming in on Saturday to clean the picketed leads at both exits. The general maintenance crew was called in on August 17, at 2000 hours, to clean the Washington exit leads. They also cleaned the Oregon side.

At the Washington shore exit, weir 339 remains in bypass mode. The control system continued to regulate the exit without this weir moving. Multiple exit alarms came in and were reset on August 16 and 18.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0' – 2.0'	1.4' to 1.5'
	X		NFEW2 Weir Depth	≥ 8.0'	7.8' to 8.0'
	X		NFEW3 Weir Depth	≥ 8.0'	7.8' to 8.0'
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.5' to 1.6'
X			SFEW1 Weir Depth	≥ 8.0'	8.1'
X			SFEW2 Weir Depth	≥ 8.0'	8.0' to 8.1'
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	1.8 fps
X			Washington Entrance Head Differential	1.0' – 2.0'	1.5' to 1.7'
X			WFE2 Weir Depth	≥ 8.0'	10.2' to 10.5'
X			WFE3 Weir Depth	≥ 8.0'	8.8' to 9.1'

Comments: NFEW2 and NFEW3 were out of criteria on August 18. These out of criteria points may be due to low tailwater elevations and calibration drifts.

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 August 30
X			22° to 25°	Oregon Ladder Fish Pump 2
X			23° to 24°	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.

Juvenile Fish Passage Facility

The juvenile system alternates between primary and secondary bypass every 24 hours at 0700 hours. There was one interruption in this schedule. The system was in secondary bypass, with sample gates off, three times for training on August 19, from 1517 to 1542 hours. The sawtooth unit pattern remained in effect. Sample tank mortality was 5.6 percent (one smolt) on August 19.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to very 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 powerhouse debris was minimal to very light. Debris (woody material and aquatic vegetation) did move from the Oregon shore and back. Spillway debris remained minimal due to much of it being spilled. New debris loads (mostly aquatic vegetation) were minimal. No trash rack cleaning is scheduled.

The emergency bulkhead remained in 14A slot. The slots in unit 7 remained covered. The slots at 11C, 12A and 12B were uncovered on August 21. The slots in unit 13, at 14A and 14B slots were covered on August 22. This

will improve contractor access by units 13 and 14. The algae blooms in units 3, 4 and 13 along with 14C slot dissipated by August 22.

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. With the emergency bulkhead in 14A slot, the ESBS remained uninstalled. 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. Camera inspections occurred in units 6, 7, and 8 on August 20. No issues were found. Testing of ESBS screen brush programming continued with the screens in unit 4.

Daily VBS monitoring continued, and no high differentials were recorded. One screen was cleaned on August 22. 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: With headgate testing in 14A slot, the orifices in unit 14 and in 13C slot remained closed. Make-up north orifices were opened in 12B, 12C, 13A, and 13B slots. Orifices were adjusted for VBS cleaning as required.

A high-water alarm came in on August 21, at 1736 hours. The alarm cleared quickly. The channel elevation and the transition screen brush continued to be monitored.

Bypass Facility:

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

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

There were 24 juvenile lamprey and 440 smolts bypassed with subyearling Chinook being the dominate race/species this week. Juvenile shad were the predominate species seen overall.

TSW Operations: The TSW's in bays 19 and 20 remained open. Both TSW's are attached to a hoist. New this year, both TSW's will remain open through the spill season. No switch to standard gates occurred.

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
131.1	106.4	26.6	19.7	70.7	69.7	6.0	6.0

Comments: The above data is from the smolt monitoring staff, with the data day starting at 0700 hours. Water clarity comes from the control room.

The smolt monitoring staff continues to monitor water temperature, which will conclude on August 31, throughout the juvenile system. Their results are stated daily and weekly in separate reports. The temperature probe in 13B slot was removed due to the slot being covered. Adult ladder water temperatures are reported by an automated system year-round.

The summer spill season continued with 20 kcfs (both TSW's open in bays 19 and 20) being spilled. However, due to flow in excess of available powerhouse capacity, the spill volume was occasionally above that value. The summer season will conclude on September 1, at 0001 hours. Later that morning, at 0500 hours, the TSW in bay 20 will begin to be used for adult fallbacks.

Rehabilitated of downstream wall dogs continued. Wall dogs were installed in bay 21 on August 19. The dogs in bay 14 were removed on August 20. No flow adjustments were required. The dogs for bay 17 are being rehabilitated.

Other

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

Avian Activity: Bird counting continued, and the results are reflected in Table 3 below.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
August 16	Spill	86	0	0	2	0
	Powerhouse	1	0	0	0	0
	Outfall	57	0	0	0	0
	Forebay	0	0	0	0	0
August 17	Spill	65	0	0	0	0
	Powerhouse	4	0	0	0	0
	Outfall	25	0	0	0	0
	Forebay	2	0	0	0	0
August 18	Spill	275	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	30	2	0	0	0
	Forebay	0	0	0	0	0
August 19	Spill	93	5	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	36	1	0	0	0
	Forebay	0	0	0	0	0
August 20	Spill	160	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	30	3	0	0	0
	Forebay	0	0	0	0	0
August 21	Spill	230	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	85	2	0	0	0
	Forebay	0	0	0	0	0
August 22	Spill	156	1	0	0	0
	Powerhouse	3	0	0	0	0
	Outfall	27	0	0	0	0
	Forebay	0	0	0	2	0

In the spill zone, gulls in large numbers were noted along with a few pelicans and cormorants. A few terns were noted during other inspections. Most of the birds were feeding or roosting.

In the powerhouse zone, a few roosting gulls were noted. Two mergansers were noted one day.

In the outfall zone, gulls in increasing numbers and a few cormorants were noted roosting. No feeding was observed. One osprey was noted roosting. The nesting ospreys appeared to have been unsuccessful.

For the forebay zone, a couple for gulls and pelicans were observed. Only the pelicans were feeding. A few gulls, cormorants, and ospreys were noted outside the zone.

With the osprey nest being unsuccessful, the LRAD will be redeployed on August 23.

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 mussel station examinations revealed no issues on August 21.

Siberian Prawn: Two prawns were observed in the sample this week. This brings the season total to 16.

Fish Rescue/Salvage**:** None occurred this week.

Research: PNNL will remove their study trailers on August 23. Their tagging and spillway equipment will be moved at a later date.

For a CRITFC study, there were tissue samples removed from six juvenile lamprey collected at the facility this week. The yearly total is 505 fish, which were returned to the river unharmed.

Project: Ice Harbor
Biologist: Ken Fone
Biological Science Technician: Ben McArthur
Dates: August 16-22, 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
2	8/18/24	0318	8/19/24	1700	Submersible traveling screen (STS) motor amp trip, STS inspection and replacement
4	8/19/24	1305	---	---	Annual Maintenance
6	8/20/24	0825	8/20/24	1110	STS Inspection
3	8/20/24	1305	8/20/24	1446	STS Inspection

Comments: None.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on August 19, 20, 22.

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’, 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’	
		x	North fish entrance (NFE-1) weir depth	≥ 8.0’ or on sill	
	x		North fish entrance channel/tailwater differential	1.0’ – 2.0’	2.9’, 2.3’

Comments: North fish entrance channel/tailwater differential was above criteria on August 19 and 22. The south fish entrance channel/tailwater differential was slightly above criteria on August 19 and 22. The high entrance

heads were primarily caused by low tailwater levels. The entrance heads were in criteria on August 20 when tailwater was higher.

The water velocity meter was found to not be updating its velocity reading on August 20. An electrician rebooted the meter the next day to fix the immediate problem. The long-term solution will be to replace the meter and sensor when the ladder is unwatered for inspection and maintenance this winter.

Auxiliary Water Supply (AWS) System:

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

Comments: South shore AWS pump #6 has been out of service since March 1, 2024, due to high vibration readings coming from the motor and gearbox. The gearbox is being replaced with a refurbished one.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	Average of 1 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/ 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: Unit 2, 6, and 3 STSs and unit 4 VBSs were inspected on August 19, 20, and 21. All three STSs for unit 2 were removed and replaced with spares on August 19. Screens 2B and 2C were discovered to have water intrusion in their motors. Screen 2A was found to have a seam separation measuring approximately 2' long. At least eight juvenile shad mortalities were observed inside 2A screen. All VBSs have been inspected for the year.

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 rebuilt to enable it to work in automatic mode. The weirs are being operated at the actuator to adjust the water level as needed until the problem can be fixed.

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

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

Removable Spillway Weir (RSW): Summer spill for fish passage is occurring. The RSW is closed due to project outflows being below 30 kcfs.

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
27.2	22.3	9.0	8.9	72	71	9.9	7.1

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: The cooling water strainer for unit 4 was inspected on August 22 as part of the unit's annual maintenance. Only a small accumulation of debris and decayed biomatter were found.

Avian Activity: There were low numbers of piscivorous birds observed around the dam. Most of the birds were roosting on Eagle Island.

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

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by the fish sampling contractor, frozen and properly disposed of in a landfill. 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: August 16 - 22, 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	8/19/24	0705	8/29/24	ERTS	Reseal Thrust Bearing due to oil leak.
Unit 5	5/01/24	0624	8/31/24	ERTS	T2/Rooftop bus out of service due to BPA Line outage
Unit 6	5/01/24	0624	8/31/24	ERTS	T2/Rooftop bus out of service due to BPA Line outage

Comments: BPA line tripped at 0624 hours on May 1. Units 5 and 6 remain out of service until T2 line is repaired. Estimated return to service date is August 31

Adult Fish Passage Facility

Lower Monumental fish facility and EAS staff inspected the adult fishways on August 16, 17, 18, 20 and 21.

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 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 6.3, 6.6, 7.4, 7.0 and 6.9 feet respectively. South Powerhouse Entrance SPE-2 weir was at sill during all inspections with of 6.3,

6.6, 7.4, 7.0 and 6.9 feet respectively. South Shore Entrance SSE-1 weir was at sill during all inspections with readings of 7.2, 7.3, 7.7, 7.6 and 7.7 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)	6 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.

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: Powerhouse operator found the attractant light out on orifice 2A7 on August 19. Gatewell orifice was switch to 2A8 at the time. Powerhouse electrical person replaced a burnt-out light bulb, and orifices were swapped back afterwards, also on August 19.

Collection Facility: The facility ran in primary bypass for two days and secondary bypass for condition sampling the third day, every-third day, this entire reporting period. No collection took place between August 19 and 0700 August 21 due to the State of Washington's high water temperature fish handling limitations (≤ 21ºC/69.8ºF). Every-third day collection resumed at 0700 on August 21. A total of 4 fish were collected with 4 being bypassed this reporting period.

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.

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. This issue will move forward with plans to work on funding and plans to repair in the future. It is not deemed as a critical issue and will not impede fish passage.

The repair/replace work on the HVAC system for the second floor of the JFF was returned to service on August 22.

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

Spillway Weir: Late Summer 8 kcfs spill continues.

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
28.9	23.6	8.1	7.9	70.5	70.0	6.4	5.5

*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
8/16/2024	1130	27	8	0	0	3
8/17/2024	830	6	0	0	0	2
8/18/2024	1230	36	12	0	0	1
8/19/2024	830	29	2	0	0	5
8/20/2024	930	8	0	0	0	3
8/21/2024	830	41	3	0	0	1
8/22/2024	1130	20	7	0	0	0

Comments: Bird hazing by USDA personnel ended on June 30.

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

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*
8/16/2024	---	---
8/17/2024	62.0	62.0
8/18/2024	---	---
8/19/2024	---	---
8/20/2024	---	---
8/21/2024	---	---

8/22/2024	49.0	49.0
Total	111	111

*Collection refers to extrapolated values based on sampling percent.

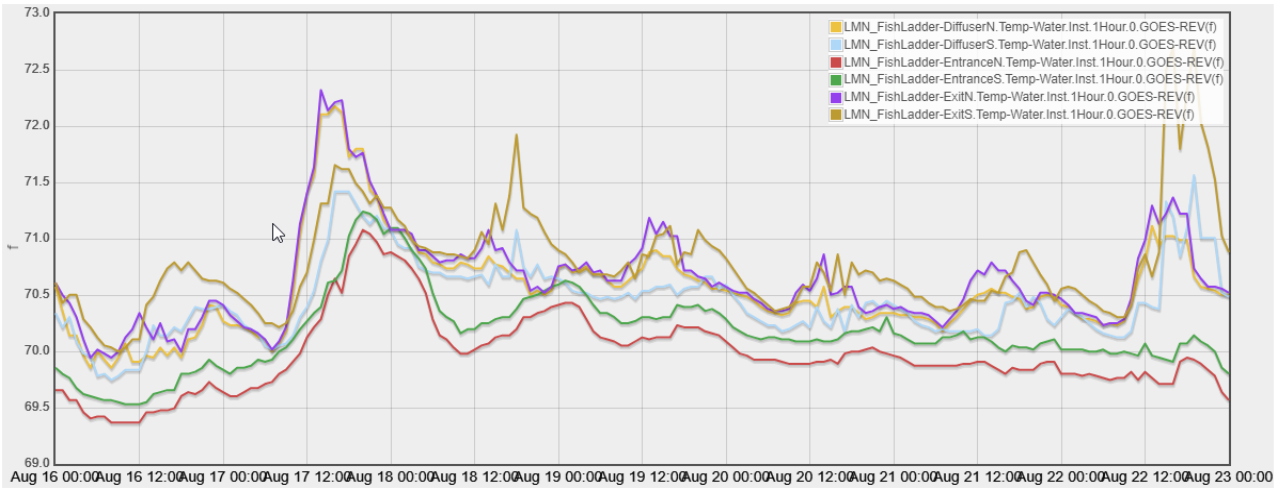
Fish Rescue/Salvage: No fish rescues were performed during this reporting period.

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: August 16 – August 22, 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	9/27/2024	17:00	Annual 6-year overhaul
5	4/14/2017	14:11	11/30/2024	ERTS	Spider and upper guide bearing repair.

Comments: Contractual obligations, performance issues, and projected flow data once again realigned the Unit 5 ERTS date into late fall 2024.

Adult Fish Passage Facility

EAS Bio staff inspected the adult Fishway on August 16, 18, 20.

Fish Ladder:

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

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	
X			South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 7.0’ or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 7.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
X	X		North Shore Entrance (NSE-1) Weir Depth	≥ 6.0’ or on sill	8/20- 5.5
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. FSC board readings of SSE Channel elevation continues 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.

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 15 ft² - Low 0 ft²
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X	X		Any debris seen in gatewells (% coverage)	8/16- 5C:1% 8/20- 4C:1%, 5C:1% 8/21- 6C:1% 8/22- 4B:1%, 4C:1%, 5B:1%
	X		Any oil seen in gatewells?	

Comments: The forebay had minimal floating debris inside the trash shear boom with the highest measurement occurring on August 18 and 19 at 15 ft². The overall total forebay debris high also occurred on August 18 and 19 at 15 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 289 fish were collected, 218 were trucked, 0 were bypassed, and there were 13 sample or facility mortalities. The descaling and mortality rates were 3.7% and 4.5%, respectively. The collection and transport facility operated within criteria; 44 adult lampreys were 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.

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
26.7	22.7	6.5	6.3	69.7	68.4	5.2	4.0

*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
8-16	1245	0	0	0	0
8-17	1145	0	0	0	0
8-18	1145	0	0	0	0
8-19	1145	0	0	0	0
8-20	0745	0	1	0	0
8-21	1145	1	0	0	0
8-22	0720	0	0	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*
8-16	852	852
8-17	626	626
8-18	544	544
8-19	440	440
8-20	646	646
8-21	524	524
8-22	315	315
Totals	3,947	3,947

*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: Fish rescue activities took place on August 19 in gatewell 3B for preparation of unit annual maintenance. Another fish rescue occurred on August 20 in the unit 3 scroll case for unit annual maintenance. All results were reported and submitted to District.

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: August 16-22, 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**
2	08/05	0705	08/22	1515	Annual maintenance
1, 3, 4	08/14	0606	08/16	1726	T1 Transformer
5,6	08/16	0559	08/16	1726	T1 Transformer

Comments: LWG Doble testing scheduled for August 12-16 as noted in Appendix A, *Section 9.1.3 Doble Testing* of the 2024 Fish Passage Plan was canceled due to a faulty setting on a relay installed this spring. Annual transformer PMs and contracted installation of transformer monitoring equipment also scheduled during this outage period to minimize outages during the fish passage season were completed as scheduled.

Adult Fish Passage Facility

Lower Granite Biologists and EAS staff inspected the adult fishway August 16, 18, 19 and 21.

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: Operations increased diffuser 14 supply August 19 to maintain ladder weir overflow criteria and broodstock holding tank requirements.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	
X			South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 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’	0.4’, 0.5’, 0.8’
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.1, 1.3, 1.2, 0.9

Comments: Fish ladder control system operation and configuration is an ongoing issue that began when the system was installed in 2016. LWG is moving forward with inhouse design and install of fish ladder control system based on the system used at LMN. Efforts of the electrical crew continue to bring the ladder back into criteria however the control system drifts out of calibration shortly after. The fish ladder was designed to operate between 633' and 638' MSL with a minimum operating elevation of 633.0'.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
Yes	X		AWS Fish Pump 1
Yes			AWS Fish Pump 2
Yes			AWS Fish Pump 3

Comments: AWS pump 2 was returned to service and AWS Pump 1 was placed into standby at 1208 hours August 19. AWS pump 2 supplies the collection channel with the same flow as pump 1 in fast. The fish ladder was designed to operate within the 633' and 638' MSL range with a minimum operating elevation of 633.0'.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	36 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	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: VBS mesh was replaced in gatewell slot 2A during the annual maintenance outage.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

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

Comments:

Collection Facility: Collection for truck transport began at 0700 on Aug 1.

Transport Summary: Truck transport continues with LWG supporting transport from LGO as necessary.

Spillway Weir: Late summer spill continues.

PIT tag interrogations: RSW detections included 64,380 juvenile and 104 adult Chinook salmon, 48,218 juvenile and 611 adult steelhead, 8,864 juvenile and 3 adult sockeye, and 2,592 juvenile coho salmon. Juvenile bypass system detections included 10,162 juvenile and 13 adult Chinook salmon, 14,579 juvenile and 51 adult steelhead, 220 juvenile and 4 adult sockeye, and 240 juvenile coho salmon through August 22 (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
26.3	21.7	9.2	6.1	65.0	62.0	5.0	4.0

*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 45,531 live and 5,050 mortalities this report week. All live Siberian prawns are euthanized.

Avian Activity: Biologist daily piscivorous bird counts began April 1. Bird hazing concluded June 30.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
August 16	1245	1	5	0	0
August 17	1230	0	5	0	0
August 18	0955	4	8	0	0
August 19	1425	1	8	0	0
August 20	0926	1	16	0	0
August 21	1439	0	6	0	0
August 22	1527	0	0	0	0

Gas Bubble Trauma (GBT) Monitoring: N/A

Idaho Department of Fish and Game (IDFG) Adult Fish Trap Operations: Collection for sampling continues with fish being collected 24-hours per day at a 70% sample rate. Fall chinook broodstock collection for WDFW and NPT began August 18 and will continue until escapement goals are met. Fish are being transported to Lyons Ferry Hatchery Tuesday through Saturday and to Dworshak Hatchery Sundays and Mondays.

Fish Rescue/Salvage: The adult trap was flushed August 17 to remove accumulated American shad and debris that collect on screens and reduce trap operational flows.

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.

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 873 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.