Out of Criteria – NWW Weekly Report #21 – July 19-25, 2024

1. McNary

Yes	No	Location	Criteria	Measurements
	X	Oregon Count Station Differential	0.0’ to 0.5’	0.3’ to 0.8’

At the Oregon exit, the out of criterion count station differential recorded above criteria on July 19. The general maintenance staff was called in to clean the picketed leads. Also, that day, multiple exit alarms came and were reset.

At the Washington exit, multiple exit alarms came in and were reset on July 19 and 23. Multiple regulating weir alarms came in and were reset on July 21. Exit weir 339 tripped alarms and was reset on July 24. A failed transducer was found at the weir, which was switched to manual mode, with the ladder adjusted to stay in criterion. The next day, at 0822 hours, the transducer was replaced, and the weir returned to automatic mode.

Yes	No	Sill	Location	Criteria	Measurements
	X		NFEW2 Weir Depth	$\geq$ 8.0’	7.9’ to 8.5’
	X		NFEW3 Weir Depth	$\geq$ 8.0’	7.9’ to 8.5’
	X		Washington Entrance Head Differential	1.0’ – 2.0’	1.3’ to 2.1’
	X		WFE3 Weir Depth	$\geq$ 8.0’	7.3’ to 9.5’

NFEW2 and NFEW3 were out of criteria on July 21 and 24. These out of criteria points may be due to low tailwater elevations and calibration drifts. As stated last week, WFE3 had been lowered by the operators to maintain a lower pool differential. However, WFE3’s lower limit failed on July 21. Operators were working on the weir as the biologist was doing the ladder inspection. An attempt to lower WFE1 to replace WFE3 failed. With the entrance data points going out of criteria, an electrical staff member was called in. The issue was noted at 1237 hours and resolved at 1555 hours. After fixing the limit issue, WFE3 entrance was set to where it was before last week’s adjustment. WFE3 and the Washington entrance pool differential were out of criteria July 24. This could possibly be calibration issues related to the spill season.

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

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

During testing in 14A slot for the headgate contractor, hydraulic fluid was released into 14A (dry) and 13C (watered up) slots on July 24. The fluid was removed by close of business on July 25. All fluid was contained.

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

With 14A slot dewatered, the north orifice in 14B slot remained open until July 24. With the hydraulic fluid in 14B and 13C slots on July 24, the three open orifices in unit 14 and the one open orifice in 13C slot were closed immediately. Make-up north orifices were opened in 12B, 12C, 13A, and 13B slots. All fluid was contained.

While operating the transition screen cleaning brush using the start button, it was noted the brush stalled out on the B beam instead of parking on the A beam on July 20, at 1515 hours. In order to get the brush parked properly, the lead technician on duty used the individual position switches to park the brush on the A beam but had to travel the brush to the D beam first. The brush was returned to automatic mode and the electrical staff was notified by email.

2. Ice Harbor

Yes	No	Sill	Location	Criteria	Measurements
	x		North fish entrance (NFE-1) weir depth	$\geq$ 8.0’ or on sill	6.5’, 6.6’, 6.1’

x			North fish entrance channel/tailwater differential	1.0’ – 2.0’	

During the night of July 23, the south fish ladder overflowed due to algae buildup on the picked leads. The picked leads were immediately cleaned. Fortunately, there were no fish found on the ground. The picketed leads must be cleaned twice a day to keep the differential in criteria, but the daytime cleaning was mistakenly missed earlier.

The north fish entrance (NFE-1) weir depth was below criteria on July 22, 24, and 25. The channel and tailwater elevation readings on the PLC have been significantly higher than the physical readings obtained on the inspections. The discrepancies were partly due to turbulent water from spill making accurate measurement of the tailwater difficult. The channel and tailwater elevation transducers appear to have drifted out of calibration. A request was made for electricians to recalibrate the transducers.

The water velocity meter reading was observed to not be updating on July 24. Electricians were informed of the problem on July 30.

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
	x		STSs inspection results acceptable?

Unit 4, 3, and 2 STSs were inspected on July 22, 23, and 25. During the inspection of the STS in gatewell 3B, the camera collided with the STS and became entangled with it. The camera was recovered by use of an ROV. The STS was pulled, inspected, and then replaced - no damage was noted to the screen. The STS in gatewell 2B was noted to have a tear at the seam extending across the south screen. The STS was immediately pulled and replaced with a spare. There were no fish observed to be caught inside the STS.

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		Dewaterer and cleaning systems operating satisfactory?	

4. Little Goose

Yes	No	Sill	Location	Criteria	Measurements
X	X		North Shore Entrance (NSE-2) Weir Depth	$\geq$ 6.0’ or on sill	7/22: 5.8

5. Lower Granite Dam

Yes	No	Sill	Location	Criteria	Comments
	X	X	North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 8.0’ or on sill	5.9’, 6.0’
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	0.9’, 0.8’, 0.5
	X		North Shore Channel/Tailwater Differential	1.0’–2.0’	0.6’, 0.6’
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	0.9, 0.9, 0.9

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 of 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. There is a swell at the north powerhouse where the back eddy collides with powerhouse and spillway flow that may be impacting channel/tailwater differentials. North shore tailrace elevations ranged from 631.5' to 632.3'. the fish ladder was designed to operate at the minimum operating elevation of 633.0'.

AWS Pump 1 remains in slow mode due to the inability to operate in fast mode while operating at MOP elevation. AWS pump 2 remains out of service for maintenance.

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#21-2024

Project: McNary
Biologist: Bobby Johnson and Paul Bertschinger
Dates: July 19-25, 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
11 & 12	7/8	0630	8/24	NA	Transformer 6 re-gasketing
7	7/22	0634	7/25	1736	Annual maintenance
1	7/30	1000	7/30	1019	ESBS camera inspections

Comments: RTS dates are subject to change. The hard one percent criteria remained in place. The sawtooth unit priority pattern for temperature abatement continued.

Adult Fish Passage Facilities

McNary fisheries staff performed measured inspections of the adult fishways on July 19, 21 and 24. Adult fish counting, and video review of nighttime lamprey passage continued.

For the Washington shore ladder, after a bus switch, the entrance and exit control systems were out of service on July 23, from 0907 to 1016 hours. Due to the outage being short, there were no ill effects on fish passage.

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’	0.3’ to 0.8’
X		Washington Exit	Head over weir 1.0’ to 1.3’	1.0’
X		Washington Count Station Differential	0.0’ to 0.5’	0.1’ to 0.3’

Comments: Debris loads were light to moderate (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 Saturdays to clean picketed leads.

At the Oregon exit, the out of criterion count station differential recorded above occurred on July 19. The general maintenance staff was called in to clean the picketed leads. Also, that day, multiple exit alarms came and were reset. The traveling screens received more scheduled maintenance on July 25.

At the Washington exit, multiple exit alarms came in and were reset on July 19 and 23. Multiple regulating weir alarms came in and were reset on July 21. Exit weir 339 tripped alarms and was reset on July 24. A failed transducer was found at the weir, which was switched to manual mode, with the ladder adjusted to stay in criterion. The next day, at 0822 hours, the transducer was replaced, and the weir returned to automatic mode. Also, a new exit trash rack hoist was installed on July 24.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0' – 2.0'	1.1' to 1.4'
	X		NFEW2 Weir Depth	≥ 8.0'	7.9' to 8.5'
	X		NFEW3 Weir Depth	≥ 8.0'	7.9' to 8.5'
X			South Oregon Entrance Head Differential	1.0' – 2.0'	1.3' to 1.5'
X			SFEW1 Weir Depth	≥ 8.0'	8.1'
X			SFEW2 Weir Depth	≥ 8.0'	8.0' to 8.2'
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	1.9 fps
	X		Washington Entrance Head Differential	1.0' – 2.0'	1.3' to 2.1'
X			WFE2 Weir Depth	≥ 8.0'	8.1' to 8.5'
	X		WFE3 Weir Depth	≥ 8.0'	7.3' to 9.5'

Comments: NFEW2 and NFEW3 were out of criteria on July 21 and 24. These out of criteria points may be due to low tailwater elevations and calibration drifts. As stated last week, WFE3 had been lowered by the operators to maintain a lower pool differential. However, WFE3's lower limit failed on July 21. Operators were working on the weir as the biologist was doing the ladder inspection. An attempt to lower WFE1 to replace WFE3 failed. With the entrance data points going out of criteria, an electrical staff member was called in. The issue was noted at 1237 hours and resolved at 1555 hours. After fixing the limit issue, WFE3 entrance was set to where it was before last week's adjustment. WFE3 and the Washington entrance pool differential were out of criteria July 24. This could possibly be calibration issues related to the spill season.

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 8
X			22° to 23°	Oregon Ladder Fish Pump 2
X			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

Generally, the juvenile system alternates between primary and secondary bypass every 24 hours at 0700 hours. However, as stated last week, the schedule remained interrupted as described below. With the sawtooth pattern in effect, due to the sample tank mortality rate, 8-hour samples per the FPP continued on July 19, 22 and 23, starting at 2300 hours and ending the next day at 0700 hours. The sample scheduled for July 21 was moved to July 22 due to wet lab HVAC system failing and high daily air temperatures resulting in high temperatures in the room.

With heat stress concerns, GBT fish were collected in secondary bypass from 0700 to 1117 hours on July 23 with sample gates off.

For the data week, only one sample tank mortality was recovered, and that was on July 20, resulting in a 2.6 percent mortality rate for the day. After GBT, one of six fish was lost for a 16.7 percent mortality.

With air temperatures, water temperature gradients, and mortality decreasing by week's end, we assumed heat stress and mortality had dissipated and resumed 24-hour sampling on July 25 at 0700 hours, with a 10 percent sample rate.

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. In order to improve deck access for contractors and project staff, the slots in unit 7, 11C slot, 12A and 12B slots remined covered. Algae blooms remained in units 3, 4, and 13 along with slot 14C slot having blooms.

During testing in 14A slot for the headgate contractor, hydraulic fluid was released into 14A (dry) and 13C (watered up) slots on July 24. The fluid was removed by close of business on July 25. All fluid was contained.

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 in units 1 and 7 revealed no issues on July 23. Examination of ESBS screen brush programming continued with the screens in unit 4.

Daily VBS monitoring continued, and no high differentials were recorded with no screens being cleaned.

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 14A slot dewatered, the north orifice in 14B slot remained open until July 24. With the hydraulic fluid in 14B and 13C slots on July 24, the three open orifices in unit 14 and the one open orifice in 13C slot were closed immediately. Make-up north orifices were opened in 12B, 12C, 13A, and 13B slots. All fluid was contained.

While operating the transition screen cleaning brush using the start button, it was noted the brush stalled out on the B beam instead of parking on the A beam on July 20, at 1515 hours. In order to get the brush parked properly, the lead technician on duty used the individual position switches to park the brush on the A beam but had to travel the brush to the D beam first. The brush was returned to automatic mode and the electrical staff was notified by email. This appears to be a different problem than what was reported last week.

The transition screen brush and the channel elevation will 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 40 juvenile lamprey and 346 subyearling Chinook smolts bypassed this week. Juvenile shad were the predominate species seen.

The HVAC system that services the wet lab failed on July 21 and was noted at 1525 hours. Due to the hot air temperatures outside and the lab thermostat reading 74 degrees Fahrenheit, sample collection that was to start at 2300 hours was cancelled until the next day. The HVAC system was repaired on July 22, at 0934 hours.

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 will occur.

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
164.3	133.3	97.2	76.9	69.9	69.0	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 throughout the juvenile system. Their results are stated daily and weekly in separate reports. Adult ladder water temperatures are reported by an automated system year-round.

The summer spill season continued, with 57 percent of flow being spilled. Adjustments are made once a day just after midnight. Spill will be reduced to 20 kcfs on August 1, with only the two TSW's open.

Bays 6 and 9 were not adjusted this week. If adjustments are required in bays 6 and 9, they will occur on Monday and Thursday mornings unless it is a holiday then another day will be chosen.

The rehabilitation of the downstream wall dogs from bay 21 has been completed. These wall dogs will be reinstalled in bay 21 on August 1. The downstream wall dogs from bay 22 will be reinstalled at a later date.

Other

Inline Cooling Water Strainers: The next cooling water strainer inspections will occur on August 6.

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

In the spill zone, pelicans, gulls, cormorants, and terns were noted in fluctuating numbers. Most birds were feeding though some were roosting or flying by. Two pelicans were roosting on the Washington ladder wall on July 19.

In the powerhouse zone, pelicans in very low numbers were noted roosting on the water or feeding at the Oregon ladder floating orifice gates.

In the outfall zone, gulls, cormorants, and terns in fluctuating numbers were noted roosting on the pipe. One pelican was noted drifting by the outfall. No feeding was observed. An osprey pair has nested on the outfall pipe where the walkway ends. This may have affected the numbers of birds roosting as the osprey also roosted at the end of the pipe at times.

For the forebay zone, grebes were observed in fluctuating numbers along with a few pelicans and juvenile gulls. One fly-by cormorant and osprey were also noted. Birds were roosting and feeding with the gulls scavenging. A few grebes, gulls, pelicans, cormorants, and ospreys maybe outside the zone.

The LRAD remains out of service until the osprey are done nesting.

The laser on the navigation lock wing wall opposite the outfall is in storage waiting shipment 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.

USDA Wildlife Services will conclude shore hazing on July 27.

Due to the reduction in pelican numbers, the tori line installed outside the Oregon ladder south entrance was removed on July 24. This line was effective and may lead to other ideas.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
July 19	Spill	0	0	1	3	0
	Powerhouse	0	0	0	4	0
	Outfall	7	4	0	0	0
	Forebay	6	0	0	2	0
July 20	Spill	0	0	0	2	0
	Powerhouse	0	0	0	0	0
	Outfall	2	2	0	0	0
	Forebay	1	0	0	0	15
July 21	Spill	6	1	10	13	0
	Powerhouse	0	0	0	2	0
	Outfall	12	0	2	0	0
	Forebay	1	0	0	3	3
July 22	Spill	2	0	5	11	0
	Powerhouse	0	0	0	0	0
	Outfall	28	3	2	0	0
	Forebay	2	0	0	6	16
July 23	Spill	0	0	5	4	0
	Powerhouse	0	0	0	0	0
	Outfall	2	0	0	0	0
	Forebay	0	0	0	0	14
July 24	Spill	1	0	3	6	0
	Powerhouse	0	0	0	1	0
	Outfall	8	2	4	1	0
	Forebay	2	0	0	0	12
July 25	Spill	0	0	0	4	0
	Powerhouse	0	0	0	0	0
	Outfall	9	0	0	0	0
	Forebay	1	1	0	0	8

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

Siberian Prawn: Five prawns were observed in the sample this week. These are the first prawns of the season.

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

Research: PNNL should begin removal of study equipment after the spill season concludes.

For a CRITFC study, there were tissue samples removed from nine juvenile lamprey collected at the facility this week. The yearly total is 475 fish, which were returned to the river unharmed.

Due to previous high mortality, gas bubble trauma examinations occurred once this week, with fish examinations on July 23. The data was reported the next day. No smolts showed signs of trauma. There was one mortality (a rate of 16.7 percent) removed from the recovery raceway. Heat stress is the likely cause of this mortality.

Project: Ice Harbor
Biologist: Ken Fone
Biological Science Technician: Ben McArthur
Dates: July 19– July 25, 2024

Turbine Operation

Yes	No	Turbine Unit Status
	x	All 6 turbine units available for service (see table & comments below for details).
x		All available turbine units are operated in accordance with Appendix C of the Fish Passage Plan

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

	OOS		RTS		
Unit	**Date**	**Time**	**Date**	**Time**	**Outage Description**
1	6/27/23	0708	---	---	Turbine runner replacement and stator rewind
6	7/15/24	0700	7/20/24	1430	Doble testing
5	7/15/24	0700	---	---	Doble testing, annual maintenance
4	7/22/24	0730	7/22/24	1358	STS inspection and hub tap
3	7/23/24	0700	7/23/24	1345	STS inspection
2	7/25/24	0716	7/25/24	1446	STS inspection

Comments: None.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on July 22, 24, 25.

Fish Ladders:

Yes	No	Location	Criteria	Measurements
x		North ladder exit differential	Head ≤ 0.3’	
x		North ladder picketed lead differential	Head ≤ 0.3’	
x		North ladder depth over weirs	Head over weir 1.0’ to 1.3’	
x		South ladder exit differential	Head ≤ 0.3’	
x		South ladder picketed lead differential	Head ≤ 0.3’	
x		South ladder depth over weirs	Head over weir 1.0’ to 1.3’	

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
x			South fish entrance (SFE-1) weir depth	≥ 8.0’ or on sill	
x			South fish entrance channel/tailwater differential	1.0’ – 2.0’	
x			South shore channel velocity	1.5 – 4.0 fps	
x			Central fish entrance (CFE-2) weir depth	≥ 8.0’ or on sill	
x			Central fish entrance channel/tailwater differential	1.0’ – 2.0’	
	x		North fish entrance (NFE-1) weir depth	≥ 8.0’ or on sill	6.5’, 6.6’, 6.1’
x			North fish entrance channel/tailwater differential	1.0’ – 2.0’	

Comments: During the night of July 23, the south fish ladder overflowed due to algae buildup on the picked leads. The picked leads were immediately cleaned. Fortunately, there were no fish found on the ground. The picketed

leads must be cleaned twice a day to keep the differential in criteria, but the daytime cleaning was mistakenly missed earlier.

The north fish entrance (NFE-1) weir depth was below criteria on July 22, 24, and 25. The channel and tailwater elevation readings on the PLC have been significantly higher than the physical readings obtained on the inspections. The discrepancies were partly due to turbulent water from spill making accurate measurement of the tailwater difficult. The channel and tailwater elevation transducers appear to have drifted out of calibration. A request was made for electricians to recalibrate the transducers.

The water velocity meter reading was observed to not be updating on July 24. Electricians were informed of the problem on July 30.

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 0 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: Unit 4, 3, and 2 STSs were inspected on July 22, 23, and 25. During the inspection of the STS in gatewell 3B, the camera collided with the STS and became entangled with it. The camera was recovered by use of an ROV. The STS was pulled, inspected, and then replaced - no damage was noted to the screen. The STS in gatewell 2B was noted to have a tear at the seam extending across the south screen. The STS was immediately pulled and replaced with a spare. There were no fish observed to be caught inside the STS.

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.

Orifice 1BN light burned out over the weekend of July 19. Orifice 1BS was opened in place of orifice 1BN until the light was replaced on July 30.

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.

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
36.4	32.0	10.8	9.4	72	71	8.4	6.3

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Monthly inspections of turbine unit cooling water strainers for lamprey ended in July and will start up again in December.

Avian Activity: There were moderate numbers of piscivorous birds seen around the project (see table below). Most of the terns and pelicans were roosting on the upstream tip of Eagle Island, and the gulls were roosting on the island and on the boat barrier buoys in the forebay. Boat-based hazing occurred in the tailrace for eight hours per day, three days per week, and was usually effective at dispersing foraging birds. Roosting birds were not usually hazed off the island, as they were prone to forage closer to the dam if disturbed. Bird observation counts did not occur on days when fish facility staff were not on project. The bird observation count did not occur on July 23 due to staffing constraints.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
July 19	---	---	---	---	---
July 20	---	---	---	---	---
July 21	---	---	---	---	---
July 22	7	3	22	0	16
July 23	---	---	---	---	---
July 24	19	4	8	0	4
July 25	23	2	7	0	13

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: July 19 - 25, 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 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 July 19, 20, 21, 23 and 24.

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		X	North Shore Entrance (NSE-1) Weir Depth	≥ 8.0’ or on sill	
X		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: North Shore Entrance NSE-1 weir was at sill during the July 19 inspection with a reading of 8.2. North Shore Entrance NSE-2 weir was at sill during the July 19 and 20 inspections with readings of 8.2 and 8.3 feet respectively. South Powerhouse Entrance SPE-1 weir was at sill during all inspections with readings of 5.2, 5.2, 5.3, 5.2 and 5.0 feet respectively. South Powerhouse Entrance SPE-2 weir was at sill during all inspections with 5.2, 5.2,

5.3, 5.2 and 5.0 feet respectively. South Shore Entrance SSE-1 weir was at sill during all inspections with readings of 5.9, 5.9, 5.9, 6.1 and 6.2 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)	6 yrd²
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	1 – 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: None.

Collection Facility: The facility was scheduled to run in primary bypass for one day and secondary bypass for condition sampling the next day this reporting period, however, due to the State of Washington's high water temperature fish handling limitations (≤ 21ºC/69.8ºF); fish were only collected for sampling from July 19 – 20 and July 22 – 23. A total of 517 fish were collected with 515 being bypassed.

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 HVAC system for the second floor of the JFF building is no longer functioning and parts have been ordered. Two swamp cooler type devices were placed in the wet lab to lower the temperature on the second floor until the system can be repaired.

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

Spillway Weir: Summer (17kcfs) 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
37.0	29.0	17.0	16.1	71.5	69.5	6.3	5.7

*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
7/19/2024	1000	9	1	0	0	0
7/20/2024	1030	24	5	0	0	1
7/21/2024	1030	25	8	0	0	3
7/22/2024	1000	42	2	4	0	7
7/23/2024	830	23	2	2	0	7
7/24/2024	1030	21	4	2	0	4
7/25/2024	900	25	4	0	0	7

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

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

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*
7/19/2024	---	---
7/20/2024	43	86
7/21/2024	---	---
7/22/2024	---	---
7/23/2024	15	60
7/24/2024	---	---
7/25/2024	---	---
Total	58	146

*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 examinations occurred on July 22. A total of 1 clipped subyearling Chinook and 2 unclipped subyearling Chinook smolts were examined. No gas bubble trauma was detected.

The Nez Perce steelhead kelt study and rehabilitation collection ended on for the season.

Temperature Probes: The readings from the South ladder exit temperature probe were not seen on the temperature database starting July 21. Hydrology personnel determined the temperature is working but its base station is not transmitting the temperatures to the database. They downloaded the data to manual add to the database and were continuing to trouble-shoot the problem at the end of the reporting period.

Project: Little Goose Dam
Biologist: Deb Snyder, Brooke Gerard
Dates: July 19 – July 25, 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
4	7/8/2024	0800	7/25/2024	1505	Unit annual maintenance
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 July 19, 22, 23.

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		X	South Shore Entrance (SSE-1) Weir Depth	≥ 8.0’	
X		X	South Shore Entrance (SSE-2) Weir Depth	≥ 8.0’	
X			South Shore Channel/Tailwater Differential	1.0’ – 2.0’	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 7.0’ or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 7.0’ or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	
X			North Shore Entrance (NSE-1) Weir Depth	≥ 6.0’ or on sill	
X	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0’ or on sill	7/22: 5.8
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 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.

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 25 ft² - Low 0 ft²
	X		Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
X	X		Any debris seen in gatewells (% coverage)	7/19-3A:1%; 7/23-3B:1% 5C:5% 6A:1% 6C:1%; 7/24-3A:2% 3B:1% 4A:1% 5C:1%; 7/25- 3A:1% 3B:1% 4B:1% 4C:1% 5C: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 multiple days July 20, 23, 24, 25 at 15 ft². The overall total forebay debris high occurred on July 25 at 25 ft^2. No drawdown measurements occurred during the reporting period.

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.

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. During this reporting period a total of 3,994 fish were collected, 0 were barged, 3,989 were bypassed, and there were 5 sample or facility mortalities. The descaling and mortality rates were 2.3% and 0.13%, respectively. The collection and transport facility operated within criteria; 16 adult lampreys were removed from the separator 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.

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.

River Conditions

River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
37.0	29.4	11.1	9.3	70.0	69.2	6.0	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
7-19	0830	5	0	0	5
7-20	0830	0	1	0	6
7-21	0820	0	0	0	11
7-22	0830	3	0	0	0
7-23	0800	0	0	0	0
7-24	1030	0	0	0	2
7-25	0725	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*
7-19	0	0
7-20	2	20
7-21	0	0
7-22	11	110
7-23	0	0
7-24	13	65
7-25	0	0
Totals	26	195

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

Gas Bubble Trauma (GBT): Oregon Department of Fish and Wildlife performed GBT monitoring on July 23. Of the 22 fish examined, 1 fish exhibited gas bubble trauma symptoms.

Fish Rescue/Salvage: No Fish Rescue activities took place during the reporting 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: July 19-25, 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**
6	07/08	0700			Annual maintenance (tentative RTS 08/08/24)

Comments:

Adult Fish Passage Facility

Lower Granite Biologists and EAS staff inspected the adult fishway July 19, 20 and 24.

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’	
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	≥ 8.0’ or on sill	5.9’, 6.0’
		X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0’ or on sill	
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	0.9’, 0.8’, 0.5
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’	0.6’, 0.6’
	X		Collection Channel Surface Velocity	1.5 – 4.0 fps	0.9, 0.9, 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 of 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. There is a swell at the north powerhouse where the back eddy collides with powerhouse and spillway flow that may be impacting channel/tailwater differentials. North shore

tailrace elevations ranged from 631.5’ to 632.3’. the fish ladder was designed to operate at the minimum operating elevation of 633.0’.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
Yes			AWS Fish Pump 1
No		Yes	AWS Fish Pump 2
Yes			AWS Fish Pump 3

Comments: AWS Pump 1 remains in slow mode due to the inability to operate in fast mode while operating at MOP elevation. AWS pump 2 remains out of service for maintenance.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	35 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		ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
X			VBSs differentials checked this week?
X			VBSs differentials acceptable?

Comments:

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

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

Comments:

Collection Facility: The juvenile facility is operating in secondary bypass for condition sampling.

Transport Summary: Every-other-day barging ended June 19.

Spillway Weir: Summer spill began at 0001 hours June 21.

PIT tag interrogations: RSW detections included 64,351 juvenile and 98 adult Chinook salmon, 48,218 juvenile and 587 adult steelhead, 8,864 juvenile and 3 adult sockeye, and 2,592 juvenile coho salmon. Juvenile bypass system detections included 10,081 juvenile and 6 adult Chinook salmon, 14,576 juvenile and 43 adult steelhead, 220 juvenile and 2 adult sockeye, and 240 juvenile coho salmon through July 18 (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
37.2	30.2	18.2	17.8	66.0	64.0	5.0	5.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling strainers were inspected/cleaned July 25. Eighteen juvenile lamprey mortalities were removed/collected.

Introduced Species: No zebra/quagga muscles were detected on the trap substrate. Siberian prawns collected in the sample included 2619 live and 336 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
July 19	0945	18	2	0	0
July 20	1100	0	2	0	0
July 21	1115	0	2	0	0
July 22	0618	0	0	0	0
July 23	1502	0	2	0	0
July 24	1415	1	4	0	0
July 25	1426	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 Sunday-Thursday and sampled Monday- Friday at a 25% (18% /week) sample rate. Collection for sampling will be conducted Monday through Friday until broodstock collection starts August 18.

IDFG concluded collection and transport of adult sockeye salmon to Eagle Fish Hatchery due to high river temperature concerns in the Salmon River basin. Collection/transport dates were July 9 through July 25. This effort was conducted in cooperation with USACE Lower Granite Fisheries and NOAA Fisheries. Fish were collected Monday through Thursdays and transported Tuesdays and Thursdays. Fish collected on Mondays and Wednesdays were held overnight in an adult holding tank until transport the next day. There were 112 (32 clipped and 80 unclipped) collected and transported this report period; 1 unclipped tank mortality was reported. Through July 25, 254 sockeye (113 clipped and 141 unclipped) were collected and transported.

Fish Rescue/Salvage: The adult trap was flushed July 21 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 2000 juvenile and 1250 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 793 juvenile and 481 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.