Out of Criteria – NWW Weekly Report #7 – May 3-9, 2024

1. McNary

Yes	No	Sill	Location	Criteria	Measurements
	X		SFEW1 Weir Depth	≥ 8.0’	7.9’ to 8.2’
	X		SFEW2 Weir Depth	≥ 8.0’	7.9’ to 8.2’
	X		WFE3 Weir Depth	≥ 8.0’	7.7’ to 8.5’

Fish pump 1 remained out of service for a scheduled 5-year overhaul. Fish pumps 2 and 3 briefly tripped offline on May 6, from 0752 to 0833 hours. Fish pump 2 was briefly out of service for a bus switch on May 7, from 0613 to 0657 hours.

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

The transition screen cleaning brush tripped a cycle time alarm on May 5, at 0911 hours. The brush was raised, downstream and on the B beam. It appeared the brush raise/low limit had failed due to getting wet from the rainwater coming through the cracks around the access covers. After the limit had time to dry out, the brush was returned to service on May 6, at 0850 hours. No other issues occurred. Accessing this limit switch is very difficult to do without dewatering the channel. For now, this issue will be monitored.

2. Ice Harbor

Yes	No	Sill	Location	Criteria	Measurements
	x		Central fish entrance (CFE-2) weir depth	≥ 8.0’ or on sill	7.7’
	x		Central fish entrance channel/tailwater differential	1.0’ – 2.0’	0.6’, 0.8’
	x		North fish entrance (NFE-1) weir depth	≥ 8.0’ or on sill	7.7’, 7.6’, 7.5’
	x		North fish entrance channel/tailwater differential	1.0’ – 2.0’	0.7’

The central fish entrance channel/tailwater differential was below criteria on May 6. The PLC reading was in criteria. Turbulent tailwater from spill combined with high winds made physical measurement difficult. On May 8, CFE-2 weir depth and channel/tailwater differential were both below criteria. This was most likely due to turbulent tailwater conditions making physical and electronic measurements difficult. On the May 7 inspection, the north fish entrance channel/tailwater differential was below criteria at 0.7’. North shore auxiliary water supply (AWS) pump #2 tripped off during the inspection causing the low differential.

The north fish entrance weir depths were below criteria on all three inspections. PLC readings showed the weir depths to be in criteria but showed the channel/tailwater differentials to be out of criteria during all three inspections. In addition, lower than normal AWS pump discharge chamber/tailwater differentials indicated possible debris buildup on the pump intake trash racks, leading to reduced AWS flow.

North shore AWS pump #1 has been out of service since March 1, 2023, because of a hydraulic cylinder leak on the butterfly valve. A new cylinder is being ordered. 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 will be replaced with a refurbished one.

North shore AWS pump #2 tripped off on a speed switch failure from 0847 hours to 0907 hours on May 7. The pump was restarted without incident. Both running north shore AWS pumps were turned off from 0800 hours to 1215 hours on May 8 (see MFR 24 IHR 03 for more details) to rake a moderate amount of sticks off of pump intake trash racks.

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 weirs are being operated at the actuator to adjust the water level as needed until the problem can be fixed.

The bird abatement hydrocannon was not shooting out any water on Apr 30. The hydrocannon pump was restarted but keeps tripping off.

3. Lower Monumental

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	X	South Powerhouse Entrance (SPE-2) Weir Depth	≥ 8.0' or on sill	

North Shore Entrance NSE-1 weir was out of criteria during the May 4 and 7 inspections with readings of 7.1 and 7.5 feet respectively. North Shore Entrance NSE-2 weir was out of criteria during the May 3 inspection with a reading of 7.3 feet. On May 4, automotive system was not getting readings from channel and tailwater digital gauges causing the issue. Powerhouse operator manually placed both NSE weirs at 430 to correct. On May 7, NSE channel and tailwater digital gauges were not reading the same as the staff gauges, causing the issue. Entrance SPE-2 weir should have been set at sill during the May 7 inspection, however, the gauge at the weir controls showed a reading of 435.9 feet. This would indicate a weir depth of 2.9 feet.

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-1) Weir Depth	≥ 6.0' or on sill	5/3 – 5.8 5/6 – 4.6
X	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0' or on sill	5/3 – 5.8 5/6 – 4.4
X	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	

Current LGS performance spill operations create rapid tailrace elevation changes during each 24-hour period. 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.

5. Lower Granite Dam

Yes	No	Sill	Location	Criteria	Comments
	X	X	North Powerhouse Entrance (NPE-1) Weir Depth	≥ 8.0' or on sill	
	X	X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0' or on sill	
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	0.6', 0.8', 0.6',
	X	X	North Shore Entrance (NSE-1) Weir Depth	≥ 7.0' or on sill	6.4', 6.6', 6.6'
	X	X	North Shore Entrance (NSE-2) Weir Depth	≥ 7.0' or on sill	6.4', 6.6', 6.6', 6.7'

Fish ladder control system operation and configuration is an ongoing issue that began when the system was installed in 2016. Efforts of the electrical crew continue to bring the ladder into criteria however the control system drifts out of calibration shortly after. Tailwater hydraulic conditions result in a drawdown of the north shore with tailwater elevation readings between 631.5'-632.3' this report week. 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. NSE out of criteria reading are likely due to a calibration issue as they both were reading 625.1' on three of the four inspections.

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. It is recommended that pump 1 be removed from service and replaced with pump 2 when the three-year overhaul repairs are complete.

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#10-2024

Project: McNary
Biologist: Bobby Johnson and Paul Bertschinger
Dates: May 3-9, 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**
9 & 10	11/27/23	0631	5/12/24	NA	Control system upgrades
13 & 14	5/7	1004	5/7	1054	ESBS camera inspections, rotated through units

*Comments: RTS dates are subject to change. The hard one percent criteria remained in place. Units 9 and 10 briefly ran outside the criteria for testing during the week. Units 9 and 10 began their 72-hour run test on May 9, at 1550 and 1250 hours, respectively.

Adult Fish Passage Facilities

McNary fisheries staff performed measured inspections of the adult fishways on May 3, 5, and 8. Adult fish counting continued.

Fish Ladder Exits:

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

Comments: Debris loads were minimal near both exits.

There are no problems to report.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Oregon Entrance Head Differential	1.0’ – 2.0’	1.3’ to 1.7’
X			NFEW2 Weir Depth	≥ 8.0’	8.0’ to 8.2’
X			NFEW3 Weir Depth	≥ 8.0’	8.0’ to 8.2’
X			South Oregon Entrance Head Differential	1.0’ – 2.0’	1.4’ to 1.5’
	X		SFEW1 Weir Depth	≥ 8.0’	7.9’ to 8.2’
	X		SFEW2 Weir Depth	≥ 8.0’	7.9’ 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 1.5’
X			WFE2 Weir Depth	≥ 8.0’	9.1’ to 9.9’

	X		WFE3 Weir Depth	≥ 8.0’	7.7’ to 8.5’

Comments: SFEW1 and SFEW2 were out of criteria on May 8. WFE3 was out of criterion on May 5 and 8. 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	OOS	Oregon Ladder Fish Pump 1, return to service June 25
X*			22° to 24°	Oregon Ladder Fish Pump 2
X*			23° to 26°	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. Fish pumps 2 and 3 briefly tripped offline on May 6, from 0752 to 0833 hours. Fish pump 2 was briefly out of service for a bus switch on May 7, from 0613 to 0657 hours.

Juvenile Fish Passage Facility

The juvenile system alternated between primary and secondary bypass every 24 hours at 0700 hours. There were no interrupts in this schedule.

In order to collect steelhead smolts for tagging, for the sample collection days of May 4 and 6, the sample rates were split, with the A side set at 0.5 percent and the B side set at 5 percent. For the sample collection day of May 8, the sample rates were split, with the A side set at 0.5 percent and the B side set at 10 percent.

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 and spillway debris remained minimal to very light. New debris loads were minimal.

The next trash rack cleaning is scheduled for the week of May 13. There are no problems to report. A few pieces of larger woody material were removed from the gatewell slots on May 5 and 9.

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. Screens were lowered in units 9 and 10 on May 8 before the 72-hour run tests began. Camera inspections in units 13 and 14 revealed no issues on May 7. Examination of ESBS screen brush programming continued. The screens in unit 4 tripped alarms and were reset on May 7.
Daily VBS monitoring continued, no high differentials were recorded, and no screens were 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: There are no problems to report.

The transition screen cleaning brush tripped a cycle time alarm on May 5, at 0911 hours. The brush was raised, downstream and on the B beam. It appeared the brush raise/low limit had failed due to getting wet from the rainwater coming through the cracks around the access covers. After the limit had time to dry out, the brush was returned to service on May 6, at 0850 hours. No other issues occurred. Accessing this limit switch is very difficult to do without dewatering the channel. For now, this issue 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 on secondary bypass days. The sample gates will be used every other day. The PIT tag system will not be in use again this season, which is similar to past years.

One of two A side fish counters failed on May 9, at 0200 hours. The counter was replaced, and sample collection was estimated from the failed and new counter.

There were 9,260 juvenile lamprey and 112,621 smolts bypassed this week. The primary species/race was yearling Chinook.

TSW Operations: The TSW's in bays 19 and 20 remained open. Both TSW's are attached to a hoist.

River Conditions

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
147.3	127.2	87.7	66.0	52.2	51.2	6.0	5.0

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 spring spill season continues. The spillway hoists, cranes, and gates are set up per the updated Fish Operation Plan and the FPP.

Bay 6 was adjusted by crane on May 9. If adjustments are required in bays 6 and 9, they will occur on Monday and Thursday.

Rehabilitation of the downstream wall dogs from bay 22 continues.

Other

Inline Cooling Water Strainers: The cooling water strainer inspections reveal 32 live and 130 juvenile lamprey mortalities along with three yearling Chinook mortalities on May 7. The next inspections will be June 4.
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
May 3	Spill	54	0	0	3	0
	Powerhouse	5	0	0	0	0
	Outfall	26	5	0	0	0
	Forebay	0	0	0	0	3
May 4	Spill	136	0	0	1	0
	Powerhouse	13	0	0	0	0
	Outfall	8	13	0	0	0
	Forebay	1	0	0	0	0
May 5	Spill	200	1	0	1	0
	Powerhouse	28	0	0	0	0
	Outfall	12	10	0	0	0
	Forebay	0	0	0	0	81
May 6	Spill	130	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
	Forebay	0	0	0	0	22
May 7	Spill	450	2	0	2	0
	Powerhouse	5	0	0	0	0
	Outfall	46	0	0	0	0
	Forebay	0	0	0	0	23
May 8	Spill	80	0	0	2	0
	Powerhouse	0	0	0	0	0
	Outfall	18	2	0	0	0
	Forebay	3	0	0	0	2
May 9	Spill	57	0	0	6	0
	Powerhouse	39	0	0	0	0
	Outfall	19	3	0	0	0
	Forebay	0	0	0	0	2

In the spill zone, gulls in fluctuating numbers along with a few pelicans and cormorants were noted. Most birds were feeding.

In the powerhouse zone, gulls in fluctuating numbers were seen roosting on the water at the edge of the spill.

In the outfall zone, gulls and cormorants in fluctuating numbers were noted roosting on the outfall pipe along with a few of these birds feeding. An osprey pair has nested on the outfall pipe where the walkway ends. This and the boat hazing has resulted the fluctuating bird counts observed.

For the forebay zone, grebes were observed in fluctuating numbers along with an occasional gull. Most of the birds were roosting with some feeding. More grebes maybe outside the zone along with a few gulls, cormorants, pelicans, and osprey. Pelican numbers in the area is slowly increasing.

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

The laser remained on the navigation lock wing wall opposite the outfall. The program was checked again and found faulty on May 6 and 7. The laser will need to be sent into the manufacture for repairs.

Two bird distress calls on the navigation lock wing wall remained in service and functioned well. They were checked on May 9.

USDA Wildlife Services continued shore and boat hazing. The osprey nest is not an issue.

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

Siberian Prawn: No prawns were observed in the sample this week. None have been observed this season.

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

Research: For the smolt and juvenile lamprey passage studies, PNNL removed 497 smolts and 27 juvenile lampreys from the samples for tagging this week.

For a CRITFC study, there were tissue samples removed from 44 juvenile lamprey collected at the facility this week. The yearly total is 92 fish, which were returned to the river unharmed.

Gas bubble trauma examinations occur twice a week. Fish were collected on May 6 and 8, with the data being reported the next day. For the report week, one mortality was removed from the recovery raceway and no signs of trauma were observed.

Project: Ice Harbor
Biologist: Ken Fone
Biological Science Technician: Ben McArthur
Dates: May 3-9, 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	4/8/24	1315	---	---	Foreign material found in TW6 transformer oil recirculating line

Comments: None.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on May 6, 7, 8.

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	7.7’
	x		Central fish entrance channel/tailwater differential	1.0’ – 2.0’	0.6’, 0.8’
	x		North fish entrance (NFE-1) weir depth	≥ 8.0’ or on sill	7.7’, 7.6’, 7.5’
	x		North fish entrance channel/tailwater differential	1.0’ – 2.0’	0.7’

Comments: The central fish entrance channel/tailwater differential was below criteria on May 6. The PLC reading was in criteria. Turbulent tailwater from spill combined with high winds made physical measurement difficult. On May 8, CFE-2 weir depth and channel/tailwater differential were both below criteria. This was most likely due to turbulent tailwater conditions making physical and electronic measurements difficult.

On the May 7 inspection, the north fish entrance channel/tailwater differential was below criteria at 0.7’. North shore auxiliary water supply (AWS) pump #2 tripped off during the inspection causing the low differential.

The north fish entrance weir depths were below criteria on all three inspections. PLC readings showed the weir depths to be in criteria but showed the channel/tailwater differentials to be out of criteria during all three inspections.

The tailwater readings are believed to be out of calibration and will be recalibrated. In addition, lower than normal AWS pump discharge chamber/tailwater differentials indicated possible debris buildup on the pump intake trash racks, leading to reduced AWS flow. Trash racks were raked on May 8, resulting in slight improvement to measured criteria.

Auxiliary Water Supply System:

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

Comments: North shore AWS pump #1 has been out of service since March 1, 2023, because of a hydraulic cylinder leak on the butterfly valve. A new cylinder is being ordered.

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 will be replaced with a refurbished one.

North shore AWS pump #2 tripped off on a speed switch failure from 0847 hours to 0907 hours on May 7. The pump was restarted without incident.

Both running north shore AWS pumps were turned off from 0800 hours to 1215 hours on May 8 (see MFR 24 IHR 03 for more details) to rake a moderate amount of sticks off of pump intake trash racks. After trash raking was completed, AWS pump amperage readings were still somewhat high and AWS pump discharge chamber/tailwater differential improved only slightly, possibly indicating decreased pump function.

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)	0-30% coverage
	x		Any oil seen in gatewells?	

Comments: None.

Submersible Traveling Screens (STSs) / Vertical Barrier Screens (VBSs):

Yes	No	NA	Item
x			STSs deployed in all slots that are in service?
x			STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
	x		STSs inspected this week?
		x	STSs inspection results acceptable?
		x	VBSs differentials checked this week?
		x	VBSs differentials acceptable?

Comments: None.

Orifices, Collection Channel, Dewatering Structure, and Flume:

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

Comments: The replacement actuator for the water regulating weirs in the collection channel is in local control due to a problem with the actuator being undersized for this application. The actuator will be 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.

Personnel noticed that the bird abatement hydrocannon was not shooting out any water on Apr 30. The hydrocannon pump was restarted but keeps tripping off. Electricians will investigate the problem.

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

Fish Sampling: Juvenile fish sampling is scheduled to occur on Mondays and Thursdays each week. See the tables below for a summary of the sampling results. Seven steelhead in the May 6 sample and six steelhead in the May 9 sample exhibited partial descaling (less than 20% descaled per side of the fish) not attributed to predation attempts by birds or other fish.

Fish condition sampling results at Ice Harbor Dam:

Date: May 6

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	28	0	0	0
Chinook yearling unclipped	3	0	0	0
Chinook subyearling clipped	0	---	---	---
Chinook subyearling unclipped	0	---	---	---
Steelhead clipped	90	1	0	2
Steelhead unclipped	10	0	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	1	0	0	0
Coho unclipped	4	0	0	0
Total	136	1	0	2

Date: May 9

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	19	1	1	0
Chinook yearling unclipped	7	0	0	0
Chinook subyearling clipped	0	---	---	---
Chinook subyearling unclipped	0	---	---	---
Steelhead clipped	81	0	0	0
Steelhead unclipped	14	0	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	1	0	0	0
Total	121	1	1	0

Removable Spillway Weir (RSW): Spring 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
77.2	67.5	63.5	54.0	55	55	5.6	4.6

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected for lamprey on May 1. A total of 166 juvenile lamprey, 1 adult lamprey, 60 Siberian prawns, 1 juvenile smallmouth bass, and 1 unidentifiable decomposing juvenile salmonid (all fish were mortalities) were found.

Avian Activity: There were variable numbers of piscivorous birds seen around the project (see table below). The pelicans observed on May 3 were counted before bird hazing began for the day. The pelicans were scattered across the tailrace and not concentrated in any particular spot. Land-based hazing has been effective at moving pelicans in the tailrace further downstream, away from the dam. Land-based hazing of piscivorous birds is occurring for 16 hours each day. Boat-based hazing is occurring 5 days per week for up to 8 hours per day.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
May 3	2	7	0	0	198
May 4	0	4	0	0	0
May 5	5	5	0	0	2
May 6	6	7	1	0	2
May 7	4	3	0	0	0
May 8	0	7	0	0	0
May 9	0	0	0	0	0

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. Daily and total Siberian prawn counts at Ice Harbor Dam for this reporting period are shown below.

Number of Siberian prawns in the sample at Ice Harbor Dam.

Date	Sample (euthanized)	Collection*
May 6	0	0
May 9	0	0
Totals	0	0

*Collection and sample numbers are the same for the facility when sampling at 100%

Fish Rescue/Salvage: None.

Research: No on-site research is occurring.

Project: Lower Monumental
Biologists: Denise Griffith and Raymond Addis
Dates: May 3 - 9, 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	5/01/24	0624	5/09/24	1112	BPA Line Trip
Unit 2	5/01/24	0624	5/09/24	1415	BPA Line Trip RTS 1112, STS Inspection RTS 1415
Unit 3	5/01/24	0624	5/09/21	1112	BPA Line Trip
Unit 3	5/09/24	1425	5/09/24	1645	STS Inspection
Unit 4	5/01/24	0624	5/09/24	1112	BPA Line Trip
Unit 5	5/01/24	0624	ERTS	TBD	BPA Line Trip
Unit 6	5/01/24	0624	ERTS	TBD	BPA Line Trip

Comments: BPA line tripped at ~ 0624 on May 1. T1 line RTS at 1006 on May 9. Unit 1 operated at spin no load for station power until T1 line returned to service on May 9. Units 5 and 6 remain out of service until T2 line is repaired and returned to service in switch yard. There currently is no estimated return to service for this line outage.

Adult Fish Passage Facility

Lower Monumental fish facility and EAS staff inspected the adult fishways on May 3, 4, 5 and 7.

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	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 out of criteria during the May 4 and 7 inspections with readings of 7.1 and 7.5 feet respectively. North Shore Entrance NSE-2 weir was out of criteria during the May 3 inspection with a reading of 7.3 feet. On May 4, automotive system was not getting readings from channel and tailwater digital gauges causing the issue. Powerhouse operator manually placed both NSE weirs at 430 to correct. On May 7, NSE channel and tailwater digital gauges were not reading the same as the staff gauges, causing the issue. South Powerhouse Entrance SPE-1 weir was at sill during all inspections with readings 7.4, 6.2, 6.2 and 6.8 feet respectively. South Powerhouse Entrance SPE-2 weir was at sill during the May 3, 4 and 5 inspections with readings 7.4, 6.2 and 6.2 feet respectively. Entrance SPE-2 weir should have been set at sill during the May 7 inspection, however, the gauge at the weir controls showed a reading of 435.9 feet. This would indicate a weir depth of 2.9 feet. South Shore Entrance SSE-1 weir was at sill during all inspections with readings of 7.3, 6.2, 5.8 and 5.9 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)	43 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: Gatewell drawdowns were not performed this reporting period due to the line outage. The only unit running, Unit 1, was operating at spin no load for station power, so those gatewell levels were the same as the forebay water level.

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		VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: STSs running in cycle-run mode until sampling shows to average sub-yearling Chinook and sockeye lengths being less than 120 mm. STS and VBS inspections occurred from May 7 to 9. All were in good working condition.

Orifices, Collection Channel, Dewatering Structure, and Flume:

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

Comments: None.

Collection Facility: Collection into the raceways for barge transport were halted at 1800 on May 3 and the facility went to secondary bypass at that time. The need to stop spill at Lower Monumental Dam when the fish barge transits the tailrace causes flow fluctuations and the need for raised MOP at Ice Harbor Dam. There are indications of adult fish passage delay at Ice Harbor Dam due to the fluctuations. This comes as a request by the regional fisheries. The Sampling PLC Control display would not come back on at approximately 1200 on May 5. PFMFC personnel replaced the display at approximate 1300 on May 6. Due non-collection of fish for transport, the facility began every-other day condition sampling began after the May 7 sample. Estimated return to transport collection is May 16.
The Johnson screens for the A side sample dewaterer were found raided up and moved out of their slot locations on May 6. The A side separator exit was closed until the screens were returned to their positions. There is a possibility that some A side fish may have been pulled into the dewaterer during sampling. It is unclear how this happened.

Transport Summary: Daily barge transport was halted at Lower Monumental with the May 3 barge, see Collection Facility above. Estimated return to transport is May 17. A total of 2,267 fish were collected of which 921 were transported and 1,342 were bypassed. All fish were bypassed after 1800 on May 3. The barge dock was damaged during tie up on May 2. Bracing for the deck I-beams between the middle and upstream coffer cells was pushed forward and no longer contacts the decking I-beams. The footers could be dislodged and/or the vertical support I-beam being damaged. The damage was inspected on May 6 by Walla Walla district Structural Design Section personnel. The center and upstream section have been given the green light for use, but personnel are restricted from the downstream section.

Spillway Weir: Spring spill continues. Spill flow had to be increased approximately 6 kcfs to compensate for no Unit output starting approximately at 0700 on May 1. Spill flows returned to normal after Unit 1 returned to service at 1112 on May 9.

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
74.1	66.1	67.5	59.7	53.5	52.0	5.7	4.4

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers will next be inspected in April.

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

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
5/3/2024	600	12	17	0	15	41
5/4/2024	1630	11	0	0	0	0
5/5/2024	1600	32	0	0	0	1
5/6/2024	1500	141	0	0	0	37
5/7/2024	900	81	0	0	0	23
5/8/2024	1030	22	0	0	0	0
5/9/2024	1040	0	0	0	0	4

Comments: Bird hazing by USDA personnel begin on April 8. Switching power to T1 line on May 9 caused the bird cannon to shut down. Once power was restored, the bird cannon was RTS.

Invasive Species: Zebra or quagga mussel traps were examined on May 3. None were found.

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*
5/3/2024	0	0
5/4/2024	0	0
5/5/2024	0	0
5/6/2024	0	0
5/7/2024	0	0
5/8/2024	---	---
5/9/2024	5	10
Total	5	10

*Collection refers to extrapolated values based on sampling percent.

Fish Rescue/Salvage: No fish rescue was performed this week for Lower Monumental Dam.

Research: This season, PNNL plan to obtain lamprey from Lower Monumental Dam to study behavior and survival of Pacific lamprey.

GBT examinations occurred on May 3 and 7. A total of 19 clipped yearling Chinook, 6 unclipped yearling Chinook, 81 clipped steelhead and 12 unclipped steelhead smolts were examined, both days combined. No gas bubble trauma was detected.

The Nez Perce steelhead kelt study and rehabilitation collection continued, one steelhead kelts was placed in the collection tank for this reporting period.

Project: Little Goose Dam
Biologist: Deb Snyder, Cole Reeves
Dates: May 3 – May 9, 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**
5	4/14/2017	14:11	06/30/2024	ERTS	Spider and upper guide bearing repair.

Comments: Contractual obligations and performance issues realigned the Unit 5 ERTS date into 2024.

Adult Fish Passage Facility

USACE and EAS Bio staff inspected the adult Fishway on May 3, May 6, and May 8.

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	5/3 – 5.8 5/6 – 4.6
X	X		North Shore Entrance (NSE-2) Weir Depth	≥ 6.0’ or on sill	5/3 – 5.8 5/6 – 4.4
X	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. Current LGS performance spill operations create rapid tailrace elevation changes during each 24-hour period. 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.

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 10 ft² - Low 0 ft²
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X	X		Any debris seen in gatewells (% coverage)	5/3-2A:1%,4A:1%,5B:1%, 5C:2%,6A:2%,6C:1% 5/4-4B:1%,5B:2%,5C:1%,6C:1% 5/7-5C:1%,6B:1%,6C:1% 5/8-4A:1%,4B:1%,5C:1% 5/2-5C:5%,6A:2%,6B:1%, 6C: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 May 9 at 10 ft². The overall total forebay debris high occurred May 9 at 10 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.

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. During this reporting period a total of 96,981 fishes were collected, 96,880 were barged, and there were 94 sample or facility mortalities. The descaling and mortality rates were 3.7% and 0.09%, respectively. The collection and transport facility operated within criteria and no lamprey were removed from the sample or separator during this report period. Everyday collection began April 23 coinciding with starting barge transportation operations.

Transport Summary: Collection for fish transportation began April 23 with the first barge departure on April 24. Every day barging is scheduled thereafter pending situational transition to every other day barging due to any unforeseen changes in fish numbers.

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. Summer spill operations are scheduled to begin 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
73.6	65.9	48.2	42.0	53.9	52.1	4.7	2.8

*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
5-3	1300	22	0	0	0
5-4	0830	1	0	0	6
5-5	0830	0	0	0	12
5-6	0800	0	0	0	0
5-7	0830	6	0	0	10
5-8	1145	4	0	0	6
5-9	0800	8	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*
5-3	0	0
5-4	0	0
5-5	0	0
5-6	0	0
5-7	1	25
5-8	0	0
5-9	0	0
Totals	1	25

*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 May 1. Of the 100 fish examined, zero had gas bubble trauma symptoms.

Fish Rescue/Salvage: Fish rescue activities due to every-other-day collection and return to primary bypass operations took place April 19 and April 21. Results were reported and submitted to District.

Research: The Nez Perce Tribe (NPT) commenced adult steelhead kelt collection efforts on March 27 with an anticipated conclusion date of July 1.

Project: Lower Granite
Biologists: Elizabeth Holdren and Steve Lee
Dates: May 3-9, 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**

Comments:

Adult Fish Passage Facility

Lower Granite Biologists and EAS staff inspected the adult fishway on May 3, 4, 5, and 7.

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: LWG mechanical crew is prioritizing returning auxiliary cooling pumps to their original orientation with a target completion date of 1 June.

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	
	X	X	North Powerhouse Entrance (NPE-2) Weir Depth	≥ 8.0’ or on sill	
	X		North Powerhouse Entrance Channel/Tailwater Differential	1.0’–2.0’	0.6’, 0.8’, 0.6’,
	X	X	North Shore Entrance (NSE-1) Weir Depth	≥ 7.0’ or on sill	6.4’, 6.6’, 6.6’
	X	X	North Shore Entrance (NSE-2) Weir Depth	≥ 7.0’ or on sill	6.4’, 6.6’, 6.6’, 6.7’
X			North Shore Channel/Tailwater Differential	1.0’–2.0’	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Fish ladder control system operation and configuration is an ongoing issue that began when the system was installed in 2016. LWG is 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 into criteria however the control system drifts out of calibration shortly after. Tailwater hydraulic conditions result in a drawdown of the north shore with tailwater elevation readings between 631.5’-632.3’ this report week. 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. NSE out of criteria reading are likely due to a calibration issue as they both were reading 625.1' on three of the four inspections.

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. It is recommended that pump 1 be removed from service and replaced with pump 2 when the three-year overhaul repairs are complete. Swapping the AWS pumps will be scheduled when the mechanical crew has completed reconfiguring the fish ladder cooling pumps to its original state.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	58.3 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: The juvenile facility is collecting daily for condition sampling and transport. Collection for the NOAA season effect of transport and in river survival evaluation Sunday through Thursday.

Collection Facility: The facility is collecting for everyday transport and research.

Transport Summary: Fish are being transported daily. Every other day barging will begin 18 May. Repairs were completed on barge 8108 engines 1 and 2 during the return trip May 8. Fish transport from LMN was suspended.

Spillway Weir: Spring spill operation began April 3.

PIT tag interrogations: RSW detections included 35,897 juvenile and 1 adult Chinook salmon, 35,967 juvenile and 383 adult steelhead, and 340 juvenile coho salmon at the RSW. Juvenile bypass system detections included 5,487

juvenile and 2 adult Chinook salmon, 7,386 juvenile and 24 adult steelhead, and 14 juvenile coho salmon through May 09 (PTAGIS).

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
75.9	69.1	63.5	56.7	52.0	50.0	5.0	3.2

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A

Invasive Species: No zebra/quagga muscles were detected on the trap substrate. One dead Siberian prawn was collected in the sample.

Avian Activity: Biologist daily piscivorous bird counts and hazing began April 1. Bird hazers are on site daily.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
3-May	1245	0	0	0	0
4-May	1230	0	0	0	0
5-May	1400	0	0	0	2
6-May	1645	2	0	0	1
7-May	1145	4	0	0	1
8-May	1142	0	0	0	4
9-May	1220	0	0	0	0

Gas Bubble Trauma (GBT) Monitoring: SMP examined 78 salmonids with no signs of GBT symptoms May 9.

Adult Fish Trap Operations: The adult trap was watered up March 4. 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.

Fish Rescue/Salvage: N/A

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.

Nez Perce Tribe (NPT)/U. of Idaho (UI)/Columbia River Intertribal Fisheries Commission (CRITFC) – Kelt Study

This research investigates steelhead kelt physiology and endocrinology to evaluate the feasibility and success of rehabilitating strategies. The goal is to collect kelts from LWG and LGO juvenile fish facility separators. Up to 500 selected kelts are transported by NPT to Dworshak National Fish Hatchery for reconditioning and later release as part of this study.

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.

PNNL Juvenile Pacific Lamprey Passage Behavior and Survival study:

Juvenile lamprey (macropthalmia) will be collected from LWG sample, as needed, to meet PNNL downriver study objectives. No juvenile lamprey collected from LWG this week 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 programs efficacy and assist with guiding future management. LWG SMP have collected genetic samples from 231 juvenile and 109 larval lamprey this season.

National Marine Fisheries Service (NMFS) In-River Survival:

NMFS PIT-tag Chinook and steelhead smolts for their Survival Study April through early June to compare smolt to adult returns of in-river migrating smolts to the smolt to adult returns of transported smolts. PIT-tagged fish are held for 24 hours before being bypassed to the LWG tailrace. Collection and tagging will continue Monday-Friday until the middle of June.

National Marine Fisheries Service (NMFS) Seasonal Effects of Transporting Fish from the Snake River to Optimize Transportation Strategy:

This study aims to build on the current database of information on the seasonality of smolt-to-adult return rates (SARs). Collection will occur Sunday-Thursday with fish being tagged Monday-Friday throughout the barging fish transport period. Collection and tagging continue as scheduled.

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.