U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#28-2014

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: September 5 - 11, 2014

Turbine Operation

McNary had 9 to 10 units available for power generation this week. The hard constraint one percent criterion continues with no units having run outside the criteria. The summer unit priority sequence, known as the "saw tooth" pattern with units being alternately on or off, will conclude next week. Unit outages are recorded in Table 1 below.

Table 1. Unit Outages at McNary Dam.

Units	Outage Dates	Outage Length	Main Reason for Outage
11	Sep 18, 2013 to Nov 15, 2014	About one year and two months.	Turbine bearing issue continues.
4	Mar 27 to Nov 15	About 7.5 months.	Turbine bearing issue continues.
9	Aug 11 to Mar 25, 2015	About 7.5 months.	Maintenance then rewind contract.
5	Sep 2 to 25	About 23 days.	Annual and above water maintenance.
6	Sep 3 to 6	About three days.	Outage related to unit 5.
6	Sep 6	5.3 hours.	Ground and governor issues.
1	Sep 9	21 minutes.	ESBS camera inspections.

Adult Fish Passage Facilities

On September 5, 7 and 9, the McNary fisheries biologist performed measured inspections of the adult fishways. The fisheries staff is checking the exits on all shifts when the juvenile system is in primary bypass. Visual adult fish and lamprey counts and exit temperature monitoring continue.

On September 8, PIT tag station heat pumps in both ladders underwent scheduled maintenance. One of the units at the Oregon station appeared not to be working properly. We have asked the mechanical staff to examine the unit.

On September 17, the lamprey passage research camera frame at SFEW2 will be raised for inspection.

Winter maintenance planning continues.

Fish Ladder Exits: Project personnel continued to clean the picketed leads as required and on weekends. During the nights of September 5 and 6, the roving operator cleaned the Washington ladder picketed leads multiple times. The amount of milfoil in the area is fairly light.

During measured inspections, both ladder exits met all Fish Passage Plan criteria. At the Washington exit, weir 339 triggered alarms on 10 occasions this week. In each case, operators reset the alarm without incident. Finally, on September 5 and 7, operators adjusted the exit weir set points.

At the Oregon exit, the operator adjusted the set points on September 5 and 7. In addition, 2 false traveling screen differential alarms were also reset without incident this week. Although screen differentials remain low, trash rack differentials remain stable (between 1.3 and 1.6 feet). We will continue to monitor both differentials regularly. Debris loads along the Oregon Shore and in the area of the exit continue to fluctuate depending on wind direction.

Fishway Entrances and Collection Channel: At the Washington ladder entrance, all inspection points were in criteria. In the near future, project personnel will replace the LEDs (Light Emitting Diodes) for W2 and W3 with a panel view.

At the Oregon ladder entrances, all inspection points were in criteria. At the north entrance, lower tailwater elevations are causing a reduction in criteria point values. At the south entrance, SFEW1 and SFEW2 continued to have very slight calibration drifts. Electrical upgrades at the Oregon entrances will be completed in the near future.

Surface collection channel velocities averaged 1.5 feet per second. Lower tailwater elevations are probably affecting these readings.

Auxiliary Water Supply System: For the report week, the PUD turbine unit at the Washington ladder had no interruptions in service. Fish pumps 1 and 3 satisfactorily operated with blade angles of 30 degrees. Pump 2 remains out of service for major overhaul which will require a contract for the winter of 2014 – 2015. The juvenile facility continues to supply the usual 450 cfs to the north powerhouse pool without any interruptions in service.

Juvenile Fish Passage Facility

The bypass season continues with alternating days of secondary and primary bypass with the switch in modes occurring every morning at 0700 hours. There were no deviations from this schedule. Secondary bypass occurred on September 5, 7, 9 and 11. We bypassed 664 smolts, 32 juvenile lamprey and 175,620 juvenile shad this week.

Water temperature monitoring concluded on September 1. Since facility temperatures remain below 70 degrees F and fish numbers have dropped, the sample rate was returned to normal operational levels on September 3.

Winter maintenance planning continues.

Forebay Debris/Gatewell Debris/Oil: Floating forebay debris, consisting mainly of milfoil along with woody material, was minimal to very light. Also, incoming debris was minimal. Changes in wind direction moved the debris from the powerhouse to the Oregon shore and back. There is no debris at the spillway.

Our trash rack differential readings revealed no problems and no racks were cleaned this week. We observed no problems in the gatewell slots.

ESBSs/VBSs: ESBSs are deployed in all units except units 4 and 11, which are out of service. The screens in slots 1A, 7A and 13C remain in timer mode. On September 7, the screen in slot 8C was not communicating properly with the electronic monitoring/control system. Operators reset and calibrated this screen multiple times. On September 9, we performed camera inspections in units 1 and 2, with satisfactory results. Unit 2 was in standby. No ESA listed fish or lamprey mortalities were seen in the gatewell slots during the inspections.

VBS differential monitoring efforts revealed one screen out of criteria. On September 5, 6 and 9, the project cleaned this screen and seven others. One smolt mortality was seen during these cleaning efforts. VBS rehabilitation continues with unit 11 as the staging area.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Forty two orifices were open all week. During VBS cleanings, we closed the orifices in the slots the work was being done and opened spare orifices in adjacent slots. We replaced attraction light bulbs as need.

There are no technical issues to report as all systems functioned well in automatic mode. The transition screen cleaning device remains out of service until winter.

Bypass Facility: During the bypass season, both bypass modes return all fish to the river. PIT tag detection occurs in the full flow pipe during primary bypass and throughout the facility during secondary bypass. Smolt monitoring occurs only on secondary bypass days.

Sample gates operate only during secondary bypass periods. The gates and all systems functioned well. The primary PIT tag system remains off as the bypass lines provide a better route for the fish than the PIT tag system return lines. The PSMFC staff continues to perform weekly examinations of the PIT system. The secondary PIT/bypass gates remain off and open for bypass.

This week, we removed the nonfunctional spray bar system from the raceways. The 3 main flume covers were also repaired.

River Conditions

River conditions during the week are outlined in Table 2 as provided by the smolt monitoring staff, whose data day runs from 0700 to 0700 hours each day. On September 5 and 6, project

personnel installed a TSW and hoist in bay 20 for the upcoming adult fallback study. On September 6, a slight amount of spill occurred during TSW tests.

Table 2. River conditions at McNary Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temp. (^{o}F)		Water Clarity* (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
108.3	80.8	0.0	0.0	68.7	67.5	6.0	5.8

*Control Room Data.

Other

Inline Cooling Water Strainers: The next strainer examination will occur in early October.

Invasive Species: The next zebra mussel station examination will occur in late September.

Avian Activity: Bird counts continued with each zone being counted by the fisheries staff once a day, usually in the morning. Counts are reflected in Table 3 below.

USDA bird hazing concluded August 2. We continue to examine, monitor temperature and add oil to the outfall water cannon supply pump. We also continued to check and clean the pump's intake. Pump repairs are being arranged.

The bird distress calls deployed along the navigation lock wing wall and around the project appear to have discouraged roosting. The fisheries staff monitors and adjusts all hazing equipment as needed.

In the tailwater area, gulls and cormorants were feeding in the powerhouse flow and roosting on the navigation lock wing wall, which is part of the spill zone. Also, we observed gulls and cormorants at the bypass outfall. Terns and pelicans appear to have left the project following spill closure. Bird numbers are now mainly affected by the juvenile shad out migration.

In the forebay area, we observed an occasional gull or group of roosting gulls. The grebes and ospreys appeared to have left the project. We continue to observe gulls and cormorants on the rock by the Washington boat dock.

Table 3. Daily Avian Counts at McNary Dam.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
Sep 5	Forebay	0	0	0	0	0
	Spill	120	50	0	0	0
	Powerhouse	57	0	0	0	0
	Outfall	5	6	0	0	0
Sep 6	Forebay	0	0	0	0	0
	Spill	6	25	0	0	0
	Powerhouse	35	0	0	0	0
	Outfall	10	8	0	0	0
Sep 7	Forebay	0	0	0	0	0
	Spill	27	36	0	0	0
	Powerhouse	68	0	0	0	0
	Outfall	5	5	0	0	0
Sep 8	Forebay	1	0	0	0	0
	Spill	43	24	0	0	0
	Powerhouse	41	0	0	0	0
	Outfall	9	5	0	0	0
Sep 9	Forebay	0	0	0	0	0
	Spill	47	46	0	0	0
	Powerhouse	27	3	0	0	0
	Outfall	3	10	0	0	0
Sep 10	Forebay	0	0	0	0	0
	Spill	92	58	0	0	0
	Powerhouse	91	0	0	0	0
	Outfall	7	7	0	0	0
Sep 11	Forebay	0	0	0	0	0
	Spill	14	24	0	0	0
	Powerhouse	21	0	0	0	0

Research: Preparations for the adult lamprey passage and the adult salmonid fallback studies continued. On September 11, there was a meeting to discuss the TSW being used for the study.

Project: Ice Harbor
Biologists: Ken Fone
Dates: September 5 - 11, 2014

Turbine Operation

Unit 3 was taken out of service on July 7 at 1346 hours to investigate a generator electrical grounding problem. Annual maintenance of unit 3 is also taking place. Unit 4 was out of service from 0830 hours on August 4 to 1700 hours on September 8 for annual maintenance. Unit 5 was removed from service on September 9 at 0800 hours for annual maintenance. Available units were operated within 1% of peak turbine efficiency as specified in the Fish Passage Plan.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on September 8, 9, 10, and 11.

Fish Ladders: The north fish ladder inspection areas (head differentials at fishway exit and picketed leads, and depth over weirs) were in criteria on all inspections. The south fish ladder inspection areas (head differentials at fishway exit and picketed leads, and depth over weirs) were in criteria on all inspections. Criteria for head differentials at ladder exits and picketed leads, and depth over the weirs are 0.5 feet or less, 0.3 feet or less, and 1.0-1.3 feet, respectively. Fish ladder exits were clear of debris and the bubblers were operating satisfactorily. Both the north and the south shore picketed leads are in their deployed positions.

Fishway Entrances and Collection Channel (inspection date order): The south shore entrance (SFE) depth and channel/tailwater differential were in criteria on all inspections. The north powerhouse entrance (NFE) depth and channel/tailwater differential were in criteria on all inspections. The north shore entrance (NSE) depth and channel/tailwater differential were in criteria on all inspections. Fishway entrance criteria are 8 feet depth or greater, or on sill. Channel/tailwater differential criteria are 1 – 2 feet.

Auxiliary Water Supply System: Two of the 3 north shore fish pumps were operated throughout the week. Six of th 8 south fish pumps were operated.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was little to no debris observed in the forebay and gatewells.

STSs/VBSs: STSs are in position for juvenile fish guidance and have been in cycle run mode since July 21. Units 1, 2, 4, 5, and 6 STS inspections and unit 5 VBS inspections were performed on August 18 and 20. No significant problems were found. The next STS inspections are scheduled for the week of September 22.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe: The juvenile fish bypass was placed in operation on March 17. Twenty orifices are open.

Juvenile Bypass Facility: The bypass is in operation.

Fish Sampling: Sampling operations began on April 2 and ended on July 15.

Removable Spillway Weir: The RSW is in operating position. Spill in support of fish passage began on April 3, 2014 and ended on August 31 at 2359 hours.

River Conditions

River conditions during the week are outlined in Table 1 below.

Table 1. River conditions at Ice Harbor Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
29.1	20.8	0	0	70	68	8.2	8.2

*Unit 1 scrollcase temperature.

Other

Inline Cooling Water Strainers: Monthly turbine cooling water strainer inspections of units 1, 2, 4, 5, and 6 took place on August 18 and 20. A total of 21 Siberian prawn mortalities were found. The next inspections are scheduled for the week of September 22.

Invasive Species: No new exotic species have been found.

Avian Activity: Contracted hazing of piscivorous birds for 16 hours per day began on April 1 and ended on June 30. The piscivorous bird count program at the project began on April 1 and ended on July 15. Relatively low numbers of cormorants, gulls, and pelicans were seen around the project during the week.

Research: No onsite fish research is in progress at this time.

Project: Lower Monumental
Biologists: Bill Spurgeon and Ray Addis
Dates: September 5 - 11, 2014

Turbine Operation

The units are being operated in hard constraint of the 1% operation criteria. Unit 4 exceeded 1% operating limitations on September 9 from 1615 to 1631 hours (16 minutes total) due to delayed electrical loading during unit start up. Unit 5 was taken out of service on September 10 and 11 for exciter maintenance. Unit 6 remains out of service for overhaul.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and PSMFC/State biologists on September 5, 6, 7 and 10.

Fish Ladders: Fishway exit head differentials and depths over the weirs were within criteria (≤ 0.5' and 1.0'-1.3', respectively) on all inspections. Picketed lead head differentials were in criteria (≤ 0.4' and ≤ 0.3' for north and south shore fishways, respectively) on all inspections.

Fishway Entrances and Collection Channel: NSE1 and NSE2 weir gates were in depth criteria (criteria: ≥ 8' or on sill) on all inspections. North shore channel/tailwater head was in criteria (1'-2') on all inspections.

SPE1 and SPE2 weir gates were in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill the gate depth readings were 6.9', 7.3', 7.3', and 7.3 feet. South powerhouse channel/tailwater head was out of differential criteria (1'-2') during the September 6 inspection (0.7 feet). Operator adjusted weir gates to bring the differential back into criteria.

SSE1 weir gate was in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, the gate depth readings were 7.9', 8.6', 8.5' and 8.0 feet. SSE2 was in criteria (6' above sill) on all inspections. South shore channel/tailwater head was in criteria (1'-2') on all inspections.

The collection channel velocity remained in criteria (1.5 - 4.0 ft/sec) this week.

Any criteria violations at the fishway entrances are related to the failure of the PLC (Programmable Logic Circuit) for automated control. Without automated control, the FCRG (Fishway Control Regulating Gate) drifts closed causing the fishway entrance head to go out of criteria at the south shore entrances. Operators are manually controlling the FCRG and fish pumps to maintain head and depth criteria at fishway entrances. The loss of the fishway PLC also caused all weir gates to be placed in local control. This results in criteria violations if monitoring and adjustment does not occur as tailwater level fluctuates. To minimize this, SPE1 and SPE2 are placed on sill.

The replacement PLC for automated control of the fishway has been received. It is currently undergoing programming. The automated system is estimated to return to service in August. The operators have been instructed to conduct a physical inspection on night shift to replace the FPP inspection via data screen conducted normally on that shift.

Auxiliary Water Supply System: All AWS pumps were in service and operating throughout this period.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was an average of 91 square yards of forebay debris observed during this period. Gatewell debris ranged from 0 - 5% surface coverage. Oil absorbent pads were placed in 4 gatewells due to a sheen that was likely caused by grain dust.

STSs/VBSs: STSs are operating in cycle mode. STSs were inspected September 9 and 10. All screens passed inspection.

Orifices, Collection Channel, Dewatering Structure, Flume: The collection channel is operating with 18 orifices open.

Collection Facility: No problem with the facility during this period.

Transport Summary: Alternate day trucking is occurring.

River Conditions

Summer spill ended at 0000 hours on September 1. River conditions during the week are outlined in Table 1 below.

Table 1. River conditions at Lower Monumental Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (^{o}F)*		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
25.8	20.5	0.0	0.0	68.9	67.8	5.0+	5.0+

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on September 8. No live fish were recovered. Mortalities included l adult lamprey, 8 shad and 17 prawns.

Invasive Species: No zebra mussels were observed at the monitoring stations on September 6.

Avian Activity: Daily tailrace counts of feeding piscivorous birds are summarized in Table 2 below. Gulls were the dominant species observed during inspections this week. Hazing for the season ended on June 2. No additional action trigger points were met from the avian action plan through this time period.

Table 2. Tailrace Counts of Foraging Piscivorous Birds at Lower Monumental Dam.

Date	Time (hours)	Gulls	Cormorants	Terns
September 5	1100	0	0	0
September 6	1100	1	0	0
September 7	1100	0	0	0
September 8	1105	0	1	0
September 9	1100	0	0	0
September 10	1100	1	0	0
September 11	1100	1	3	0

Research: No onsite research is in progress at this time.

Project: Little Goose
Biologist: James Brandon
Dates: September 5 - 11, 2014

Turbine Operation

Turbine units 1, 2, 4 and 6 were available for this report period. Unit 3 was placed out of service on July 7 at 0700 hours for a planned 6 year overhaul. Unit 5 was out of service this report period as Station Service Transformer 1 is not working properly. All available turbine units were operated within 1% peak efficiency range.

Adult Fish Passage Facility

Adult fishway inspections were performed on September 9 and 11.

Fish Ladder: No differentials were measured at the ladder exit (criteria $\leq$ 0.5 ft.). Water depths over the weirs held steady at 1.2 feet (criteria 1.0-1.3 ft.). No differentials were observed at the picketed leads (criteria $\leq$ 0.3 ft.). No debris was observed at the picketed leads or the ladder exit. The air bubbler used to prevent debris from collecting near the ladder exit operated satisfactorily.

Fishway Entrances and Collection Channel: Channel to tailwater head differentials ranged between 0.8 and 1.9 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.1 and 8.2 feet (criteria $\geq$ 8.0 ft). NPE weirs ranged between 7.1 and 7.4 feet (criteria $\geq$7.0 ft). NSE weirs are in manual mode and depths ranged between 6.5 and 8.0 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocities near north shore entrance ranged between 2.1 to 2.2 fps (criteria 1.5 to 4.0 fps). North powerhouse surface water velocities measured between 1.7 and 2.3 fps.

Auxiliary Water Supply System: All fish pumps operated within criteria.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: No woody debris was observed in the immediate forebay. Trace amounts of oil were reported in gatewells 5A and 6C. Oil absorption pads are deployed.

Spillway Weir: The spillway weir was removed from service on August 4.

ESBS/VBS: All ESBSs operated within criteria this report period. Drawdowns were completed on units 1 and 2 on September 10. All measured within criteria.

Orifices, Collection Channel, Dewatering Structure, and Flume: The number of opened orifices in the juvenile collection channel was reduced to 19 open orifices due to an increase in forebay elevation.

Transportation Facility: The collection and transportation facility operated within criteria this report period. Daily fish collection ranged between 29 and 67 and totaled 267 for the week. The descaling and mortality rates were 1.1% and 10.8% respectively. This weekly report period saw 4 adult lamprey removed from sample and released above the dam at Little Goose Landing.

Transport Summary: Every other day trucking continues with no problems encountered.

River Conditions

Table 1. River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
23.5	19.6	0	0	66.8	66.6	6.0+	6.0

*Ladder temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers were checked on September 06. No fish were found.

Invasive Species: No zebra mussels were observed on the substrate monitor on September 13. The next inspection is scheduled for October 13.

Avian Activity: USDA-APHIS bird hazing ended on June 20. Peak daily avian counts are listed in Table 2 below.

Table 2. Maximum Daily Avian Counts (single observation) at Little Goose Dam.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
September 5	1430	17	22	0	0
September 6	1550	21	20	0	0
September 7	1500	13	14	0	0
September 8	1600	16	7	0	0
September 9	1530	8	7	0	0
September 10	1325	16	7	0	0
September 11	1200	13	5	0	0

Gas Bubble Disease: WDFW Gas Bubble Trauma monitoring concluded July 28.

Research: The University of Idaho continued their adult salmon and adult lamprey passage study.

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: September 5 - 11, 2014

Turbine Operation

Turbine units are being operated within the 1% hard constraint operating criteria. Unit 4 was out of service from 0716 hours on August 4 to 0800 hours on September 10 for annual maintenance. Unit 5 was removed from service for annual maintenance at 0657 hours on September 2. The expected return to service date for unit 5 is September 8.

Adult Fish Passage Facility

The fish ladder was inspected on September 8, 9, and 11. Operation of Rental Pumps A, B, and C to cool adult fish ladder water temperature was interrupted from 0730 to 0812 hours and from 1143 to 1201 hours on September 9 due to the generator surging. At 1323 hours on September 9 an operator noted the generator for the rented pumps was off. The generator was returned to service at 1341 hours the same day. Operation of the Rental Pumps ended at 0826 hours on September 11. Auxiliary Pump 1 remains in operation. Visual adult fish counts are scheduled to continue through October 31.

Fish Ladder: Fishway exit head differentials and depths over the weirs were in criteria (≤0.5' and 1.0-1.3', respectively) on all inspections. Picketed lead head differentials were in criteria (≤ 0.3') on all inspections.

Fishway Entrances and Collection Channel: NSE1 was out of criteria (criteria ≥7' or on sill) on all inspections. NSE1 depth readings were 5.2', 5.2', and 5.1 feet. NSE2 was out of criteria during 2 inspections with depth readings of 6.9' and 6.8 feet. North shore channel/tailwater head was out of criteria (criteria 1'-2') on all inspections. The head differential readings were 0.3', 0.4', and 0.5 feet. NSE2 has been out of service since 2011 and is currently suspended with a hoist system at a compromised depth of 630.0 feet. The weir gate requires a complete rehabilitation and will remain out of service until funding is available. Entrance weir depths are being sacrificed in an attempt to maintain channel/tailwater head differential.

NPE1 and NPE2 weir gates were within depth criteria (criteria ≥8' or on sill) on all inspections. North powerhouse channel/tailwater head differentials were out of criteria (criteria 1'-2') on 2 inspections with readings of 0.6' and 0.9 feet.

SSE1 and SSE2 weir gates were in depth criteria (criteria ≥8' or on sill) on all inspections. South shore channel/tailwater head was in criteria (criteria 1'-2') on all inspections

The collection channel velocity was out of criteria (criteria 1.5-4.0fps) on all inspections. The daily average channel velocity readings were 1.0, 0.9, and 0.9 feet per second. These readings

are likely inaccurate due to a faulty velocity meter. The powerhouse electrical crew is investigating the problem and looking into alternatives for velocity meter replacement.

Auxiliary Water Supply System: All pumps were available for service. Pumps 1 and 3 were operated and fish pump 2 was held in standby mode.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Forebay debris varied during the week due to wind strength and direction. Daily monitoring and removal of gatewell debris continues.

ESBSs/VBSs: ESBSs are deployed in all units. The brush cleaning cycle is set for once every 2 hours. ESBSs/VBSs in unit 4 were inspected on September 8. All screens passed inspection.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices are backflushed every 3 hours. Debris levels remained light during the week.

Collection Facility: The collection facility is operating at a 100% sample rate.

Transport Summary: Every-other-day midi tank truck transport is occurring with trucks departing on odd numbered days this month.

River Conditions

Summer spill operations ended at 0001 hours on September 1. River conditions during the week are outlined in Table 1 below.

Table 1: River conditions at Lower Granite Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (F^o)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
26.1	23.6	0.0	0.0	65.5	65.0	4.6	4.2

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on August 25. There were no live lamprey or lamprey mortalities recovered. No other fish species were recovered. The combined unit run time was 666.5 hours.

Invasive Species: No zebra/quagga mussels were observed at the monitoring station on August 2.

Avian Activity: Daily picivorous bird counts are taken from the juvenile fish separator platform one hour after sunrise and one hour before sunset. Maximum picivorous bird counts are summarized in Table 2 below.

Table 2. Daily maximum tailrace picivorous bird counts at Lower Granite Dam.

Date	Time (hours)	Gulls	Cormorants	Terns
September 5	1820	0	5	0
September 6	0715	1	20	0
September 7	0715	1	19	0
September 8	0715	2	26	0
September 9	0700	1	17	0
September 10	1845	3	18	0
September 11	0710	1	22	0

Adult Fish Trap Operations: The adult fish trap facility was in 24 hours operation at a 10% sample rate. Collection of fall adult Chinook for truck transportation to Lyons Ferry Hatchery and for the Nez Perce Hatchery at Cherry Lane continued. Nez Perce personnel are transporting on Sundays and Mondays and Lyons Ferry Hatchery personnel are transporting fish Tuesdays through Saturdays.

Research

Research: On site juvenile fish research has concluded for the year.