U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#27-2014

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: August 29 – September 4, 2014

Turbine Operation

McNary had 9 to 11 units available for power generation this week. The hard constraint one percent criterion continues with no units having run outside the criteria. Also, the summer unit priority sequence, known as the "saw tooth" pattern with units being alternately on or off, continues. 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.
12, 13 & 14	Sep 2	1.1 hours.	ESBS camera inspections.
6	Sep 3 to 6	About three days.	Outage for hub tap and for work related to unit 5.

Adult Fish Passage Facilities

On August 29, 31 and September 2, 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 counting along with exit temperature monitoring continue.

On September 17, the project will raise the lamprey passage researcher's camera frame at SFEW2 for inspection.

Winter maintenance planning continues.

Fish Ladder Exits: The project continues to clean the picketed leads as required and on the weekends. During measured inspections, all Fish Passage Plan criteria were at on both ladder

exits except on August 29, when the Washington head over weir measured 0.9 feet. The exit had a brief power outage earlier in the day. On August 30, the operators reset the PLC (Programmable Logic Circuit). Later in the week, the technical staff worked on the panel view and changed the filters in both exits control panels. Also, at Washington exit, multiple exit weir alarms occurred, which the operator reset. Weir 339 had the most alarms. The improvements done this week appear to have decreased the number of alarms. The amount of milfoil in the area is fairly light.

On August 31, at the Oregon exit, the operator adjusted the set points. On September 2, the PLC had an error message, which was reset. Debris loads in the area of the exit continue to fluctuate depending on wind direction as what debris remains is along the Oregon shore. Also, the operators reset two false traveling screen differential alarms. The screen differential remains low. However, the trash rack differential decreased from 1.7 to 1.3 feet. We will continue to monitor both differentials regularly. On September 4, mechanics completed repairing the count station back board drive mechanism.

On September 2, the incinerator toilet at the Oregon count station failed. The fisheries staff will order parts and repair the station as soon as possible. Until then, the counters will have to use a portable toilet, which is already in place near the roadway.

Fishway Entrances and Collection Channel: At the Washington ladder entrance, all inspection points were in criteria. In the near future, the project 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, SFEW2 continued to have very slight calibration drifts. Electrical upgrades of the Oregon entrances will be completed in the near future.

Surface collection channel velocities averaged 1.3 feet per second. Again, lower tailwater elevations are probably affecting our readings.

Auxiliary Water Supply System: For the report week, the PUD at the Washington ladder had no interruptions in service.

Fish pumps 1 and 3 operated satisfactory 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 supplying the usual 450 cfs to the north powerhouse pool with no interruptions in service to report.

Juvenile Fish Passage Facility

The bypass season continues with alternating days of secondary and primary bypass with the switch occurring every morning at 0700 hours. There were no deviations from this schedule.

Secondary bypass occurred on August 30, September 1 and 3. We bypassed 2,540 smolts, 198 juvenile lamprey and 72,654 juvenile shad this week.

For the week, sample tank mortality rates ranged from 0.0 to 1.0 percent. With sample tank water temperature around 70 degrees F, GBT sampling remained halted until spill closure, which will be discussed below. The sample rate will remain set to collect 100 fish per day.

Winter maintenance planning continues.

Forebay Debris/Gatewell Debris/Oil: Floating forebay debris, which consisted of milfoil and 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. After the conclusion of spill season, the very light amount of woody debris at the spillway moved to the powerhouse.

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 installed at 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 2, we performed camera inspections at units 12 to 14 with no problems found. We observed no lamprey or ESA listed fish mortalities in the gatewell slots during the inspections.

VBS differential monitoring revealed no screens out of criteria. On August 31, project personnel cleaned two screens as a preventative measure. No lamprey or ESA listed fish mortalities were noted. VBS rehabilitations continued 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 at the slots the work was being done and opened spare orifices at adjacent slots.

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

On the night of August 31, during the spill closure, we monitored the collection channel. No debris issues were noted.

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 lines. The PSMFC staff continues to perform weekly examinations of the PIT system. The secondary PIT/bypass gates remain off and open for bypass.

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. Water temperature monitoring concluded on September 1. However, we will continue to monitor the sample tanks.

The summer spill program, which calls for 50 percent of flow to be spilled, concluded at 0001 hours on September 1. The project maintained the 50 percent level until then.

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
150.8	95.0	75.9	0.0	71.3	68.4	6.0	6.0

*Control Room Data.

Other

Inline Cooling Water Strainers: Cooling water strainers were examined on September 2. Four subyearling Chinook smolt mortalities were recovered from the strainers. Two of the smolts were unclipped. They came from units 1, 3 and 13. No other ESA listed species or lamprey were noted.

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

Avian Activity: USDA hazing activities concluded on August 2. We continue to examine, monitor temperature and add oil to the outfall water cannon supply pump. We also continue to check and clean the pump intake. Repairs to the pump 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. All hazing techniques appear to be working well in the tailwater area with gulls and cormorants concentrated at the spill until its closure. After conclusion of the spill season, the gulls moved to the powerhouse to feed, where we occasionally see pelicans and cormorants. It is difficult to determine where the cormorants are feeding after the closure. Many of the cormorants and gulls counted in the spill basin are roosting on the navigation lock wing wall along with pelicans working the Washington shoreline. Terns have not been seen and pelican numbers appear down since the end of spill.

We observed gulls and cormorants with an occasional pelican at the bypass outfall. Bird numbers appear now to be affected by the juvenile shad out migration.

In the forebay area, we observed an occasional gull, grebe, osprey, kingfisher or cormorant. Also, at times, the gulls feeding in the tailwater roosted in a large flock in the forebay near the Oregon ladder. Grebes were seen nowhere else on project. We also observed gulls and cormorants on the rock by the Washington boat dock.

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

Table 3. Daily Avian Counts at McNary Dam.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
Aug 29	Forebay	0	1	0	0	0
	Spill	85	0	0	1	0
	Powerhouse	22	0	0	0	0
	Outfall	1	6	0	0	0
Aug 30	Forebay	5	0	0	0	0
	Spill	110	0	0	2	0
	Powerhouse	12	0	0	2	0
	Outfall	10	5	0	3	0
Aug 31	Forebay	0	0	0	0	2
	Spill	216	5	4	3	0
	Powerhouse	10	0	0	0	0
	Outfall	0	0	0	0	0
Sep 1	At 0100, the spill season concluded.					
Sep 1	Forebay	1	0	0	0	0
	Spill	41	15	0	1	0
	Powerhouse	34	2	0	3	0
	Outfall	0	0	0	0	0
Sep 2	Forebay	0	0	0	0	0
	Spill	34	16	0	4	0
	Powerhouse	28	0	0	1	0
	Outfall	0	2	0	0	0
Sep 3	Forebay	0	0	0	0	0
	Spill	22	55	0	3	0
	Powerhouse	2	0	0	0	0
	Outfall	2	0	0	0	0
Sep 4	Forebay	0	0	0	0	0
	Spill	141	30	0	0	0
	Powerhouse	35	0	0	0	0

Research: The researchers for the juvenile salmonid survival study completed equipment removal on September 3. GBT monitoring did not resume and concluded when the spill season ended. The adult lamprey passage study and preparations for the adult salmonid fallback study continued.

Project: Ice Harbor
Biologists: Ken Fone
Dates: August 29 – September 4, 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 taken out of service on August 4 at 0830 hours for annual maintenance. Unit 6 was removed from service on September 3 from 0825 hours to 1700 hours, and on September 4 from 0700 hours to 1500 hours, to accommodate RSW inspection dives.

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 2, 3, and 4.

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 down 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 the 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. STSs in units 1, 2, 4, 5, and 6 and unit 5 VBSs were inspected on August 18 and 20. No significant problems were found.

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 its 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
26.1	11.7	16.0	0	70	70	7.6	6.2

*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.

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 have been seen around the project.

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

Project: Lower Monumental
Biologists: Bill Spurgeon and Ray Addis
Dates: August 29 – September 4, 2014

Turbine Operation

All available units are being operated in hard constraint of the 1% operation criteria. Unit 6 was down for overhaul.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and PSMFC/State biologists on August 29, 30, 31 and September 3.

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 5.7', 5.2', 5.3', and 7.7 feet. South powerhouse channel/tailwater head was in criteria (1'-2') on all inspections.

SSE1 weir gate was in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, the gate depth readings were 5.9', 5.8', 5.5' and 8.6 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 was 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 2.5 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: STS are operating in cycle run mode. STSs were inspected on August 5 and 6. All screens passed inspection.

Orifices, Collection Channel, Dewatering Structure, Flume: The collection channel is operating with 20 orifices open.

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

Transport Summary: Alternate day trucking is occurring.

River Conditions

Summer spill began at 0001 hours on June 21 with the initiation of the bulk spill pattern. The dam used navigation friendly spill patterns during lockages, due to low flows. Summer spill ended at 0000 hours on September 1. River conditions during the week are outlined in Table 1.

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
24.6	18.9	12.3	0.0	69.5	68.8	5.0+	5.0+

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on August 4. No live fish were recovered. Mortalities included 1 juvenile bullhead.

Invasive Species: No zebra mussels were observed at the monitoring stations on August 1.

Avian Activity: Daily tailrace counts of feeding piscivorous birds are summarized in Table 2. 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
August 29	1100	7	0	0
August 30	1200	27	0	0
August 31	1115	13	0	2
September 1	1115	0	0	0
September 2	1100	0	0	0
September 3	1130	0	0	0
September 4	1100	0	0	0

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

Project: Little Goose
Biologist: Richard Weis
Dates: August 29 – September 4, 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 six 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 August 28, September 2 and 4.

Fish Ladder: Ladder exit differentials ranged between 0 and 0.1 ft. (criteria $\leq$ 0.5 ft.). Water depths over the weirs held steady at 1.2 feet (criteria 1.0-1.3 ft.). No differential was 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 1.1 and 2.0 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 7.9 (sill) and 8.4 feet (criteria $\geq$ 8.0 ft). NPE weirs rested on sill and ranged between 5.6 and 7.3 feet (criteria $\geq$7.0 ft). NSE weirs are in manual and depths ranged between 4.7 and 7.7 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocity near the junction pool area was measured at 1.7 fps. Surface water velocity ranged between 2.0 to 2.2 fps near the north shore entrance (criteria 1.5 to 4.0 fps). North powerhouse surface water velocity measured between 1.7 and 2.4 fps.

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

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Estimated amounts of woody debris in the immediate forebay ranged between 0 and 15 sq ft. Trace amounts of oil were reported in gatewell 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 except the screen in slot 2B. The brush in 2B was found with tripped breakers on September 4 at 1545 hours. The limit switches were reset and the brushes were switched on at 1630 hours. All ESBSs passed the monthly brush test on August 19.

Orifices, Collection Channel, Dewatering Structure, and Flume: The juvenile system operated with 22 open orifices.

Transportation Facility: The collection and transportation facility operated within criteria this report period. Daily fish collection ranged between 72 and 228 and totaled 997 for the week. The descaling and mortality rates were 0.5% and 2.4% respectively. This weekly report period saw 15 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
24.9	22.1	7.3	0	69.7	68.7	6.0+	6.0

*Ladder temperature.

Other

Invasive Species: No zebra mussels were observed on the substrate monitor on August 14. The next inspection is scheduled for September 13.

Cooling Water Strainers: Cooling water strainers were checked on August 22. No fish were found.

Avian Activity: USDA-APHIS bird hazing ended on June 20.

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
August 29	1535	10	18	0	0
August 30	1300	11	4	0	0
August 31	1410	12	11	0	0
September 1	0800	16	4	0	0
September 2	1600	12	3	0	0
September 3	1450	13	3	0	0
September 4	1430	14	8	0	0

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

Research: The University of Idaho continues their adult Salmon and adult lamprey passage study.

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: August 29 – September 4, 2014

Turbine Operation

Turbine units are being operated in hard constraint of the 1% operation criteria. Unit 4 was taken out of service at 0716 hours on August 4 for annual maintenance. The expected return to service date for unit 4 is September 8. Units were rotated out of service on August 29 and 30 for ESBS and VBS inspections. Unit 3 was out of service from 1214 hours on August 29 to 0839 hours on September 2 due to an exciter problem. 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 by Corps Biologists on August 30, 31 and September 2. Operation of Auxiliary Pump 1 and Rental Ladder Pumps A, B, and C to cool adult fish ladder water temperature was initiated on August 1. Pump 1 and Rental Pumps A, B, and C remained in 24 hour operation this week. Scheduled maintenance on the generator for Rental Pumps occurred from 1422-1500 hours on September 4. 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 and NSE2 weir gates were out of criteria (criteria ≥7' or on sill) on all inspections. NSE1 depth readings were 4.7', 4.4', and 5.1 feet. NSE2 depth readings were 3.8', 3.5', and 4.7 feet. North shore channel/tailwater head was out of criteria (criteria 1'-2') on all inspections. The head differential readings were 0.9', 0.9', and 0.6 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 gate requires a complete rehab 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 in sill criteria (criteria ≥8' or on sill) on all inspections. While on sill the gate depth readings were 5.8', 5.5', and 6.6 feet. North powerhouse channel/tailwater head was in criteria (criteria 1'-2') on all inspections with the exception of a 0.7 feet reading on September 2.

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 1.1, 1.1, and 1.0 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 AWS were available for service. Pumps 1 and 3 were operated and fish pump 2 was on standby.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: The amount of forebay debris varied during the week due to wind strength and direction. No debris spills took place during the week. The JFF staff have been monitoring and removing gatewells debris daily.

ESBSs/VBSs: ESBSs are deployed in all units. The brush cleaning cycle is set for once every two hours. ESBSs/VBSs in units 1, 2, 3, 5, and 6 were inspected on August 29 and 30. All screens passed inspection. Screens in Unit 4 will be inspected while the unit is out of service for annual maintenance.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices are backflushed every three 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 truck transport is occurring with trucks departing on odd numbered days in August and even numbered days in September.

River Conditions

Summer spill operations ended at 0001 hours on September 1. The annual PM on spill gates 1-8 local and remote controls for GDACS (Generic Data Acquisition and Control System) testing and calibration occurred from 1500 - 1530 hours on September 3. River conditions during the week are outlined in Table 1.

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
25.2	22.8	11.0	0.0	66.3	64.9	4.7	3.8

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit 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. Maximum picivorous bird counts are summarized in Table 2.

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

Date	Time (hours)	Gulls	Cormorants	Terns
August 29	0700	1	0	0
August 30	1845	0	1	0
August 31	1845	1	1	0
September 1	0700	3	0	0
September 2	0700	1	0	0
September 3	1845	3	1	0
September 4	1845	0	25	0

Adult Fish Trap Operations: The adult fish trap facility was not operated on August 29 due to the ladder exceeding acceptable water temperatures. The trap was operated at 100% sample rates from 0700 - 1007 hours on August 30 and from 0700 - 1100 hours on August 31. The trap returned to 24 hours operation at a 10% sample rate at 1200 hours on August 31. As a precautionary measure the adult trap was taken out of service from 1300 - 1630 hours on September 4 during scheduled maintenance of the rental pump generator. Collection of fall adult Chinook for truck transportation to Lyons Ferry Hatchery began on August 30 and collection for the Nez Perce Hatchery at Cherry Lane began on August 31. Nez Perce tribal personnel are scheduled to transport fish on Sundays and Mondays, and Lyons Ferry Hatchery staff are scheduled to transport fish Tuesday through Saturday.

Research: Onsite juvenile fish research has concluded for the year.