U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#05-2014

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: March 28 – April 3, 2014

Turbine Operation

McNary had 11 units available for power generation this week. On April 4, the remaining outages for trash rack cleaning at units 7, 9 and 10 occurred. The hard constraint one percent criteria began April 1. No units ran outside the constraint. Unit outages are recorded in Table 1.

Table 1. Turbine Unit Outages at McNary Dam.

Units	Outage Dates	Outage Length	Reason
3	Jun 4, 2013 – Apr 10, 2014	About 10 months.	After rewind, thrust bearing.
11	Sep 18 – Unknown	Unknown.	Turbine bearing issue continues.
4	Mar 27 – Unknown	Unknown.	Turbine bearing issue.
9, 13 & 14	Apr 1	8.3 hours total.	Trash rack cleaning.
12 & 13	Apr 2	4.8 hours total.	Trash rack cleaning.

Adult Fish Passage Facilities

On March 28, 30 and April 2, the McNary fisheries biologist performed measured inspections of the adult fishways. On March 31, the project lowered the picketed leads at both exits. On April 1, visual adult fish counts resumed.

Fish Ladder Exits: During measured inspections, both ladder exits met all Fish Passage Plan criteria. Debris loads at the exits decreased this week, resulting in frequent less cleaning. At the Washington exit, weir 339 triggered an alarm once on April 2. The operator reset the alarm without incident. At the Oregon exit, traveling screen differentials were satisfactorily. One differential alarm did occur at this exit this week, which the operator reset without incident.

Fishway Entrances and Collection Channel: At the Washington ladder entrances, all inspection points were in criteria. In the near future, project personnel will replace the LEDs for W2 and W3 with a PLC (Programmable Logic Circuit), which will integrate into the new control system better.

At the Oregon ladder, north powerhouse entrances, NFEW2 and NFEW3 measured depths of 7.7 to 7.8 feet all week even with the return of the juvenile system on March 28. Facility staff will look into other possible causes and options. On March 28 and April 2, SFEW1 measured depths

of 7.1 and 7.4 feet, respectively. Also, on those days, SFEW2 measured depths of 7.8 and 7.4 feet, respectively. The weirs had drifted out of calibration and the technical staff recalibrated them on March 31. Weir calibration issues remain under investigation. All other Oregon entrance inspection points were in criteria. Collection channel surface velocities averaged 1.7 feet per second.

Auxiliary Water Supply System: For the report week, the PUD turbine unit had no interruptions in service. On April 3, the potable water well pumps tripped off line without any alarms being activated. As a result, the potable water reservoir went dry without warning. From 1920 to 2024 hours, fish pump 3 was off line due to the lack of potable cooling water. Fish pump 1 remained on line with raw river water. The operator manually restarted the well pumps which refilled the reservoir and allowed normal operation of fish pumps 1 and 3 with potable cooling water. The next day, project personnel resolved the issues with the potable water system. Otherwise, both pumps ran satisfactorily this week 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. On March 28, the juvenile facility returned to service and began supplying the usual 450 cfs to the north powerhouse pool without any interruptions in service.

Juvenile Fish Passage Facility

On March 28, from 0800 to 1200 hours, the fisheries staff "watered up" the system, checked for any issues and primary bypass began. The system will remain in primary bypass until 0700 hours on April 6, when the first day of secondary bypass will occur. With fish transport no longer occurring at McNary Dam, our season will involve alternating days of primary and secondary bypass.

Forebay Debris/Gatewell Debris/Oil: This week, floating forebay debris concentrations were moderate to heavy, mostly in front of the powerhouse. Project operations, trash rack cleaning and weather patterns have moved the debris somewhat. The debris consists mostly of woody material and tumbleweeds. The amount of incoming debris has decreased.

Trash rack differentials continued to be monitored, with the highest reading occurring on March 30 and measuring 4.4 feet at slot 13A at 80 megawatts. On April 1, 2 and 4 at units 7, and 9 to 14, the project removed 52 ten-yard truck loads of debris. Facility staff observed only three juvenile lampreys lost in the debris. All 3 mortalities were recovered in front of slot 9A. The initial trash rack cleaning operations for the 2014 season is now completed. No problems were observed in the gatewell slots themselves this week.

ESBSs/VBSs: All ESBSs remain raised with maintenance completed. Screen installations will begin on April 7 and will be completed by April 15. This week, we received our new camera monitor for ESBS inspections from the vendor. It arrived damaged and the vendor will replace it in the near future. VBS differential monitoring will resume when ESBS installations begin.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: On March 28, from 0800 to 1200 hours, orifices were opened; systems were tested and switched to automatic mode, which allowed primary bypass to begin. Forty two orifices were open all week. Unit 4 orifices remain

closed due to potential oil residue in the associated gatewell slots. Makeup orifices were opened at unit 3.

With the removal of the trap funnels; orifices 4A south, 5A south and 6B south will now be available for use. During the week, several orifice operators received maintenance and a few attraction lights were re-lamped. From March 28 to 31, 6B north was utilized in support of attraction light installation and actuator repairs at orifice 6B south. Trash rack cleaning did improve orifice flows. During raking operations, orifices in the affected slots were closed, and make-up orifices were opened in adjacent slots to maintain collection channel elevations.

All systems functioned well except as follows: The side dewaterer screen cleaning device electrical cord tray liner appears to be warped. Even so, it appears to be functioning normally. The transition screen cleaning device was left off over the weekend as it has a history of failure. On March 31, the mechanism functioned well once in the morning and was turned off. The following day at 1030 hours, the device triggered an alarm and failed just as it was completing a cycle. This was the second time the cleaner was operated this season. As with the past few seasons, this mechanism will remain out of service until the collection channel is unwatered.

After initial testing on March 28, at 1300 hours, the rectangular screen cleaner triggered an alarm and failed. The cleaner would not travel downstream. The assistant biologist traced the failure to a faulty limit switch. Electricians were not initially available since March 28 was a non-work day. The fisheries staff operated the mechanism manually (what we call by hand) every two hours. On April 1, at approximately 1400 hours, the electrical staff cleaned and adjusted the limit switch, and returned the brush to automatic operation.

Sampling Facility: After final preparations, on March 28, the facility was re-watered with no significant problems observed. The facility will remain in primary bypass until April 6, when alternating bypass methods will begin. Until then, facility systems will remain off. This week, we replaced the "A" side PIT gate's air lines, a contractor sealed the wet lab floor and we reset the separator observation building's outside phone ringer.

River Conditions

River conditions during the week are outlined in Table 2. Control room data, which runs from 0000 to 2400 hours each day, was utilized. Water temperature is taken from the unit 1 scroll case. Involuntary spill occurred all week. At times, the spill pattern was altered in support of navigation. On April 1, the project restored the gate at bay 22 to full configuration. Project personnel plan to install the second TSW in bay 19 prior to April 10 (when the spring spill program begins). TSW2 installed at bay 20 will remain in place for the spring spill program.

Table 2. River conditions at McNary 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
243.8	217.7	87.8	52.0	44	43	4.3	3.0

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected for lamprey on April 1. A total of 95 lamprey were recovered of which 2 were found live. No other species were found. Units 3, 4 and 11 are out of service. At unit 8, the mechanics were not able to examine the strainer. The next cooling water strainer inspections are scheduled for early May.

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

Avian Activity: Bird counts resumed on April 1 with each zone being counted by the fisheries staff once a day, usually in the morning. Counts results are included in Table 3 below.

Table 3. Daily Avian Counts at McNary Dam.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
Apr 1	Forebay	0	0	0	0	0
	Spill	0	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Apr 2	Forebay	0	0	0	0	0
	Spill	0	3	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Apr 3	Forebay	0	0	0	0	0
	Spill	0	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0

This week, we observed an occasional gull, grebe, pelican, osprey or cormorant near the project while conducting other inspections. On March 28, the bypass system became functional. On March 30, the first USDA hazing shift began. Hazing is scheduled to occur up to August 2. This week, the fisheries staff completed deployment of the bird distress calls.

This year, we have new observation protocols and record forms along with a new spreadsheet. Also, lethal take of gulls and cormorants by USDA will be allowed as needed.

On April 1, at 1100, the fisheries staff found an oil leak in the water sprinkler's pump. We removed the sprinkler system from service and notified the district contracting office. On April 7, the contractor will return to the project and begin repairs to the pump.

Research: On March 28, project personnel removed the upper section of the adult release line from slot 12A and took it to storage. GBT (Gas Bubble Trauma) monitoring will begin next week. Preparations continued for the juvenile survival study.

Project: Ice Harbor
Biologist: Mark Plummer
Dates: March 28 – April 3, 2014

Turbine Operation

Turbine units 1 – 6 were available for service. Turbine unit 6 was out of service from March 28 at 1810 hours to March 29 at 1040 hours.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on March 31, April 1, and April 2.

Fish Ladders: The north fish ladder inspection areas (picketed leads, head differentials, fishway exits, and depth over weirs) were in criteria on all inspections. The south fish ladder inspection areas (picketed leads, head differentials, fishway exits, and depth over weirs) were in criteria on inspections. Both the north and the south shore picketed leads are deployed in their down positions.

Fishway Entrances and Collection Channel (inspection date order): The south shore entrance (SFE) and channel/tailwater differential were in criteria on all inspections. The north powerhouse entrance (NFE) and channel/tailwater differential were also in criteria on all inspections. The north shore entrance (NSE) and channel/tailwater differential were in criteria during all inspections. Fishway entrance criterion is 8 feet depth, greater than 8 feet depth, 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 without any problems. Six of 8 south fish pumps are in service. All south fish pumps are available for operation.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Fish ladder exits are clear of debris and the bubblers are operating satisfactorily.

STSs/VBSs: STSs are now deployed for juvenile fish guidance and are in cycle-run mode.

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

Juvenile Bypass Facility: The bypass is in operation.

Fish Sampling: The first sample took place April 2. Sampling results are outlined in Table 1 below. Sampling days will alternate weekly on Mondays and Wednesdays, and Tuesdays and Thursdays.

Table 1. April 2, 2014 Sampling Results at Ice Harbor Dam.:

Species	Sampled	#Descaled	Morts	Avian Marks
C-CH	5	0	0	0
UC-CH	49	2	0	2
C-CH-O	---	---	---	---
UC-CH-O	---	---	---	---
C-SH	8	0	0	0
UC-SH	27	---	---	---
C-COHO	---	---	---	---
UC-COHO	---	---	---	---
C-SOCK	---	---	---	---
UC-SOCK	9	---	---	---
TOTAL	98	2	0	2

Removable Spillway Weir: The RSW is in operating position. Spill for fish began April 3.

River Conditions

River conditions during the week are outlined in Table 2.

Table 2. 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
94.4	67.5	50.8	0.0	45	46	4.5	2.8

*Unit 1 scrollcase temperature.

Other

Inline Cooling Water Strainers: Cooling water strainer inspections took place on March 24 and 25. A total of 379 lamprey were recovered, of which 2 were found live and the rest were mortalities. Unit 6 was out of service and not inspected. Combined unit run times totaled 2,944.5 hours.

Invasive Species: No new exotic species have been found.

Avian Activity: Bird hazing began April 1. The water cannon is functioning satisfactorily.

Table 3. Daily Average Predacious Bird Counts, Ice Harbor Dam, April 1 – 3, 2014.

Date	Gulls	Cormorants	Caspian Terns	Pelicans
4/01	0	6	0	0
4/02	0	1	0	0
4/03	0	6	0	0

Research: No research is in progress at this time.

Project: Lower Monumental
Biologists: Bill Spurgeon and Elizabeth Holdren
Dates: March 28 – April 3, 2014

Turbine Operation

The units are being operated in hard constraint of the 1% operation criteria. Units were operated outside the 1% criteria per BPA request during the soft constraint period of this report (March 28 through March 31). No 1% violations occurred outside the period requested by BPA. Unit 6 was out of service on April 1 from 0845-1354 hours for brake assembly repair. Unit 5 was removed from service at 1300 hours on October 29 for 6 Year Overhaul/Thrust Bearing Replacement with an estimated return to service date of April 11, 2014.

Adult Fish Passage Facility

The adult fishways were inspected by Corps and PSMFC/State biologists on March 29, 30, 31, and April 2.

Fish Ladders: Fishway exit head differentials and depths over the weirs were in criteria (≤ 0.5' and 1.0'-1.3', respectively) on all inspections. Debris was removed from North Shore ladder exit trash racks on April 3. 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 depth (criteria: ≥ 8' or on sill) on all inspections. South powerhouse channel/tailwater head was in criteria (1'-2') on all inspections with the exception of a 0.9 feet reading on April 2.

SSE1 weir gate was in depth criteria (criteria: ≥ 8' or on sill) on all inspections. SSE2 was in criteria (6' above sill) on all inspections. South shore channel/tailwater head was in criteria (1'-2') on all inspections with the exception of readings of 0.7' and 0.9 feet on March 29 and 31, respectively.

All 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 were placed on sill.

A replacement for the PLC for automated control of the fishway has been ordered. Upon arrival it will require programming prior to returning to service. The automated system is estimated to return to service in May. 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: AWS pump 2 was removed from service on March 20 at 1715 hours with suspected woody debris plugging the wicket gates. The problem was found to be a sturgeon, approximately 7-8 feet in length. Pumps 1 and 3 were taken out of service from 1535-1609 hours on April 1 to facilitate sturgeon removal from pump 2. All pumps were returned to service at 1609 hours on April 1.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was an average of 764.3 square yards of forebay debris observed during this period. Gatewell drawdown baselines were measured on March 30 with the exception of unit 5. Gatewell debris ranged from 0-35% surface coverage. Gatewell debris was removed on April 3. No oil was observed in the gatewells.

STSs/VBSs: STSs are operating in cycle-run mode.

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

Collection Facility: Collection for condition sampling began on April 1. Subsequent collection for condition monitoring will occur every third day.

Transport Summary: Fish transport is not occurring at this time.

River Conditions

Spring spill operations in support of fish passage were initiated at 0001 hours on April 3. 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
92.4	65.3	28.0	0.0	45.0	44.0	3.5	3.4

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on March 3. Twelve live lamprey were recovered. Mortalities included approximately 166 juvenile lamprey, 6 peamouth, and 40 Siberian prawns.

Invasive Species: No zebra mussels were observed at the monitoring stations on March 2.

Avian Activity: Gulls and cormorants were the dominant piscivorous bird species observed during fish ladder inspections this week. Daily tailrace counts of feeding piscivorous birds are summarized in Table 2.

Table 2. LMO Tailrace Counts of Foraging Piscivorous Birds.

Date	Time	Gulls	Cormorants	Tern
3/28/14	1105	1	0	0
3/29/14	1100	0	0	0
3/30/14	1100	1	0	0
4/1/14	1100	0	0	0
4/1/14	1105	0	0	0
3/31/14	1100	0	0	0
4/2/14	1100	0	0	0
4/3/14	1105	1	0	0

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

Project: Little Goose
Biologists: George Melanson and Richard Weis
Dates: March 28 – April 3, 2014

Turbine Operation

Turbine units 1 through 6 were available for service this report period except for short term planned outages in support of dive operations for trash shear boom removals and in support of VBS video inspections. Beginning April 1, turbine units were operated within 1% of the peak efficiency range.

Adult Fish Passage Facility

Adult fishway inspections were performed on March 29, March 31, April 3 and April 4.

Fish Ladder: The ladder exit head differential measured 0.1 feet (criteria $\leq$ 0.5 ft.) on all four inspections. Water depths over the weirs measured between 1.1 and 1.2 feet (criteria 1.0-1.3 ft.) and no differential was observed at the picketed leads (criteria $\leq$ 0.3 ft.). No debris was observed at the picketed leads or in the ladder exit area. 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 1.0 and 1.8 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.4 and 8.6 feet (criteria $\geq$ 8.0 ft). NPE weir depths ranged between 5.5 (sill) and 7.3 feet (criteria $\geq$7.0 ft. or on sill). NSE weirs were manually operated and depths ranged between 4.8 and 6.5 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocities ranged between 1.5 and 1.7 fps near the junction pool and between 2.2 and 2.5 fps near the north shore entrance (criteria 1.5 to 4.0 fps).

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

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Woody debris in the immediate forebay ranged between 300 and 400 sq ft.

Spillway Weir: The spillway weir was placed back in service on April 3 at 0700 hours in the high crest position.

ESBS/VBS: Drawdown measurements across trash racks and ESBS were performed on April 1 on all units. Video inspections of VBS in slots 6A – 6C were performed on April 1 and in slots 1A - 5C on April 2. A small tear (12" X2") was found in slot 1A. All ESBSs operated as designed. On April 2, all ESBS brushes were manually operated and tested and no faults found.

Orifices, Collection Channel, Dewatering Structure, and Flume: Nineteen orifices are open.

Transportation Facility: The Juvenile Bypass System was switched from primary bypass to secondary bypass on April 1 for a 24 hour sample. The total collection was 1,404.

Transport Summary: Fish transport is scheduled to begin in late April.

River Conditions

River conditions during the week are outlined in Table 1.

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
87.4	64.61	19.3	0.1	46.4	44.7	4.0	3.0

*Ladder temperature.

Other

Inline Cooling Water Strainers Cooling water strainers were not checked during this report period.

Invasive Species: The zebra mussel substrate monitor is scheduled for inspection on April 5.

Avian Activity: Bird counting started on April 1. Count results for April 1 – 3 are outlined in Table 2 below. USDA-APHIS bird hazing will resume on April 7.

Table 2. Maximum Daily Bird Counts, April 1- 3, 2014 at Little Goose Dam.

Date	Gulls	Cormorants	Caspian Terns	Pelicans
4/1	4	7	0	0
4/2	11	4	0	0
4/3	7	19	0	0

Research: University of Idaho has resumed adult salmon and steelhead monitoring.

Project: Lower Granite
Biologists: Mike Halter and Ches Brooks
Dates: March 28 – April 3, 2014

Turbine Operation

Lower Granite had turbine units 1, 2, 3, 4, 5 and 6 available for power generation at the beginning of the report period. Turbine units 2, 3, 4 and 5 were rotated out of service between 0652 and 1615 hours on March 31 to allow for trash rack raking. Turbine units 5 and 6 were out of service between 0601 and 1202 hours on April 1 to allow for the completion of trash rack raking. The turbine units are now being operated within the hard 1% operational constraint criteria.

Adult Fish Passage Facility

On March 29 – 31 and April 1 COE fish biologists conducted inspections of the adult fishway system.

Fish Ladder: All criteria were met.

Fishway Entrances and Collection Channel: Head differential readings remained within criteria at the south shore and north powerhouse fishway entrances during the week. Weir depths at the north shore entrances met criteria on the March 29 and 30 inspections but were below criteria on the March 31 and April 1 inspections with readings of 0.9 and 0.4 feet, respectively (criterion = 1.0 – 2.0 feet). *The low reading on April 1 took place during a debris spill operation.*

Weir depths at the south shore fishway entrances also met criteria on all inspections this week with the exception of the April 1 inspection when weir depths dropped to 7.9 feet (criterion $\geq$ 8.0 feet) during a debris spill operation. Weir depths at the north powerhouse fishway entrances were on sill this week due to tailrace elevations below 636.0 feet (at which depths the gates bottom out). Weir depths at the north powerhouse entrances ranged from 6.7 to 7.9 feet. Weir depths at north shore entrance 1 ranged from 4.9 to 5.1 feet (criterion $\geq$ 7.0 feet). Weir depths at north shore entrance 2 ranged from 4.9 to 5.8 feet (criterion $\geq$ 7.0 feet). North shore entrance #2 remains damaged, can not adjust for weir depths automatically, and has been manually set at a compromise depth of 630.0 feet. Due to a lack of water at the north shore entrances, weir depth readings are being sacrificed in attempt to maintain the requisite 1.0 foot of head differential.

Velocity readings in the adult fishway collection channel transition pool area ranged from 1.07 to 1.26 feet per second and averaged 1.17 feet per second.

Auxiliary Water Supply System: Fish pumps 1 and 2 were run during the week. Fish pump 3 is out of service awaiting a part needed to complete lower guide bearing repairs; the pump is now expected return to service by early to mid April.

Juvenile Fish Passage Facility

Due to an increase in fish numbers, the sample rate was reduced from 10% down to 5% on the morning of March 28. The sample rate was again reduced from 5% down to 2% on the morning of March 30 and remained at that rate for the rest of the report week. All fish other than those being routed to the sample are being diverted back to the river via the long outfall pipe (secondary bypass).

Forebay Debris/Gatewell Debris/Oil: The amount of forebay debris varied during the week due to wind strength and direction. A debris spill took place on the afternoon of April 1 due to a buildup of material in the forebay.

ESBSs/VBSs: ESBSs are deployed in all units and have been operating without any issues. The brush cleaning cycle is set for once every two hours. The first video inspection is scheduled for April 25-26.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices are being backflushed every 3 hours around the clock. In addition, gatewell surfaces are being checked on a daily basis and floating debris is being removed with a hand basket in attempt to circumvent orifice blockages. The 42-inch controller valve on the separator quit working early on the morning of March 24. Powerhouse electricians have traced the problem to a bad transformer and they estimate it will take a week to get another one here. At the present time, separator personnel are manually operating the valve (when needed) with a drill attached to the hand crank on the operator.

Transportation Facility: The juvenile collection gallery was watered up starting at 0800 hours on March 20. The separator was also watered up and fish (other than sample fish) are being diverted back to the river through the long bypass pipe (secondary bypass).

Transport Summary: Nothing to report. General fish barge operations are tentatively scheduled to begin somewhere in the April 21 – May 1 time period. *Plans could very well change due to recent problems with the Little Goose navigation lock.*

Removable Spillway Weir: The RSW resumed operation with normal spring spill activities on April 3.

River Conditions

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
90.2	63.4	20.3	0.0	48.0	47.6	4.5	2.0

*Scrollcase temperature.

Other

Video counts in the adult fish ladder counting room began on March 1. The recording hours are from 0400 to 2000 hours. Daytime visual counts from 0400 to 2000 hours are scheduled to start on April 1.

Inline Cooling Water Strainers: Cooling water strainers were inspected for lamprey on March 26. A total of 473 lamprey mortalities were found in the strainers over a combined run time of 2,840.4 unit hours. The next cooling water strainer inspections are scheduled for late April 2014.

Invasive Species: The zebra mussel substrate near the adult fishway exit was last examined for zebra mussels on March 6. No evidence of zebra mussels was found.

Avian Activity: Formal bird counts and hazing activities began on April 1. Counts for the week are summarized in Table 2 below.

Table 2. Average Predacious Bird Counts at Lower Granite Dam, March 28–April 3, 2014.

Date	Gulls	Cormorants	Caspian Terns	Pelicans
3/28	4	0	0	0
3/29	6	0	0	0
3/30	7	0	0	0
3/31	20	0	0	0
4/01	12	0	0	0
4/02	10	0	0	0
4/03	3.5	0	0	0

Adult Fish Trap Operations: The adult fish trap was watered up and sampling began on March 10. The initial sample rate is 28%. Since, as in 2013, adult trapping will only be conducted Monday thru Friday the 28% sample rate represents an overall weekly sample rate of 20%. Genetic/scale samples will be taken from one out of every 10 hatchery steelhead. All wild steelhead captured will be PIT-tagged and scale and genetic samples taken. Any previously PIT-tagged steelhead (either hatchery or wild) will have both scale and genetic samples taken for verification purposes.

Research

Idaho Fish and Game (IDFG) Genetic Stock Identification: The goal of this study is to develop fine-scale genetic profiles for natural origin salmon and steelhead; develop genetic stock identification (GSI) techniques to estimate stock-specific escapement over LGR, monitor abundance, productivity and distribution of naturally produced adult and juvenile steelhead and salmon; research and monitor stock-specific life history characteristics. At LGR the goal of the study will be to enumerate and characterize the natural production of spring/summer Chinook salmon and steelhead above LGR with regards to age composition and genetic stock profiles. IDFG will sample Monday through Friday until the first part of July with the goal to collect between 2,000-5,000 genetic samples each from yearling spring/summer Chinook and steelhead and 500-3,000 genetic samples from subyearling fall Chinook.

Nez Perce Tribe (NPT)/U. of Idaho (UI)/Columbia River Intertribal Fisheries Commission (CRITFC) – Kelt Study: The goal of this research project is to study the physiology and endocrinology of steelhead kelts to evaluate the feasibility and success of several strategies for rehabilitating and handling steelhead collected at LGR. Also, to understand and identify the suite of physiological changes that occurs in Snake River steelhead during the process of sexual maturity, and to determine changes that occur post spawning that are associated with successful downstream migration and recovery to spawn again. As part of this collaborative study to investigate approaches to increase adult steelhead returns the NPT will select up to 150 fish for transport to the Dworshak Fish Hatchery holding facility.