



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Dworshak Fisheries Complex

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MEMORANDUM

To: Fisheries Supervisor, Columbia Basin Ecoregion
Region 1, Portland, OR

From: Complex Manager
Dworshak Fisheries Complex

Subject: **Monthly Activity Report –September, 2011**

Dworshak

SPRING CHINOOK SALMON (SCS)

Brood Year 2010 (BY10)

At the end of the month there were 1,047,916 BY10 SCS on station averaging 49 fish per pound (fpp) and 103 mm (4.1 inches) total length. Mortality for the month averaged 0.18 percent and water temperature averaged 48.9°F in the raceways (RWs).

Brood Year 2011 (BY11)

Egg development is being accelerated as incubation temperature is approximately 3°F warmer than last year. Our old chiller is operating on one compressor and is unable to achieve the desired temperatures to slow egg development. The replacement chiller installation has been started and will be operational next month to slow egg development and hatch. Target incubation temperature will be 36-37°F. Eggs from Take 1 were enumerated at the end of September with a 95 percent eye-up. Takes 2-4 will be enumerated in early October. Takes 1-3 are being incubated in A/B banks on chilled water averaging 43°F. Eggs from Take 4 (115 females) are in C bank on the secondary water supply averaging 46°F.

On September 30, eggs from Take 1 (33 females) of Kooskia stock were transferred to Clearwater State Fish Hatchery (CWH) for their Clear Creek program. Eggs from 81 females spawned for CWH on August 30 for this same program were still being incubated at Dworshak in D-Bank incubators at the end of the month. These eggs will be transferred to CWH in October.

COHO SALMON (COS)

Brood Year 2010

At the end of the month there were a total of 334,066 COS averaging 54 fpp and 95 mm (3.8 inches) total length on station. These fish are in six RWs in B-bank. Mortality was 0.1 percent and temperature averaged 48.9°F for the month.

SUMMER STEELHEAD (SST)

Brood Year 2011

Steelhead from egg Takes 7-8-8A (938,000 SST) were split and inventoried in System I during the month. There were a total of 89,651 SST from these Takes which received coded wire tags. The fish were tagged by the crew from the Columbia River Fisheries Program Office. At the end of the month there were a total of 2,200,461 SST on station in the BPs averaging 26 fpp and 121 mm (4.8 inches) total length. This total represents inventory numbers from System I. Mortality was 0.3 percent for the month and temperature averaged 51.3°F in System I (reservoir water) and 48.9°F in Systems 2 and 3 (river water). On September 26, river water was blended with reservoir water in System I to assist CWH with their water demands.

SUMMARY

Table 1. Total Production—Fish on Station (09/30/11).

SCS	10	RWs 1-15; 22-30	1,047,916	21,247	49	4.1	103
SCS	11	Incubation Trays	1,637,926	750	Eggs	Eggs	Eggs
COS	10	RWs 16-21	334,066	6,206	53.8	3.8	95
SST	11	System I	898,493	19,640	45.7	4.0	101
SST	11	System II	994,717	45,931	21.7	5.1	129
SST	11	System III	307,251	17,944	17.1	5.5	140
SST	11	SST on feed Tot/Ave	2,200,461	83,515	26.3	4.8	121
Total Fish/Eggs on Station EOM			5,220,369	111,718			

Kooskia

Kooskia Adult Trap Operations Brood Year 2011

The trap was closed on Aug 6, and cleaned in September. The trap was opened for adult Coho collection on September 30.

Kooskia Brood Year 2011

The egg incubation chiller operated without problems the whole month at temperatures between 38 to 41°F. The ELIZA results for takes three and four were lower than takes one and two. Take three had eight culled out of 116 for 6.8%, and two out of 47 in take four for 4.2%. Egg takes two through four will be shocked and enumerated at KNFH in October.

Kooskia Brood Year 2010

Fish on station the end of the month was 628,617 fry with average size of 34.7 fpp at 4.58 inches (116 mm) length. Total feed consumed for the month was 3,386 lbs. Mortalities for the month totaled 405. Fish food was increased this month after slowing the growth in August. Pathology was concerned with the low body fat going into the winter. Dr. Marilyn Blair from Idaho Fish Health Center (IFHC) commented that the fish had more fat this month. In October, we will be feeding at a higher rate to insure the fish will be on the gain going into the winter. Feed sheets and inventory summaries are attached.

Maintenance

Dworschak

- Fabricated pipe fittings and flanges for Mech II pipeline connection; new boot racks for Nursery; rack for new chiller electrical equipment and new screen for settling pond to catch filter media.
- Installed new incubation headers.
- Pacific Power performed annual maintenance on the Cat generators.
- Repaired Komatsu forklift hydraulic lines and Cart maintenance.
- Performed annual PM on the portable welders.
- Installed temporary steel plates to reinforce bridge decking.
- Repaired holes in Fish Health building wall.
- Siemens Dive team performed PM and inspection of rotating screens.
- Finished Mech II flow orifice removal.
- Plumbed in new chilled water header in incubation and new formalin header in Incubation Room; assembled and installed new incubation stacks.
- New chiller arrived and bolted to floor in Mech I.
- New belts installed on nursery air handler #4.
- New bathroom sink fixture installed in quarters #2
- New locksets installed on Mech II front door and Nursery East door.
- Began installing electrical feed to new chiller.

Kooskia

- *Carrier* was in from Spokane and fixed the EVX motor in the #1 *Carrier* unit. The backup York chiller was taken off line on Sept. 13, 2011.
- Clear Creek water to the hatchery was turned off on Sept. 14 as water no longer needed for cooling the York chiller.
- Cleaned adult trap holding pond and started getting trap equipment ready for Coho trapping on Sept. 15.
- Started work on UV cabinets to keep the units at hatchery housing from freezing.
- Met with the site engineer for the Leitch Creek Project and to look at the new Clear Creek Culvert Project on Sept. 19.
- Cleaned the trees and debris off the Obermeyer Weir in Clear Creek and hatchery housing.
- The main settling pond valve in the outflow vault was frozen up. It was pulled, fixed, and reinstalled on Sept. 23.

- Worked on the bypass valve in the screen chamber.
- Reactivated the weir in Clear Creek and adjusted it so there would still be flow in Clear Creek.

Summary of Energy Efficiency Projects Dworshak Hatchery

Projects to reduce energy consumption at the Dworshak Hatchery while improving infrastructure and operational flexibility were identified by Dworshak Hatchery staff and a proposal outlining the subsequent energy reductions and capital cost requirements was submitted to BPA in June, 2011. Although it was already very late in the fiscal year, the fact that the Dworshak Hatchery efforts represented the largest energy savings project for BPA in FY2011 (over 6,900,000 kWh/year of green-hydroelectric produced power that will now be available to the grid with an annual cost avoidance of \$345,000/year), staff from both agencies worked closely together to identify funding sources and quickly procure the equipment and labor necessary to implement these measures. Staff at BPA successfully identified and transferred to the hatchery over \$600,000 for the identified projects. All project identification, scope development, engineering, procurement, and installation of all components with the exception of the new Nursery pipeline was accomplished by a collective effort of the Dworshak Hatchery staff. Knight Construction of Deer Park, Washington was contracted to install the new Nursery pipeline and did an outstanding job, however due to the compressed performance window additional support by the Dworshak maintenance team was needed to complete the project within the window of time allowed per the requirements of the funding program. Energy efficiency projects performed at the Dworshak Hatchery in FY2011 include:

- Incubation and Nursery Expansion and Operational Modifications – Because the hatchery had a limited number of vertical incubator stacks available, influent temperatures to the incubator stacks had to be increased to accelerate the development of the steelhead eggs so that the incubators could be used multiple times during a single season. Not only did this make the logistics of the incubation program more difficult, the need to increase the temperature of the incubation influent water resulted in a huge electrical demand on the hatchery boiler system. An in-house operational program review by Dworshak Hatchery staff identified that a different temperature profile could be used advantageously throughout incubation and the nursery rearing phase from both a fish culture and energy efficiency perspective if the hatchery could procure and install 58 new double-stacks of vertical incubators. The cost of the incubators was approximately \$130,000 plus the plumbing modifications necessary to support the installation. The Dworshak Hatchery staff installed all plumbing components and all of the new incubators. As a result of these planning and installation efforts the electrical demand of the Dworshak Hatchery boiler system will be reduced by over 5,500,000 kWh/year.
- Replacement of Nursery Water Pipeline and Modifications to Original Infrastructure – The original nursery water delivery pipelines were installed almost 4 decades ago. Since this time the flow requirements of the system to meet hatchery production demands have significantly increased while corrosion

of the steel piping has reduced the interior diameter of the piping and further increased the pumping energy requirements of the system. The result of the piping being undersized by design and corrosion was an almost 3-fold increase in the energy necessary to deliver the amount of water needed by the program across the hatchery campus when compared to a properly sized piping distribution system. The heavy pipe corrosion levels also placed the hatchery nursery water supply at risk of failure. A new HDPE pipe was installed to replace the original steel pipes. Modifications to remove components of the original system that added additional pumping power demands were also performed at this time by the hatchery maintenance staff. The anticipated reduction in energy demand for these efforts is approximately 600,000 kWh/year.

- Installation of Variable Frequency Drives on Hatchery Pumps – Several systems at the Dworshak Hatchery provided opportunities to reduce pumping costs through the installation of Variable Frequency Drives (VFD's) to reduce electrical demand when the full output of the pump was not required. The first VFD will be installed next week on a new 200 hp river water pump at the Dworshak Hatchery. While three VFD units have been purchased, it is estimated that this first installation alone will save almost 700,000 kWh/year and have a payback per of approximately 6 months.

Meetings/Training/Travel

Dworshak

- 9/27 Hosted multiagency meeting to discuss Steelhead broodstock management.
- 9/28 Larry Peltz, Complex Manager and Mark Drobish, Hatchery Manager participated in a conference call with the COE to discuss the COE Program Management Plan for Developing a Strategic Investment Strategy and Asset Management Plan for USACE Mitigation Hatcheries.
- 9/29 Larry Peltz, Mark Drobish, Adam Izbicki, Fisheries Biologist and Nate Wiese, Asst. Hatchery Manager participated in conference call with COE to discuss boiler project.

Kooskia

- 9/15 Meeting at DNFH on Federal Climate Changes Survey in the Kooskia NFH watershed.

Miscellaneous

Safety

- 9/7 Heidi Henson, North Central District Health Dpt, gave a presentation to

Staff on “Sun Safety.”

Personnel Actions –

September 30 – emergency hire Bob George completed his tour and the office remodel. Bob designed and constructed 3 offices in the main hatchery building and did a great job!

INFORMATION AND EDUCATION

Tours - 1 People - 8

Register – 190

Visitors from 14 states and 5 countries

Visitor Contacts – 17

Volunteers – 0 Hours – 0

Website Visitors – data not available

Website Contacts – 3

On-site:

- Completed script for “*Hatchery Life*”, DNFH spawning and rearing video.
- Began re-route of hatchery self-guided tour.
- Completed FIS reporting on information/education programs and volunteer program.
- Compiled information for and participated in staff meeting to determine future direction of Dworshak’s visitor services/information & education programs.
- Prepared posters and booth display for Clearwater County Fair, Orofino, ID.
- Updated Complex website content.

Off-site:

- Staffed exhibit at Clearwater County Fair; 958 visitor contacts.

Kooskia

No guests signed our visitor log book this month. A contributing factor is the location of the book. Hatchery Personnel are trying to keep a number count of visitors on the grounds. In September 250 visitors were counted.



Larry Peltz
Complex Manager

cc: Kooskia NFH
Hagerman NFH
CFRU – Moscow
Dworshak Production (2)

LSRCP – Boise