



Dworshak Fisheries Complex

Monthly Activity Report



February 2013

U.S. Fish & Wildlife Service, Region 1

Volume 2, Issue 4

Special points of interest:

- Total Fish/Eggs on station at Dworshak: 10,012,160
- Total Fish/Eggs on station at Kooskia: 1,407,945
- Read Dworshak's Blog, [The Fish Ladder](#).
- There are 386,857 BY12 Coho salmon in incubation at Dworshak.

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Manager's Message....

When I transferred from the Kooskia Hatchery in the early 1990's we did not have a spring Chinook fishery on the Clearwater. In fact, I don't think we thought that was possible at the time or at least not in the very near future. We faced numerous obstacles when trying to improve the production and survival of spring Chinook. Bacterial Kidney Disease seemed out of control and the hatchery rearing environment seemed to exacerbate the problem. We struggled to reduce stress and improve fish health. Now 22 years later we have not only had a spring Chinook fishery on the Clearwater, but we have had some great fisheries. Providing

this spring Chinook tribal and sport fishery harvest opportunity is a perfect example of a hatchery success story, a success realized due to the combined efforts of the U.S. Fish & Wildlife Service, the Idaho Department of Fish & Game, and the Nez Perce Tribe production programs. I began thinking about the events that led to our success with spring Chinook. In my acting role here at the Complex I have plenty of time to think during my weekly travels between the Columbia River Gorge and the Clearwater Basin. Just before my departure last week I had a chance to read about the proposed fishery options for this



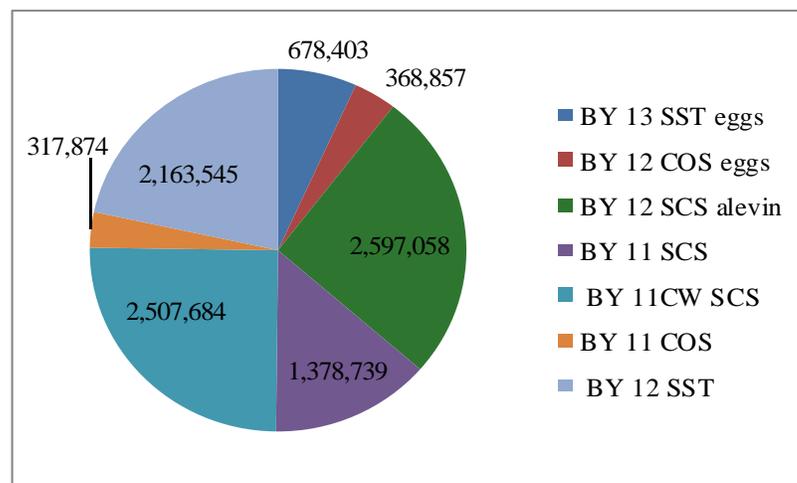
Acting Complex Manager Speros Doulos

upcoming year in the Lewiston Tribune. While this year's return looks to be low, it's also expected to be a low return throughout the Columbia River Basin. That makes me think factors outside of the hatchery had some impact on this return year. Regardless, we have become very good at producing spring Chinook. What changed to make that happen?

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Production Summary: Dworshak National Fish Hatchery

Figure 1. Total Production—Fish on Station (2/28/13).



Chinook sac fry.

Credit: Angela Feldmann/USFWS

SCS=Spring Chinook; CW SCS=Clearwater Hatchery Spring Chinook; SST= Steelhead; COS=Coho





Air-spawning steelhead.

Credit: Angela Feldmann/USFWS

“Over 10 million fish and eggs are currently on station at Dworshak.”



Ira Wilson, NPT, returning a steelhead to the holding ponds.

Credit: Angela Feldmann/USFWS

Hatchery Headlines: Dworshak Spring Chinook Salmon (SCS)

Brood Year 2011 (BY11)

Chinook went back on a normal feeding schedule February 1. At the end of the month there were 1,378,739 BY 11 SCS on station averaging 26 fish per pound (fpp) and 128 mm (5.0 inches) total length. There were 1,016 (0.07%) SCS mortalities in the raceways (RWs) during the month. Fish Health examined raceways 14 and 29 due to increased mortality. Low level chronic BKD and IHNV were found. The reuse line was turned off to raceway 29 and mortality has stayed at low levels, decreasing over the course of the month. We will continue monitoring these raceways. The remaining B bank raceways are on serial reuse and average flow is 851 GPM. Water temperature averaged 41.0 °F in the RWs. The FRO is taking condition data on the high and low density groups in RWs 18-20 and 28-30.

Brood Year 2012 (BY12)

Total alevin was 2,597,058 after February mortalities were removed. There were 724 mortalities removed during the month. All Dworshak SCS alevin are being incubated on chilled water at about 34°F. Development of alevin is on track for ponding in early April.

Hatchery Headlines: Clearwater Hatchery SCS

Brood Year 2011 (BY11)

At the end of February there were 2,507,684 SCS averaging 23 fpp and 127 mm (4.9 inches). There were 708 mortalities in February (0.03%). Water temperature averaged 42°F and flow was 900 gpm.

Hatchery Headlines: Dworshak Summer Steelhead (SST)

Brood Year 2012 (BY12)

At the end of the month there were 2,163,545 BY 12 SST in the BPs averaging 8 fpp and 182 mm (7.1 inches) total length. There were 1235 (0.05%) mortalities this month. Systems I, II, & III are on river water; average water temperature was 42 °F and average flow was 600 gpm. There were no fish health concerns during the month.

Brood Year 2013 (BY13)

Dworshak spawned BY 2013 production steelhead on February 12 (take 3) and 26 (take 4). During the month 235 females were spawned with 101 males which. Females from take 4 were air-spawned. Eggs went into Dworshak production and adult females were either used as experimental fish for the Nez Perce Tribe's kelt program, or were held onsite and later returned to the Clearwater River. Adults from take 4 were anesthetized using aqua-s and there is a three day holding period before the fish can be released. Males from take 4 were also live spawned and held for future spawning. Incubation temperature averaged 40°F for the month. Carcasses from fish anesthetized with carbon dioxide were donated to a local food bank. Thirty-eight carcasses were held for I & E. Spawning of BY13 SST will continue in March.

Takes 1 and 2 were shocked and enumerated in February. A total of 678,403 eyed eggs were enumerated from both takes. Average fecundity was 6,576 and percent survival to eye was 74.5%.

Hatchery Headlines: Dworshak Coho Salmon (COS)

Brood Year 2011 (BY11)

There were 317,874 Coho at the end of the month. Fish averaged 17 fpp and 140 mm (5.5 inches). Total mortality for the month was 638 (0.20%). Fish were diagnosed with cold water disease and were given a 10 day florafenicol medicated feed treatment 2/14-2/24. Fish were transported to Kooskia NFH on 2/26-2/28 for acclimation. The full Coho report can be seen on page 4.

Hatchery Headlines: Nez Perce Tribal Fisheries, Coho

Performance for February 2013, BY 11 Coho

The inventory of Brood year 2011 Coho on February 28th showed 317,874 Clearwater-stock pre-smolts being reared in four Burrows Ponds at Dworshak National Fish Hatchery (DNFH) as shown in Table 1 below. Coho were transported from DNFH to KNFH starting 2/26 – 2/28.

Table 1. Brood year 2011 Coho inventory as of February 25, 2013.

Raceways	Number of fish	Weight (lbs.)	FPP (average)	Length (inch)	Comments
76	84805	4754	17.84	5.43	
78	84947	4846	17.53	5.46	
80	84406	4834	17.46	5.47	CWT 22-00-08
82	63716	4028	15.82	5.65	CWT 22-00-08
Totals	317874	18462	17.22	5.50	

MORTALITY:

The average percent mortality for Clearwater stock Coho during February was 0.20%.

Total monthly mortality was 638 collected by staff

A 60 fish prerelease sample was collected by Idaho Fish Health Lab. 20 each from BP's 78,80, and 82.

GROWTH:

Fish per pound (fpp) decreased from an average of 19.72 fpp to 17.22 fpp.

Length increased from an average of 5.25 inches 5.50 inches.

FEED:

Coho fry were fed Bio-Pro 2.0mm 3 times a week (Monday, Wednesday, and Friday) at 1.2% of their body weight up to February 13, 2013. From February 14-23, Coho were fed Bio MD Aquaflo 2.5mm Medicated feed at 1.0 % for 10 consecutive days to treat Cold Water Disease

A total of 690 pounds of Bio-Pro was fed during the month, and a total of 1,580 pounds of BIO MD. For a total of 2,270 pounds for the month of February. The total cost of feed for the month of February was \$4,805.68.

FISH HEALTH:

Corrie Samson (USFWS) conducted monthly fish health testing on BY11 juveniles (case # 13-057 & 13-089).

PERSONNEL:

Joe Samuels was transferred over to the Kelp Project



NPTF staff pump Coho smolts onto transfer truck.

Credit: Angela Feldmann/USFWS

“Coho smolts were transferred to Kooskia NFH at the end of February.”



Rob Bohn, FWS, and Dave Loranger, FWS volunteer, live spawning a male steelhead.

Credit: A. Feldmann USFWS

REPORTS:

Submitted FY13 CRITCF/PCSRF to NPTEC subcommittee.
 Neil Ring contract for transporting Coho from Eagle Creek NFH, submitted to NPTEC subcommittee.
 Submitted fish transport permits to Oregon, Washington, and Idaho.
 Submitted FY13 Mitchell Act Coho M&E budget approved by NPTEC.
 Sent final edits for Coho Manuscript to Peter Galbreath (CRITFC) for publication.
 Submitted FY14 PCSRF funding application to CRITFC.

MEETINGS/TRAINING:

Mike Bisbee attended weekly supervisor meeting at Dworshak.
 Coho staff attended daily morning meetings.
 Mike Bisbee and Tui Moliga attended the Clearwater AOP.
 Mike Bisbee attended a Project Leaders meeting in Lapwai, ID.
 Coho Staff attended NPT DFRM Annual Meeting in Lewiston, ID.

INCUBATION:

As of March 1st, 386,857 BY12 Coho are being incubated in five stacks at Dworshak (A1-5).
 All BY12 Coho eggs were hand picked by Coho staff.

Hatchery Headlines: Nez Perce Tribal Fisheries, Steelhead Kelt Reconditioning

Table 1. Steelhead kelts on hand at DNFH.

Origin	Males	Females	Mortalities	On-Hand
DNFH (air-spawned)	0	72	0	72
Lower Granite Transfers	0	0	0	0
Totals	0	72	0	72

Fish Culture

Fed kelts, cleaned tanks, and recorded water quality data – Feb 26th-28th
 Air-spawn steelhead - Feb 26th
 Formalin treatments, 3 times - Feb 26th-28th

Maintenance

Repaired water supply line and modified hydrant fitting - Feb 4th-8th
 Power washed kelt tanks and hung anti-jump curtains - Feb 11th-13th
 Install and tested formalin pump - Feb 13th-15th
 Filled tanks and test alarm system - Feb 19th-21st
 Prepared transport tanks - Feb 23rd

(Continued on page 6)

Hatchery Headlines: Nez Perce Tribal Fisheries, Steelhead Kelt Reconditioning

(Continued from page 5)



Air-Spawn Crew. Collaboration at its finest!

Credit: Angela Feldmann/USFWS

Meetings/Reports

DNFH project coordination meetings – Thursdays, all month

Air-spawning demonstration, Coleman NFH – Jan 30th-Feb 1st

Clearwater AOP - Feb 14th

Air-spawn presentation, spawn room set-up- Feb 20th

COE, USFWS, BPA and NPT discuss BPA management plan, (conf. call) – Feb 20th

Public Outreach

Staff interview about air-spawning, Lewiston Morning Tribune- Feb 26th

Budget/Personnel

Train new fisheries technician, Joe Samuels – Feb 11th-15th

Information and Education Corner

Dworshak

Stats: Tours-3, 77 people; Register– 150 visitors from 4 states; Volunteers– 8 Hours-50; Website visitors– 305; Blog Visitors– 529 from 10 countries!

On Site:

- Posted 2 article to the Dworshak Fisheries Complex Blog. Please visit the site: [The Fish Ladder: Notes from Dworshak Fisheries Complex](#); your contributions and comments are always welcome!
- Do you have a Facebook account? Have you “Liked” the Dworshak Fisheries Complex Facebook page yet? Our page is getting a lot of views, shares, and has over 80 likes. We are making daily posts about activities, nature sightings, and general goings-on at Dworshak and the Clearwater River area. If you haven’t yet, take a minute to look at the page: [Dworshak Fisheries Complex](#), and like us!
- Teleconference with Sean Connelly regarding I/E working group. Discussed having their regional graduate assistant put together two informational videos for Dworshak. One will deal with steelhead spawning the other will be an overview of the Hatchery. These videos will go onto the USFWS YouTube site and be played in our lobby.
- Began cleanup for Visitor Services lobby renovations
- Volunteers were contacted for spawning and upcoming tours
- Updated Dworshak web page

Off-site:

Jeremy Sommer attended a Hatchery in the Classroom Mentors’ meetings at the IDF&G regional office in Lewiston, ID.

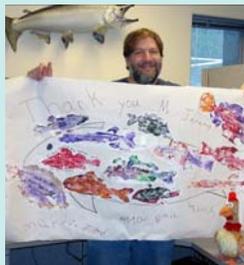
Jeremy Sommer lead a Goyutaku activity at Orofino Head Start

Nate “Nick” Wiese gave a Hatchery presentation at the Rotary Club of Orofino.

Kooskia

Hatchery Personnel are trying to keep a number count of visitors on the grounds. We had approximately 105 visitors for the month by the manual count. Visitor numbers are up slightly due to warmer weather and possibility of returning steelhead.

“Have you
‘liked’ the
[Dworshak
Fisheries
Complex
Facebook
page yet?](#)”



Jeremy Sommer, NPT, with a Thank You poster from Orofino Head Start.

Credit: Angela Feldmann/USFWS

Idaho Fish Health Center

Complex Hatcheries

Kooskia: Guppy visited KNFH on 2/19 for a SCS diagnostic exam due to increase in mortality in one pond. Pre-release samples for SCS were also collected on 2/27.

Dworshak: Ten BY11 juvenile SCS from each of the two density treatment groups in B series raceways were collected for the fish health monitoring for the pilot study on January 23 by Rick. No external or internal abnormalities observed. It was noted that the body fat content improved during February after the 30 day fasting period in January. Kidney tissue was collected for Renibacterium salmoninarum screening by ELISA. Hematocrits were collected to determine percent packed red blood cell volume.

Diagnostic screening was conducted by Rick to determine the increased mortality of juvenile spring chinook reported in raceway A14 and its serial reuse raceway B29. The pathogens Renibacterium salmoninarum (BKD), Flavobacterium psychrophilum (coldwater disease) and IHNV have been isolated from moribund fish. At this time the mortality is low level and chronic.

Rick worked with Ray Jones and Guppy to complete the fish health methods for the spring Chinook density trial project. It appears that there will only be adequate funding to conduct fish health monitoring on the high density treatment group.

Fish health samples were taken from spawning steelhead adults at DNFH on Feb. 12 and 26. Nonlethal samples were also taken from steelhead adults fresh from the river for epidemiological studies. GnRHa hormone implant evaluations were performed for its use under the INAD on these spawning dates as well. **Nez Perce Tribe:** Fish appear to be doing well. No actual visit was made to the facility due to Coop agreement expiring last Sept. Laura spoke with both Aaron and Steve working towards developing new cooperative agreement and services needed.

Bacteriology: Cold Water Disease (Flavobacterium psychrophilum) was found in NPT COS and confirmed by PCR. DNFH SCS were positive for Bacterial Kidney Disease (BKD) by DFAT.

Virology: Corie ran a total of 102 samples from Dworshak NFH, Nez Perce Tribe fall Chinook acclimation program (FCAP), Nez Perce Tribal Hatchery, Nez Perce Tribe Coho program, and Kooskia. Samples also included steelhead fresh from the river for epidemiological study purposes. She ran 94 blind passes from Dworshak NFH adult Steelhead and the Nez Perce Tribe FCAP. Starting in January the nine national USFWS Fish Health Centers participated in virology ring testing to test the susceptibility of our current cell lines to two different viruses (IHNV (L-clade and M-clade) and LMBV). In February these samples were confirmed by PCR.

PCR: Corie confirmed the USFWS Fish Health Center virology ring testing samples.

Rick developed an extraction protocol for the purification of DNA from Renibacterium salmoninarum (BKD) using the automated magnetic bead extractor.

This will allow the lab the ability to process large volumes of ELISA positive samples that need to be confirmed by PCR in a timely manner.

The processing, extraction and screening for the viral RNA that causes Infectious Salmon Anemia virus (ISAv) for the Pacific Northwest Surveillance Project was finally authorized in late February. Two hundred and sixty samples from adult salmonids collected by the Region 1, Olympia Fish Health Center were received February 12. The first seventy samples from sockeye salmon and spring chinook salmon were processed and screened for ISAv by real time reverse transcriptase PCR the last week of February by Rick.

Laura processed (extracted and ran) Hagerman NFH monthly monitoring samples for NS (Nucleospora salmonis). In addition, F. psychrophilum (Coldwater Disease) was confirmed in coho and spring Chinook salmon at DNFH.

ELISA: A total of 488 samples were tested for Renibacterium salmoninarum (BKD) by ELISA on Feb. 12 and 13 by Guppy. These samples were taken primarily from the wild fish health survey program with some additional samples from a DNFH SCS diagnostic case and a KNFH SCS monitoring exam.

Wild Fish Survey: Laura extracted and processed 91 kidney samples for confirmation of BKD. Laura participated in all UAT (User Acceptance Team) conference calls for the Wild Fish Survey Database development.

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New Grip struts at Kooskia

Credit: Kent Hills/NPT

“Idaho Fish and Game held a Hunter’s Safety Shoot at Kooskia NFH.”



Shop insulation project at Kooskia

Credit: Kent Hills/NPT

Maintenance & Operations

Dworshak

February maintenance activities included:

Installing nursery tank reuse pumps

Mechanical II PLC controller programming

Completed programming water level probe for VFD control in nursery tower

Repairing Dewatering towers.

USACE engineers scoping for hatchery building HVAC system replacement.

Contractors picked up degassing towers for construction preparation.

Repaired Chevy Trailblazer transmission interlock.

Ordered new dash for 1 ton Dodge PU.

Rebuilding Nursery Supply pump (Jetco)

Ordered utility body maintenance truck.

Replaced Cushman cart #3 headlights.

Mech II make up Pump PMs

Heat exchanger loop pumps Mech II PMs

Traveling screens PMs

Completed replacing nursery vent pipes

John Deere Backhoe annual service

Assembled hoses for Dewatering towers.

Annual service performed on Fish Truck.

Wiper pump repaired on Fish Truck.

Kooskia

02/04: Fire Extinguisher inspections and worked on shop insulation.

02/07: Two burrows pond shade cloths were delivered to Tarps & More for repair.

02/12: Kenny traveled to DNFH to help with spawning and Art picked up shade covers in Lewiston.

02/16: Idaho Fish and Game held a hunter’s safety shoot at the hatchery, 30 people attended and there were 19 shooters.

02/19: Had high mortality in BP4 (45). Fish Health was called and responded on the same day. Fish analyzed from BP4, revealed no obvious issues at this time and samples were taken for further analysis.

02/21: Water was turned into the raceways in preparation for the arrival of Coho salmon.

02/26: The first of the Coho arrived and put into raceways, there will be a total of 317,000 Coho on Kooskia station by the end of the week.

02/27: Fish Health personnel arrived and took 60 fish from BY2011 for pre-release inspections, 20 fish were taken out of BP 3, 4 & 5.

Manager's Message....

(Continued from page 1)

Half way home I remembered the "Spring Chinook Challenges" memorandum written by Dan Diggs. At the time Dan was my supervisor and supervised most of the Columbia Basin hatcheries for the Service. He later went on to serve as the Assistant Regional Director for Fisheries. In his memorandum Dan shared his commitment to optimizing the survival of spring Chinook released from our hatcheries as his number one priority and challenged all of us to work to make that happen. I still have a copy of this memorandum and thought I'd briefly share some of its key points. Dan wanted all of us to make a commitment to address the challenges and problems in spring Chinook culture, and he defined this as "Commitment means all of us challenging ourselves and our "paradigms" about spring Chinook culture in order to innovate and create". He felt we knew right now what needed to be done to double our spring Chinook survival rates and identified three key issues to why that hasn't occurred:

We have been driven too long by the concept that "more is better" and more fish means more money from Congress and Washington D.C. I believe in many cases this has put us in the position of managing on the edge of best fish cultural practices and pushing antiquated facilities built 50 years ago to the outer limits of their biological capability.

We seem to respond slowly to implementing advances in technology and research...The reasons for slow or non-implementation abound: budget constraints, personnel ceilings, resistance to change, lack of guidance, etc., etc., in other words "lack of commitment".

We have been ineffective in focusing and coordinating a "Regional" effort to improve spring Chinook culture and survival.

Dan went on to say, "I am challenging all my project leaders to make this year is the beginning of the decade of spring Chinook and that together if we are conscientious and willing to try something different (change our paradigms), we can double or triple those survival rates." He cited a couple examples to help lead this effort, "...each Fish Health Center to develop a detailed analysis and set of recommendations for comprehensive BKD control programs...; ...development of an optimum spring Chinook diet...; ...development and trials of innovative rearing techniques to improve the survival of spring Chinook to the Clearwater (e.g. zero age rearing, fry release strategies, etc..)."

The year of Dan's "Spring Chinook Challenges" memorandum was 1990. Isn't it strange how things seem to come full circle? As we chart the next era in spring Chinook production, let's not forget our lessons from the past. As the saying goes, "you can't know where you're going until you know where you've been".

Idaho Fish Health Center

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Other: Corie and Guppy edited the fish health sections of the 2013 Clearwater AOP document, and Corie attended the AOP meeting on February 14. Rick and Corie attended a meeting with IDFG, IFRO and Dworshak to coordinate SCS releases on Feb. 20.

Rick and Laura received training for CPR, AED, first aid and bloodborne pathogens.

Andy Goodwin, Region 1 Fish Health Director conducted two monthly conference calls with the Idaho, Lower Columbia and Olympia Fish Health Centers. Guppy also attended the Region 1 Project Leader conference call on Feb. 11.

Joel Bader, National Aquatic Animal Health Coordinator, hosted a conference call with all fish health centers on February 4.

Laura Participated on an AFS-FHS Bluebook committee conference call.

Guppy attended the Clearwater AOP Subgroup meeting on Feb. 5 in Lewiston, ID.

A summary of monthly case testing was prepared for January 2013 for Andy Goodwin by Rick.

Guppy compiled and submitted the Region 1 fish health report for the Pacific NW Fish Health Protection Committee meeting in February.

The Idaho FHC's self-safety audit was completed and sent to Mark Drobish for incorporation into the Dworshak complex audit.

Laura, Corie, and Guppy met with Mike Key on Feb. 1 to discuss Idaho FHC's contract with the NPT FCAP program.

Laura and Guppy continued working on updating detailed budgets for COE and 1311 funds.



FWS Volunteer, Jerry Berger talks to an excited group of 4th graders

Credit: Angela Feldmann/USFWS



FWS Volunteer, Joe Davis answers questions about spawning.

Credit: Angela Feldmann/USFWS



Students from Whitman Elementary viewing steelhead spawning.

Credit: Angela Feldmann/USFWS

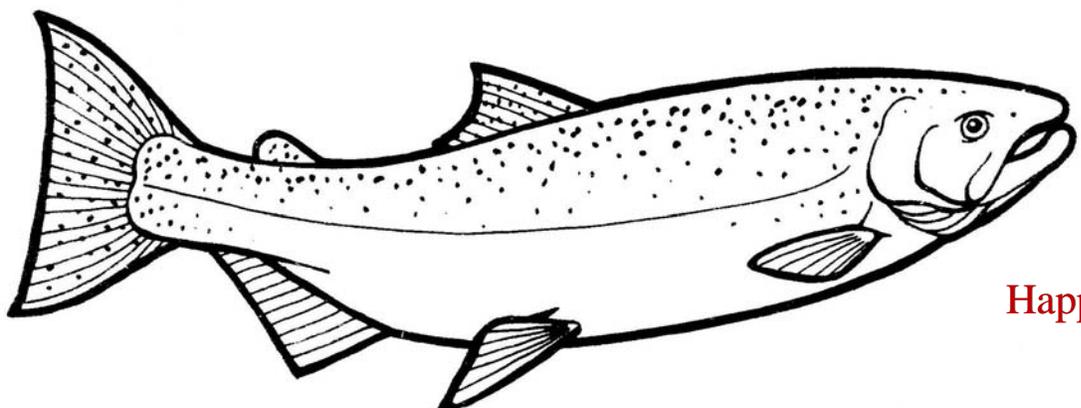
Meetings....Training....Travel

Dworshak

- 02/05 Nate Wiese, Speros Doulos, Kent Hills, Ray Jones, Chris Peery, Mike Faler and Mark Drobish attended the Coordination Meeting at the Idaho Fish and Game Regional Office in Lewiston, ID.
- 02/07 Chris St. Germaine, Nez Perce Tribe visited the hatchery to pursue opportunities and evaluate logistics to install an antennae to improve internet access in the area.
- 02/12 Speros Doulos, Nate Wiese, Becky Johnson, Kent Hills and Mark Drobish met for the monthly Snake River Basin Adjudication (SRBA) meeting to discuss budget, management issues, personnel and hiring opportunities for vacant positions.
- 02/14 Speros Doulos, Nate Wiese, Kent Hills, Jeremy Sommer, Chris Peery, Mike Faler and Mark Drobish participated in the Clearwater River AOP meeting hosted at the Clearwater Fish Hatchery.
- 02/20 Speros Doulos, Becky Johnson and Mark Drobish traveled to the Walla Walla District to meet with the rest of the Dworshak Working Group to continue discussions between the Corps, FWS and NPT regarding cost allocation for the various programs at Dworshak.
- 02/25 Nate Wiese traveled to NCTC to teach Coldwater Fish Culture.

Kooskia

- 02/05-06: AOP meeting in Lewiston at the IDFG Regional Office.
- 02/07: All staff attended the Nez Perce Tribal Fisheries conference held at the Red Lion in Lewiston where we were advised of upcoming issues facing tribal fisheries.
- 02/12: SRBA meeting at DNFH.
- 02/13: Kenny & Gerry attended first aid training at DNFH.
- 02/14: All staff attended online training on use of government vehicles. Kent attended the AOP meeting at Clearwater Hatchery.



Happy Valen

Administrative Activities

Safety

The Dworshak Hatchery Safety Committee met on February 13; the next meeting is scheduled for March 20th at 1:00 PM

Personnel Actions

DNFH: Recruit Permanent Electrician-WG10, 2/20 (Pending)

DNFH: Recruit Permanent Animal Caretaker-WG2/3/4/5, (Denied from 1/25)

DNFH: Henderson, Resignation, 2/15

FRO: Recruit Temp BioAid-GS3, 2/13 (Pending)

FRO: Bugler, Ext of Term Appointment-Career Ladder Promotion, 2/14 (Pending)

FRO: John Hook (Term Biologist) started 2/25, Welcome!

FHC: Cordes, Ext of Term Appointment, 2/13 (Pending)

Other

GvoTrip will be retired next fall. More details to come.

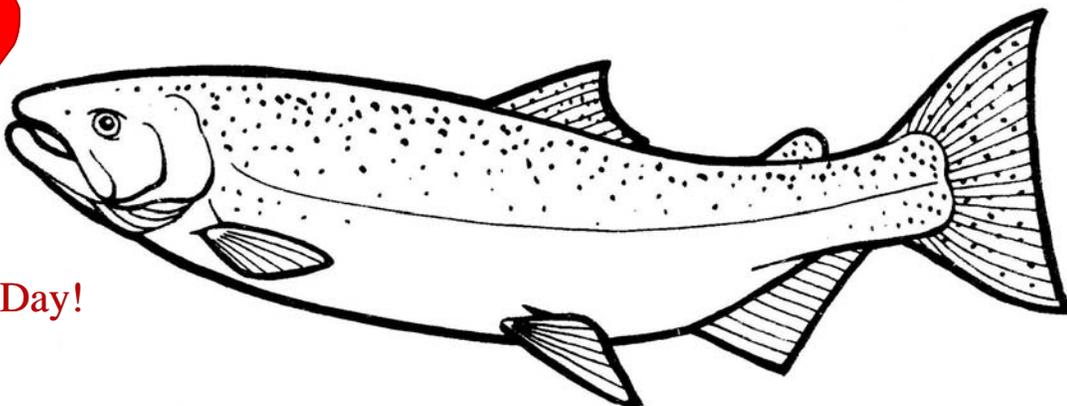
Staff Service Anniversaries and Birthdays

February Birthdays

Ben Greene
Steve Bradbury
Ray Jones

Years of Service

Steve Bradbury– 14 yrs
Billy Connor– 22 yrs
Chris Peery– 4 yrs



Birthdays Day!

Staff List

Complex Management

Speros Doulos, Acting Complex Manager
Mark Drobish, Hatchery Manager
Kent Hills, Acting Nez Perce Tribe Co-Manager
Nate Wiese, Assistant Hatchery Manager
Jack Christiansen, Aquatic Engineer

Dworshak Production Staff

Mark Bright, Angela Feldmann, Jill Olson,
Rick Allain, Rob Bohn, Wayne Hamilton,
Tom Tighe

Nez Perce Tribe Production Program

Mike Bisbee, Tuianna Moliga, Lou Ann
Lasswell, Steve Coomer, Jeremy Sommer,
Ira Wilson, Carter Lopez

Administration

Penny Hasenoehrl, Steve Bradbury

Maintenance

Adam Izbicki, Ben Greene, Terry Weeks,
Rick King, Rob Kellar, James Oatman, Ja-
mie Henderson, Scott Koehler, Melissa
Billups

Idaho Fish Health Center

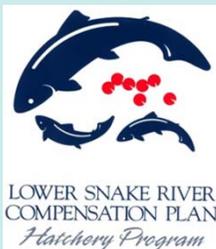
Dr. Marilyn Blair, Liz Steiner, Laura Spra-
gue, Corie Samson, Rick Cordes

Idaho Fishery Resource Office

Mike Faler, Dr. William Conner, Ray
Jones, Aaron Garcia, Carrie Bretz, Frank
Mullins, Dr. Chris Peery, Jody Brostrom,
Randy Bowen, Ken Bugler, John Hook

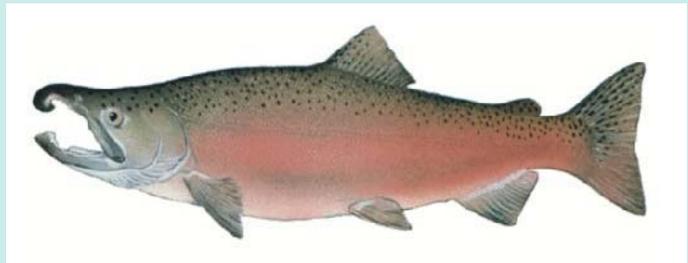
Kooskia National Fish Hatchery

Kent Hills, Art Broncheau, Kenny Simpson,
Gerry Fogelman



Nez Perce Tribe and Dworshak NFH Production, Maintenance, and Administrative staff.

Credit: Angela Feldmann/USFWS



Parting Shot



The spawning grounds of Dworshak National Fish Hatchery. It takes a village to spawn a fish!

Credit: Angela Feldmann/USFWS