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Director's Greeting...

I am in the middle of a 30-day job swap with the Center Director, making me the Acting Center Director here at Abernathy. As a career Ecological Services employee, the activities at the Fish Technology Center are all very new to me. From testing and developing fish feed to designing and building antennas, collecting and analyzing data, conducting genetic research, maintaining buildings and equipment, and the never ending administrative tasks... there is a tremendous variety of work being done here on a daily basis! I'd like to thank the staff at Abernathy for welcoming me to your facility and helping me function as the Acting Center Director. The skills and dedication of the Abernathy staff are truly amazing. Keep up the great work!

Steve Henry, Acting Center Director (ALDP Cohort X)

Staff:

Administration:

Judy Gordon, Center Director
 Patty Crandell, Deputy Center Director
 Vince Bocci, Administrative Officer
 Toni Scholder, Administrative Assistant
 Mark Hack, IT Specialist
 Jim Lowell, Maintenance Worker
 John Holmes, Fish Biologist
 Jeff McLaren, Biological Technician

Nutrition:

Ann Gannam, Regional Nutritionist
 Ron Twibell, Fish Nutritionist
 Jeff Poole, Extruder Operator
 Nathan Hyde, Biological Technician

Conservation Genetics:

Denise Hawkins, Regional Geneticist
 Christian Smith, Conservation Geneticist
 Pat DeHaan, Fish Geneticist
 Brice Adams, Biological Technician
 Molly McGlaflin, Fish Geneticist
 Matt Smith, Fish Geneticist

Ecological Physiology:

Ken Ostrand, Regional Eco-Physiologist
 Kyle Hanson, Fish Physiologist
 Ben Kennedy, Fish Ecologist
 Richard Glenn, Microbiologist
 Will Simpson, Fish Ecologist
 Kurt Steinke, Electronics Engineer
 Jerone Anderson, Electronics Technician
 James Samagaio, Biological Technician
 Ashley McNamee, STEP Employee

DC Staff Visits AFTC



Judy Gordon, Bryan Arroyo, Denise Hawkins & Jeff Underwood
USFWS

Bryan Arroyo, Assistant Director for Fisheries and Habitat Conservation, Jeff Underwood, Deputy Assistant Director for Fisheries and Habitat Conservation, both in Washington DC, and Jana Grote, Pacific Region Fisheries Supervisor, visited AFTC. After lunch with the staff, they participated in AFTC's 50 years of operation birthday celebration followed by open discussions with staff from Nutrition, Conservation Genetics and Ecological Physiology. They expressed their sincere thanks to the staff for their dedication to the resources and their work ethic.

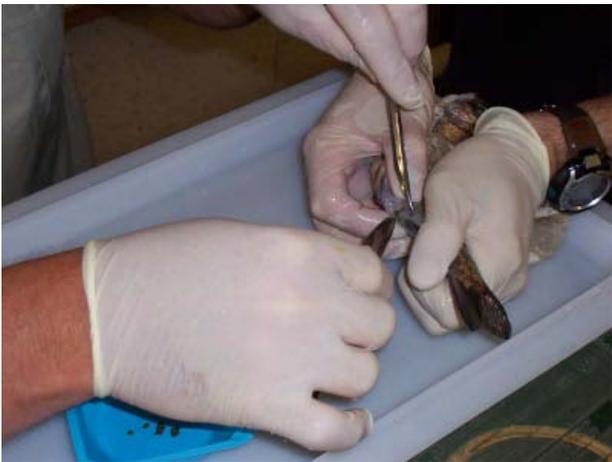
Program Highlights....

Nutrition

Nutrition staff made feed for the University of New Hampshire. This feed will be fed to cod to test alternative proteins, soybean meal and soy protein concentrate.

A coho feeding trial testing alternative lipids and proteins was completed. A marine based diet (marine oil and protein) and a land based diet (plant oils and land based protein) were fed to the coho fingerlings to compare their effects on fatty acid composition and gene expression. This project was done in cooperation with the Conservation Genetics Program at AFTC and with the Olympia Fish Health Center (Joy Evered, Ray Brunson) who collected and analyzed blood samples during the termination of the project. Liver samples were collected by the Conservation Genetics Program to determine gene expression. Fish fillets and livers were collected for fatty acid analysis.

A cooperative project with the Bozeman Technology Center was completed. Coho were fed experimental diets used to determine digestibility of alternative ingredients. Fecal collection was also conducted.



Ron Twibell and Nathan Hyde collecting fecal material for digestibility study. *USFWS: A. Gannam*

Nutrition cont....

The final report for the funded outreach project Susan Ostrand obtained was submitted. Susan obtained additional funding this year (\$964.00) to continue her work with the loan of backpacks at the Longview library. AFTC was able to purchase six additional backpacks. Four of the new backpacks focused on the climate change issue; mammalogy & tracking were the themes for another two backpacks. Two other libraries, one in Kelso and the other in Castle Rock, were also contacted and now are participating in the program to loan backpacks to interested children.

New instrument! The Program had our new High Performance Liquid Chromatographer (HPLC) setup. With this instrument we will be able to analyze for amino acids and vitamins. This capability is especially important in the testing of alternative ingredients in the feeds.



Nutrition's new HPLC. *USFWS: A. Gannam*

Program Highlights cont....

Nutrition cont....

As part of Fish Feed Quality Control, Nathan Hyde and Ron Twibell analyzed 7 feed samples. As part of the routine analyses, all feeds from NFH's were checked for rancidity. Ann Gannam wrote the feed memos and contacted the feed mills when necessary.

Program staff discussed collaborative research in the area of nutrient enhancement in streams with Michael Newsom of the Bureau of Reclamation (BOR) during his visit to ATFC.

In cooperation with the Ecological Physiology Program, the Program staff had a conference call with the Oregon Hatchery Research Center to discuss possible cooperative research concerning the use of salt in the diet to enhance smolting.

Conservation Genetics

This month brought new technology to the AFTC Conservation Genetics Program in the form of a Fluidigm EP1. The EP1 enables us to produce high-throughput SNP (single nucleotide polymorphism) data, assessing 96 SNPs on 96 samples in one run. SNPs are a type of molecular marker that assesses genetic variation in both neutral and non-neutral DNA which provides benefits in data sharing among labs. We also received a one-day training session provided by Fluidigm.

Conservation Genetics cont....

Matt Smith assisted Columbia River FPO (CRFPO) and Oregon Department of Fish & Wildlife (ODFW) staff in collection of genetic samples from Clackamas River coho. These samples will be used in our assessment of population structure of Clackamas coho.

Pat DeHaan spent a week at University of Washington (UW) in the lab of Jim and Lisa Seeb to work on the development of species specific SNPs for *Salvelinus*. In addition to laboratory work, Pat attended many informative symposiums while at UW.

Brice Adams began work on samples from winter-run Chinook salmon from the Sacramento River, CA and Livingston Stone NFH that will be used in a project designed to evaluate the spawning success of hatchery origin winter run Chinook spawning naturally.

Pat DeHaan presented a talk titled "Analyses of Genetic Variation in Natural and Reintroduced Populations of Oregon Chub" detailing the genetic assessment of different reintroduction strategies implemented in the Willamette River system. The presentation was part of the Science in the Service – Oregon Scientific Meeting for FWS biologists held in Skamania, OR.



Oregon chub.

ODFW

Program Highlights cont....

Ecological Physiology

Six new antennas were constructed and installed by Program staff for BOR to monitor mid-Columbia steelhead. The new antennas use two parallel inductive loops to more evenly distribute the magnetic field such that the response from the tag is more uniform throughout the antenna.



Replacement antennas to monitor mid-Columbia River steelhead. These antennas were specifically designed to function in high electronic noise environments. *USFWS*

Initial tests with an Allflex reader were performed and indicated that this will be a viable alternative to the more expensive Destron Fearing Multiplexors when only one antenna needs to be controlled at a site.

PIT tags from two new manufacturers (AEG and Soartech) were tested by Kurt Steinke and Jerone Anderson. Some of the sample tags are as small as 7mm, providing options for tagging smaller fish than was previously possible. The availability of tags from more vendors will increase options available for ordering tags for projects.

James Samagaio, Will Simpson and Ashley McNamee pressed and examined scales to determine adult and juvenile ages of steelhead.

Ecological Physiology cont....

Kyle Hanson, Richard Glenn and Ashley McNamee completed analyzing gill, plasma, and muscle biopsies from hatchery and wild juvenile Chinook salmon captured in the Columbia River estuary for a project looking at habitat utilization during outmigration.

Kyle Hanson, Richard Glenn, Ashley McNamee and James Samagaio sampled returning female Chinook salmon at Spring Creek NFH for a study looking at the effects of handling stress on spawning salmon.

Ben Kennedy, Will Simpson, James Samagaio and Richard Glenn sampled fish around Cottonwood Island in the Columbia River by beach seining with research partners from Pacific Northwest National Laboratory as part of an ongoing study designed to determine sampling protocols, that incorporate physiological variables, to guide future estuary restoration activities in the lower Columbia River.



Ken Ostrand showing the Portable Passive Integrated Transponder (PIT) Unit to visiting FWS law enforcement personnel. *USFWS*

Program Highlights cont....

Administration/Facilities

Judy Gordon completed Phase 1, as a participant in the FWS Advanced Leadership Development Program (ALDP), Cohort X. This eleven month program allows participants to explore leadership in the FWS and to assess, learn about, and develop each participant's abilities as a leader. ALDP includes four weeks of class work at the National Conservation Training Center, one 30-Day Job Swap Detail, and one 60-Day Detail. Judy exchanged jobs with Steve Henry, Deputy Field Supervisor, Ventura Fish and Wildlife Office, Ventura, CA.

Judy Gordon invited FWS law enforcement personnel for a visit. Paul Chang, Special Agent in Charge for the Pacific and Pacific Southwest Regions, brought seven of his staff for an in-depth tour of AFTC. Their visit not only left them with a better understanding of the work AFTC does but also with an appreciation for how the information generated by AFTC staff is used by the FWS and its partners in managing aquatic resources.



Judy Gordon giving introduction to FWS law enforcement personnel about Abernathy FTC. USFWS

Administration/Facilities....

Paul Henson, Field Supervisor, Oregon State FWO, visited AFTC to discuss possible cooperative opportunities.

Reports and Publications

Conservation Genetics

Smith, C., L. Godfrey, M. Diggs and D. Hawkins. 2010. Genetic analysis of cutthroat trout from Mt. Hood National Forest. Abernathy Fish Technology Center Report for U.S. Forest Service.

Hawkins, D. and L. Godfrey. 2010. Genetic distinction of summer-run and winter-run steelhead in the Hood River, Oregon. Rapid response genotyping for hatchery broodstock selection. Abernathy Fish Technology Report for Confederated Tribes of Warm Springs and Oregon Department of Fish and Wildlife.

Ecological Physiology

Walker, R.P., A. O'Toole, Z. Whynot, Z., K.C. Hanson, and S.J. Cooke. 2010. Evaluation of the aquatic habitat and fish assemblage in an urban reach of the historic Rideau Canal, Ottawa, Canada: Implications for management in an engineered system. *Urban Ecosystems*. 13:563-582.

Taylor, P.W., and K.C. Hanson. 2010. Sub-lethal effects of fluorescein dye on smoltification of steelhead (*Oncorhynchus mykiss*) fingerlings. Abernathy Fish Technology Center Report for Hagerman National Fish Hatchery. 3059-D National Fish Hatchery Rd, Hagerman, ID 83332.

Workshops, Conferences, and Meetings....

Conservation Genetics:

- Denise Hawkins attended a meeting of the Recovery Monitoring and Evaluation Group for bull trout at the CRFPO in Vancouver. This is a collaborative group of state and federal agencies and universities that will be working to aid the FWS in planning for bull trout recovery.
- Molly McGlaufflin and Denise Hawkins attended a Bonneville Power Administration (BPA) Scientific Review Group meeting in Pendleton, OR with Patty Crandell and Ken Ostrand.
- Pat DeHaan participated in a conference call of the Clackamas River bull trout Reintroduction Monitoring and Evaluation Group. This group is tasked with planning and evaluating the reintroduction of extirpated Clackamas bull trout.
- Pat DeHaan attended the annual *Salvelinus confluentus* Curiosity Society meeting held this year in Klamath, OR. Pat gave a joint presentation with Shana Bernall (Avista Corp) detailing our on-going parentage study in Clark Fork River bull trout.
- Christian Smith, Matt Smith, and Denise Hawkins participated in a conference call with Lytle Denny, Andy Kohler, Dan Stone, Mike Haddix, Chad Colter, and Kurt Tardy of the Shoshone-Bannock Tribes to discuss potential projects.
- Denise Hawkins participated in a meeting at the Washington FWO to discuss and provide guidance on genetics issues for the Conservation Supplementation Plan for Late-Run Lake Sammamish Kokanee. The meeting was attended by representatives of Washington Department of Fish & Wildlife (WDFW), King County and FWS.
- Matt Smith and Christian Smith participated in a conference call to discuss the available spring Chinook baseline data for an upcoming project with the Shoshone-Bannock Tribes in Panther Creek.

Ecological Physiology:

- Kenneth Ostrand, William Simpson, and Jerone Anderson met with BOR to discuss an ongoing collaborative project that involves mid-Columbia River steelhead.
- Jerone Anderson and Kurt Steinke visited NOAA Fisheries in Seattle to discuss antenna design and multiplexer tuning.
- Kenneth Ostrand traveled to Pendleton, OR with other staff to give a proposal presentation to BOR.

Administration/Facilities:

- Patty Crandell and Christian Smith participated in an Eagle Creek NFH Hatchery Evaluation Team meeting at CRFPO with staff from CRFPO, Eagle Creek NFH, and Lower Columbia FHC.
- Patty Crandell participated in a Spring Creek NFH Hatchery Coordination Team meeting with staff from Spring Creek NFH, Lower Columbia FHC, the Army Corps of Engineering, NOAA-Fisheries, WDFW, and CRFPO.
- Patty Crandell participated in an all day Pacific Region Climate Change Board meeting. The meeting objectives included: 1) getting updates about previous and ongoing climate change activities in the Pacific Region and 2) setting objectives and operating procedures for the Board. She received an assignment to work with Bill Gale from Mid-Columbia River FRO and Doug Spencer of Willamette Valley NWRC on defining procedures to get climate change vulnerability assessments for FWS programs with lands and facilities and to prototype the process and test on a small number of facilities.

New Faces & Outreach....

New Faces....



Matt Smith, new Conservation Genetics Fish Biologist, grew up in Green Bay, Wisconsin, home of the mighty Green Bay Packers. Matt earned a bachelor's degree in Business from the University of Wisconsin-Milwaukee and in Fisheries from the University of Washington (UW). His master's degree is also from UW where he used genetics as a tool to determine historical harvest compositions of sockeye salmon in Bristol Bay, Alaska. He enjoys camping, fishing, canoeing, and cooking tasty food. Matt is starting work on a population structure assessment of coho in the Clackamas River, OR.



Steve Henry, Deputy Field Supervisor, Ventura Fish and Wildlife Office, Ventura, CA. Steve is the Acting Director for AFTC on a job swap detail with Judy Gordon as part of the FWS ALDP, Cohort X.

Outreach....

Patty Crandell participated in two outreach events for landowners in Abernathy, Germany and Mill Creek drainages. The events were organized by Eli Asher, Habitat Program Manager for the Lower Columbia Fish Recovery Board, and were intended to inform residents in the area of ongoing research and restoration activities along the three creeks. Outreach participants included employees from WDFW (Olympia and Vancouver offices), Washington Department of Ecology, Washington State Recreation and Conservation Office, Cowlitz Conservation District, Lower Columbia Fish Enhancement Group, and Columbia Land Trust.