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Director's Greeting...

Well, we here at Abernathy Fish Technology Center have successfully completed another year. All reporting is done and we're ready to begin FY2010. We were also able to finally get most of the employees together for a staff portrait.....the first in 5 years! While I'm pleased with the results I'm not sure everyone has recovered from "photo trauma". Enjoy!

Staff:

Administration/Facilities:

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

Nutrition:

Ann Gannam, Regional Nutritionist
Ron Twibell, Fish Nutritionist
Jeff Poole, Extruder Operator
Susan Ostrand, Biologist

Conservation Genetics:

Denise Hawkins, Regional Geneticist
Christian Smith, Conservation Geneticist
Pat DeHaan, Fish Geneticist
Kevin Williamson, Fish Geneticist
Lindsay Godfrey, Biological Technician
Brice Adams, Biological Technician

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

**Abernathy Fish Technology Center Staff
September 30, 2009**



USFWS: R. Guarino

Left to right back row: Richard Glenn, Dan Gourde, Kyle Hanson, Christian Smith, Pat DeHaan, Ron Twibell, Ben Kennedy and Jeff McLaren. *Center row:* Toni Scholder, Jeff Poole, Denise Hawkins, Kurt Steinke, Mark Hack, Ken Ostrand, Vince Bocci, Judy Gordon, Ann Gannam, and John Holmes. *Seated:* Jim Lowell, Will Simpson, Susan Ostrand, Patty Crandell, Lindsay Godfrey, Brice Adams, and Kevin Williamson. *Not pictured:* Pete Taylor.

Program Highlights....

Nutrition

Susan Ostrand took a day to work with Mary Peters of the FWS Lower Columbia Fish Health Center (FHC). They sampled spring Chinook at the Yakama Nation's Klickitat Hatchery during spawning. Susan also helped work up the samples when they returned to the FHC.

The last fish and feeds contaminants samples were shipped. These samples were collected for the FONS and off-refuge contaminants projects. They were sent to two Analytical Control Facility contract laboratories for analysis of PCBs, PBDEs, dioxin/furan, and heavy metals.

A 15 week feeding trial with rainbow trout and steelhead was terminated; samples are being processed and analyzed. A marine based diet (marine oil and protein) and a land based diet (plant oils and land based protein) were fed to the fish to determine their effects on fatty acid composition and gene expression. This project was done in cooperation with the Conservation Genetics Program and the Olympia Fish Health Center Staff (OFHC; Joy Evered, Sharon Lutz) who took and analyzed blood samples at the termination of the project. The OFHC will also process tissues sampled for histological examination.



Joy Evered, OFHC, and Susan Ostrand, AFTC, analyzing blood samples for the rainbow trout/steelhead study.

USFWS: Ann Gannam

A bull trout feeding trial was also terminated. This study was a preliminary trial to determine the optimal dietary lipid source for bull trout. Analyses of the samples are pending.

Nutrition cont....

Three abstracts were submitted to the World Aquaculture Society (WAS) for their March meeting. The topics included alternative lipids in feeds, rosemary oil and probiotics as feed additives for health. This meeting will be the international triennial meeting of WAS, the American Fisheries Society Fish Culture Section and the National Shellfisheries Association.

As part of Fish Feed Quality Control, Ron Twibell and Susan Ostrand analyzed 7 feed samples sent by the Pacific Region and Pacific Southwest NFHs. Ann Gannam wrote the feed memos and contacted the feed mills when necessary; double vitamin packs were checked in two feeds. The feeds used at AFTC were also subjected to proximate composition analysis (5 samples).

Ron Twibell, the current Chemical Hygiene Officer, reviewed and corrected the station chemical hygiene plan.

Ecological-Physiology and Nutrition Programs have completed the first phase of the bioimpedance method evaluation. Steelhead composition was evaluated using the bioimpedance device as well as using conventional methods (protein, lipid, moisture and ash) for comparison. This device will be useful to non-lethally check condition of stream fish.

An abstract for a poster was submitted to the 2009 National Forum on Contaminants in Fish, November, 2009 in Portland, OR (sponsored by the US EPA). The poster compares contaminant content in adult salmonids returning to Quilcene, Quinault and Warm Springs National Fish Hatcheries (NFH).

Pete Miller and the LECO bus visited and showed staff new nitrogen analyzer related equipment.

Program Highlights cont....

Conservation Genetics

Lindsay Godfrey completed both microsatellite and SNP genotyping for Chinook from Makah, Quinault, Little White Salmon, Spring Creek, Livingston Stone, and Coleman NFH as part of an ongoing FONS funded project to genetically characterize NFH populations. Christian Smith has begun analyses of the data. In the upcoming year, we will focus on coho salmon samples.

Pat DeHaan and Denise Hawkins traveled to Noxon, MT to meet with collaborators from Avista Corp., Idaho Department of Fish & Game, Montana Fish, Wildlife & Parks, U.S. Forest Service (USFS), and FWS to view study sites, and assist with field collections. The visit was part of an ongoing project funded by Avista Corp. to assist with bull trout passage and determine reproductive success of transported bull trout on the Clark Fork River.



Bull trout from Graves Creek, Clark Fork.
Avista: Shana Bernal

Pat DeHaan also visited study sites, assisted with field collections, and met with collaborators for two other bull trout projects in the Clark Fork River drainage, MT. The Swan Lake project will develop a genetic baseline for bull trout in the system and looks at hybridization and population structure. The Warm Springs Creek basin is a highly disturbed system; this project uses genetic data to examine the effects of fragmentation, assess hybridization and assign population of origin to fish entrained in Silver Lake.

Conservation Genetics cont....



Bull trout collected in Swan Lake.
USFWS: Pat Dehaan



Pat DeHaan and Dan Brewer with bull trout from Storm Lake.
USFWS: Doug Peterson

Brice Adams assisted with field collections for a collaborative project between FWS and USFS to assess the genetic structure and composition of native populations of coastal cutthroat trout (*Oncorhynchus clarki clarki*) in the Lower Columbia River on the Mt. Hood National Forest and in the Columbia River Gorge National Scenic Area.

Christian Smith and Lindsay Godfrey collected the final mRNA samples for their gene expression study. They plan to use qPCR to determine relative expression of several metabolic genes in rainbow trout and steelhead salmon based on animal-based and plant-based diets.

Brice Adams completed genotyping steelhead samples from Abernathy Creek for this year's analysis of relative reproductive success between hatchery and natural origin fish spawning naturally in Abernathy Creek. This is the sixth year of an ongoing BPA funded study.

Program Highlights cont....

Conservation Genetics cont....

Lindsay Godfrey completed lab work to update the Hood River steelhead baseline used to select summer and winter run steelhead collected as broodstock at Powerdale Dam, OR. AFTC uses rapid response genetic analysis to assist Oregon Department of Fish and Wildlife and The Confederated Tribes of Warm Springs to select broodstock for the hatchery program. The project was initiated in 2005.

Ecological Physiology

Richard Glenn collected water samples for AFTC's quarterly sampling for SOC, VOC, pesticide, nitrates/nitrites, and copper/lead.

Richard Glenn coordinated and completed employee fire extinguisher safety training for all AFTC staff.

Kyle Hanson, Will Simpson, and Kurt Steinke traveled to Spring Creek NFH and collected eggs and blood from fall Chinook salmon to determine if maternal stress results in the transfer of stress hormones to offspring (eggs).

Ken Ostrand, Ben Kennedy, Will Simpson, Richard Glenn, and Kyle Hanson electrofished steelhead parr to determine how population demographics, migration timing, and reproductive success of the Abernathy Creek population respond to hatchery supplementation with native broodstock.

Kurt Steinke traveled to Spring Creek NFH and conducted a site assessment for a new passive integrated transponder (PIT) tag system.

Kurt Steinke assisted Washington Department of Fish and Wildlife with PIT tag antenna installation in order to assess Bull trout populations in central WA.

Administration/Facilities

Mark Hack assisted the FWS Conservation Genetics Lab in Anchorage, AK and the FWS Forensics Laboratory in Ashland, OR with FDCC and LUA implementation on their computers. Brad Foster at Forensics Laboratory provided Mark with details about their router and firewall.

Vince Bocci finished annual training for the Air Force Reserve at McChord AFB, WA. He provided customer service, training, and presentations in order to assist the finance office in refining their processes and electronic briefings.

John Holmes, Jeff Poole, and Jeff McLaren transferred steelhead juveniles from the hatchery building to outdoor rearing. Fish scheduled for release in the spring of 2010 were stocked in three raceways at 7,000 fish per raceway. Fish that are being raised as two year old smolts were stocked in six 10 ft diameter tanks at 3,500 per tank.

John Holmes, Jeff Poole, and Jeff McLaren cleared the deck of the electric barrier weir of rock and sediment in preparation for trapping returning adults. The high water flows of last winter also deposited large boulders in the fish ladder used for trapping adults in the spring. With the aid of rock drill, eye bolts, and backhoe Jeff Poole, Dan Gourde, and Jim Lowell were able to remove the boulders.

Patty Crandell attended a military support ceremony in which the Army Reserve recognized AFTC for supporting the military by employing a Reserve soldier, and presented AFTC with a Department of Defense "Statement of Support for the Guard and Reserve" certificate. At the ceremony businesses that employ members of the Army Reserve and Washington National Guard got a big thank-you from the departing general of the reserve, from U.S. Rep. Brian Baird, and from other military brass and elected officials.

Program Highlights cont....

Administration/Facilities cont....

Vince Bocci and Toni Scholder finished the fiscal year end successfully as they drew down the budget to an anticipated 99.73% spent.

Vince Bocci presented Toni Scholder with a pin and certificate for 10 years of federal service.



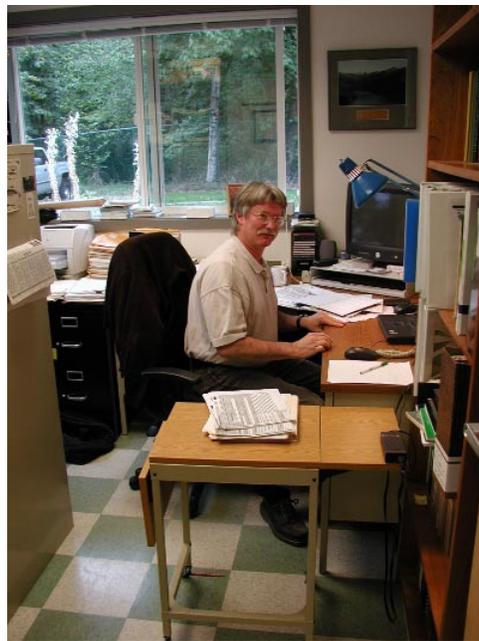
Vince Bocci presenting Toni Scholder her 10 year Service Award.
USFWS: R. Guarino



USFWS: Ann Gannam

Don Campton, noted via email on a query about his uniform allowance, that all he really needed was socks. AFTC staff presented him with a variety of character footwear as a going away gift. Note the DNA version on his lap.

Dr. Campton Moves to the Pacific Regional Office!



USFWS: Judy Gordon

Don Campton has accepted the position of Science Advisor to the Fisheries Program in the Pacific Regional Office in Portland, OR, effective October 11, 2009. His federal career began at AFTC, as Regional Geneticist in 1997, where he served as the lead on various genetics issues for the Service in Regions 1, 8, and 6, including but not limited to the following species: Pacific salmon, Westslope and coastal cutthroat trout, arctic grayling, sturgeon species and the spotted owl. Don was also instrumental in setting up the AFTC's genetics laboratory. Most recently he has been the Region's technical representative on external hatchery reform/review efforts: including Puget Sound and Coastal Washington Hatchery Reform Project and the Columbia River Basin Hatchery Scientific Review Group. In addition, Don has been co-chair of the Pacific Region's Hatchery Review Team. Author of numerous publications, he has also served as an Associate Editor for the journal *Transactions of the American Fisheries Society*.

Good luck Don, we'll miss you and your socks!

Training, Workshops, Conferences, and Meetings....

Nutrition:

- Ann Gannam and Ron Twibell attended the 32nd Fish Feed and Nutrition Workshop in Twin Fall, ID. One of the outcomes of the meeting was that AFTC will be involved with a group writing a procedure paper concerning the development and use of appropriate reference diets.
- Ron Twibell and Kyle Hanson participated in a Hagerman NFH Hatchery Evaluation Team meeting by telephone.
- Susan Ostrand attended the ice cream social for outreach participants at the regional office to wrap up the FY09 outreach program for the Pacific Region

Conservation Genetics:

- Christian Smith attended the annual American Fisheries Society meeting in Nashville, TN where he presented the results of genetic analyses that allow quantification of migration and hybridization between ESA listed Modoc suckers and Sacramento suckers.
- Denise Hawkins presented a genetics overview covering sampling guidelines, where genetic analyses are carried out, a description of several different genetic markers, and some examples of AFTC capabilities and projects to Oregon Department of Fish & Wildlife (ODFW) Fish Biologists at their annual meeting. The meeting was attended by most of the regional biologists and was held at the Big K Ranch on the Umpqua River, OR.
- Pat DeHaan and Christian Smith attended a meeting with the US Forest Service, ODFW and U.S. Geological Service to discuss cutthroat trout and bull trout genetic projects in the Hood River system, OR.

Ecological Physiology:

- Ben Kennedy, Ken Ostrand, and Kyle Hanson attended a week long training course on Motorboat Operator Certification Course in Richland, WA.
- Ken Ostrand attended the 8th International Workshop on Smoltification. Participation is by invitation only and the program consisted of oral and poster paper presentations concerning smoltification of salmonids. The workshop convenes every four years to provide understanding of the smoltification process to allow for informed decisions relevant to management, husbandry and conservation of anadromous salmonids.
- Kyle Hanson presented at the American Fisheries Society Annual Meeting in Nashville, TN. Title: Causes and consequences of voluntary anorexia during the parental care period of male smallmouth bass in relation to brood development.

Administration/Facilities:

- Mark Hack attended the Federal Desktop Core Configuration - Least User Access (FDCC-LUA) meeting/training session in Denver. The meeting was productive and pulled together representatives from many different organizations within FWS. Mark will continue to be an active participant in the FDCC-LUA rollout planning and implementation.

Training, Workshops, Conferences, and Meetings,

Administration/Facilities cont....

- Mark Hack participated in monthly laboratory and IT collaboration conference calls and weekly LUA Waiver Process Working Group Conference calls. A draft of the waiver process has been sent to the Chief Technology Officers for final approval.
- Patty Crandell participated in Spring Creek NFH's Hatchery Coordination Team meeting with NFH, Columbia River FPO, and Lower Columbia FHC staff and cooperators from the Corps of Engineering, Bureau of Reclamation, and NOAA-Fisheries.

Reports and Publications:

On ders R. J., S. D. Mims, C. D. Webster and **A. L. Gannam**. 2009. Apparent digestibility coefficients of protein, lipid and carbohydrate in practical diets fed to paddlefish, *Polyodon spathula*, (Walbaum). Aquaculture Research. On-line.

Rawles, S. D., Thompson, K. R., Metts, L. S., **Gannam, A. L., Twibell, R. G.**, Brady, Y. J., Webster, C. D. 2009. A comparison of two fecal collection methods for protein and amino acid digestibility coefficients for menhaden fish meal and two grades of poultry-by-product meals in market-size sunshine bass (*Morone chrysops* X *M. saxatilis*). Aquaculture Nutrition. On-line.

Ford, Michael J. and **K.S. Williamson**. The Aunt and Uncle Effect Revisited. Journal of Heredity, Advance Access published on August 10, 2009; doi: doi:10.1093/jhered/esp068.

FY2009 Annual Report. Genetic Distinction of Summer-Run and Winter-Run Steelhead in the Hood River, Oregon: Rapid Response Genotyping for Selecting Hatchery Broodstock. **Kevin S. Williamson, Lindsay Godfrey, Andrew P. Matala, and Denise K. Hawkins**.

Final Report. Genetic Population Structure of Redband Trout In the Malheur River Basin, Oregon. **Patrick DeHaan and Brice Adams**.

Cooke, S.J., M.R. Donaldson, S.G. Hinch, G.T. Crossin, D.A. Patterson, **K.C. Hanson**, K.K. English, J.M. Shrimpton, and A.P. Farrell. 2009. Is fishing selective for physiological and energetic characteristics in migratory adult sockeye salmon? Evolutionary Applications (Special Issue on Fisheries Induced Evolution). 2:299-311.

O'Toole, A.C., **K.C. Hanson**, and S.J. Cooke. 2009. The effect of shoreline recreational angling activities on aquatic and riparian habitat within an urban environment: Implications for conservation and management. Environmental Management. 44:324-334.

Hasler, C.T., C.D. Suski, **K.C. Hanson**, S.J. Cooke, D.P. Philipp, and B.L. Tufts. 2009. Effect of water temperature on laboratory swimming performance and natural activity levels of adult largemouth bass. Canadian Journal of Zoology. 87:589-596.

Henry, N.A., S.J. Cooke, and **K.C. Hanson**. 2009. Consequences of lure retention on the behaviour and physiology of free-swimming smallmouth bass during the reproductive period. Fisheries Research. 100:178-182.

“Connecting People to Nature Backpacks”

Susan Ostrand’s outreach project will be a featured activity at the Longview, WA library this fall. The project was funded through the Connecting People with Nature Working Group. Four backpacks will be available to check out for three weeks at a time.



USFWS: Susan Ostrand



USFWS: Susan Ostrand



USFWS: Susan Ostrand

HUMANE SOCIETY DAYCAMP

The City of Longview Parks and Recreation Department sponsored a summer day camp through the local Humane Society. AFTC was invited to give a presentation to 13 children ages 8-10. Ron Twibell and Susan Ostrand spoke about careers in science, Pacific salmon species, Pacific salmon life cycles, and played the “smell your way home” game. Each participant received a recyclable cloth bag filled with educational materials concerning Pacific salmon and other native species.