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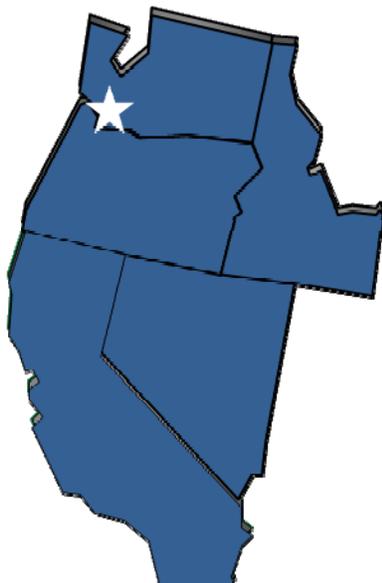
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## Toni Scholder Retires!

After more than a decade with the U.S. Fish and Wildlife Service, at Ridgefield NWR and at AFTC, Administrative Assistant Toni Scholder decided to take the plunge into the retirement waters! We held a luncheon, November 20, 2014, in honor of Toni and all that she's done to support us here at AFTC. There were salads (Toni's request), pizza, and a beautiful carrot cake (one of Toni's favorites). Everyone had a great time including John (Toni's husband) and Stacey (her daughter). We can't express how different AFTC is without Toni. We wish her all the best as she explores this latest adventure!



Photo credit: FWS.



Serving the Pacific and Pacific Southwest Regions



Photo credit: M. Hack.



Photo credit: M. Hack.



Toni's family joins in the festivities. Photo credit: M. Hack



Left to right: Art McCallum, Joel F. Scott, Tammy Gronbach, Judy Gordon, and Vince Bocci. Photo credit: M. Hack.

## *AFTC Honored by DoD for Extraordinary Support of Employees who serve in the National Guard and Reserve*

The Washington State Committee for Employer Support of the Guard and Reserve (ESGR), a Department of Defense (DoD) office, honored Center Director Judy Gordon with *Above and Beyond and Patriot Awards* in recognition of extraordinary support of 1st Lt. Scott Gronbach, an AFTC employee who is currently serving in the US Navy Reserve. Judy was honored with the Patriot Award in recognition of extraordinary support of Scott and his family. The *Above & Beyond Award* was presented for Judy's exceptional support during a U.S. Navy Reserve commitment exceeding 60 days. Judy was nominated for the awards by Scott who is deployed until next summer. "The Patriot Award was created by ESGR to publicly recognize individuals who provide outstanding patriotic support and cooperation to their employees, who like the citizen warriors before them, have answered their nation's call to serve," said Joel F. Scott, Washington State ESGR area chair. "Gordon was nominated for being highly supportive of the Navy Reserve employee and concerned for Gronbach's family. Supportive supervisors such as this are critical to maintaining the strength and readiness of the Nation's Guard and Reserve units."

### Staff:

#### *Administration & Facilities*

Judy Gordon, Center Director  
 Patty Crandell, Deputy Director  
 Vince Bocci, Administrative Officer  
 Mark Hack, IT Specialist  
 Scott Gronbach, Facilities Op Specialist  
 Jeff Poole, Water Treatment Plant Operator  
 Jim Lowell, Maintenance Worker

#### *Conservation Genetics*

Christian Smith, Regional Geneticist  
 Pat DeHaan, Conservation Geneticist  
 Matt Smith, Conservation Geneticist  
 Jennifer Von Bargaen, Lab Geneticist  
 Brice Adams, Fish Geneticist

#### *Physiology & Nutrition*

Kyle Hanson, Acting Regional Physiologist  
 Richard Glenn, Microbiologist  
 John Holmes, Fish Biologist  
 Ann Gannam, Regional Nutritionist  
 Ron Twibell, Fish Nutritionist  
 James Barron, Fish Biologist  
 Kelli Hawke, Biological Science Technician

#### *Quantitative Ecology & Technology*

Doug Peterson, Senior Scientist  
 Ben Kennedy, Fish Ecologist  
 Will Simpson, Fish Ecologist  
 Kurt Steinke, Electronics Engineer

# 2014 Hatchery Management Training

AFTC put on the FWS's 2014 Hatchery Management Training (HMT) in Richland, WA, and almost 60 FWS employees attended including 3 from the Pacific Southwest Region, 1 from the Southwest Region, and 2 from the Mountain Prairie Region. The objective of this annual training is to provide information for Fisheries Resources staff relating to hatchery and aquatic resource management as well as EEO and management training adapted to the needs of Fisheries managers. Registration for the training was made available through DOI Learn. The EEO Diversity Training titled, Improving Communication with Our Closest Partners, was very well received. Nathan Dexter (Klamath-Modoc), the Pacific Region's new Native American Liaison, spoke about improving communications with our tribal partners. A full day of training on the topic of Conservation Propaga-

tion Programs had speakers teaching about Policy, Necessary Information (Planning and Design), and Examples and Lessons Learned. Speakers included an Idaho Fish and Game geneticist, Chris Kozfkay and tribal biologists Ralph Lampman from the Yakama Nation FRMP and Thomas Chance from Lummi Natural Resources. Presentations were made by AFTC staff Christian Smith, Matt Smith and Ann Gannam, with Patty Crandell serving as moderator. A half day was spent on Hatchery Management KSAs and was primarily taught by NFH professionals.



Chris Kozfkay of Idaho Fish and Game presenting information on Snake River sockeye production program. Photo credit: J Gordon.

## 2014 HMT Agenda—In Brief

- Nathan Dexter. R1-External Affairs. *Working Effectively With Tribes.*
- Jim Craig Mid-Columbia River FRO. *Overview of the Conservation Propagation Program Framework.*
- Ken Ostrand. San Marcos ARC. *Conservation Hatchery Programs: Procedures and Pitfalls.*
- Matt Smith. AFTC. *Genetic Assessment for Klamath River Basin Lost River and Shortnose Suckers.*
- Erin Kuttel. Washington FWO. *Boundary Hydroelectric Project Native Salmonid Conservation Program.*
- Corene Jones. Lahontan NFHC. *Applied Conservation Genetics at the Lahontan NFHC.*
- Bill Brignon. Columbia River FPO. *Captive Rearing Environment Affects Bull Trout*
- Christian Smith. AFTC. *Genetic Composition of the Warm Springs River Chinook Salmon.*
- Ralph Lampman. Yakama Nation FRMP. *Research for Pacific Lamprey Recovery.*
- Ann Gannam. AFTC. *Nutrition's role in Conservation of Fish Species.*
- Chris Kozfkay. Idaho F&G. *Snake River Sockeye Salmon Hatchery Program.*
- Scott Hamelberg. Coleman NFHC. *Sacramento River Winter Chinook Salmon.*
- Thomas Chance. Lummi Natural Resources. *SF Nooksack Spring Chinook Program.*
- Matt Cooper. Mid-Columbia River FRO. *Winthrop NFH Alternative Rearing Programs.*
- Connie Keeler-Foster. Ennis NFH. *Amphibian Conservation Programs.*
- Amanda Smith. R1—External Affairs. *R1 Fisheries through the Eyes of Salmon Watch.*
- Adam Izbicki. Dworshak FC. *Hatchery Maintenance.*
- Caroline Peterschmidt. Eagle Creek NFH. *Helpful Hatchery Tips.*
- Connie Keeler-Foster. Ennis NFH. *Mitigating Hatchery Effluents.*
- Bob Turik. Hagerman NFH. *Recirculating Aquaculture System Update.*
- Mary Peters. Lower Columbia River FHC. *Resurgence of Bacterial Kidney Disease?*
- Judy Gordon & Denise Hawkins. AFTC & Washington FWO. *PBT sampling and the R1 Fisheries Program.*

## Reports:

Smith, C. T. and B. Adams. 2014. Population genetic structure of Spalding's Catchfly. AFTC Interim Report

Efficacy of electrofishing to reduce recruitment of common carp at Malheur National Wildlife Refuge 2014-2015. Calendar Year Report for Invasive Species Control Projects (R1 Small Grants), Refuges, USFWS Pacific Region. 5 pp.

Simpson, W. G. 2014. Fisheries monitoring system: Umatilla project facilities. Annual Abernathy Fish Technology Report for the Bureau of Reclamation. 42 pp.

Staff completed sections of AFTC's annual report on Natural Reproductive Success and Demographic Effects of Hatchery-Origin Steelhead in Abernathy Creek, Washington submitted to the Bonneville Power Administration.

# AFTC Program Highlights

## Physiology and Nutrition

As part of the BPA funded project "Natural reproductive success and demographic effects of hatchery-origin steelhead in Abernathy Creek, Washington", the Columbia River FPO tagging crew adipose fin clipped and coded wire tagged 14,700 juvenile steelhead that will be released in Spring 2015.

At the end of December adult returns totaled 450 coho salmon, 1 chum salmon, 13 steelhead trout, and 9 cutthroat trout. The steelhead were comprised of one natural-origin, five hatchery-origin, and seven out-of-basin strays. Coho salmon, cutthroat trout, and the natural-origin steelhead were released to spawn upstream. Hatchery-origin steelhead were retained for broodstock and the stray steelhead were euthanized. Adult returns will continue to be trapped until June.

Ron Twibell developed a study design and feeding protocols for a low lipid feeding trial with juvenile steelhead. In addition, Ron and Ann Gannam met with Loren Jensen, Bio-Oregon, to discuss the specific feed needs of the project and the ability of Bio-Oregon to supply the feed.

For fish feed quality control, five feed samples were analyzed each in November and December. As part of the routine analyses, the feeds from the hatcheries were checked for rancidity and results were sent to the hatcheries and the feed mills.

Richard Glenn updated the databases used for the chemical inventory and steelhead culture program at AFTC. The databases were updated to improve the user interface and increase ease of use.

Ann Gannam, Ron Twibell, James Barron,

and Kyle Hanson met with Bob Rose and Ralph Lampman from the Yakama Tribe to talk about future research on artificial propagation of lamprey. Bob and Ralph had a tour of Abernathy with a focus on the lamprey rearing facilities.

As part of continuing the lamprey work at Abernathy, the Physiology and Nutrition Program staff has started a study looking at the effects of ration level on water quality in lamprey rearing tanks. The study has been underway for three weeks and water quality differences have already been noted.



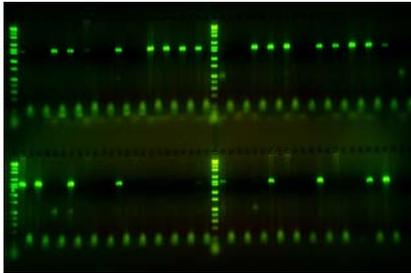
*Pacific lamprey rearing tanks. Photo credit: J. Barron.*

Ron Twibell analyzed the whole fish bodies for proximate and fatty acid composition for the Lost River sucker nutrition project.

Ann Gannam conducted safe winter driving training for the monthly AFTC safety training in November.

Ron Twibell, Ann Gannam, and James Barron had a conference call with Josh Rasmussen, USFWS Klamath Falls Fish and Wildlife Office, to discuss the Lost River sucker feed trial results and to plan new sucker nutrition work.

## AFTC Program Highlights— continued



Gel showing genetic sex marker in bull trout. Photo credit: J. Von Bargaen



Side view of Lost River sucker (a) and Short Nose sucker (b). Identifying these species and others in the Klamath Basin based on morphological characteristics presents a challenge to species recovery. AFTC is currently working with the Klamath River FWO to develop genetic markers for this task. Photo credit: D. Hewitt, USGS

### Conservation Genetics

Brice Adams and Kieslana Wing genotyped 6,000 Sacramento River Chinook salmon using 96 SNP markers. Results of this work will be used to evaluate natural populations of Chinook in the vicinity of Coleman NFH.

Jennifer Von Bargaen tested a genetic sex marker for bull trout. The marker is based on a functioning genetic sex marker in other salmonid species. If testing in bull trout is successful, the marker could improve our ability to manage and protect this species.

Jennifer Von Bargaen, Brice Adams and Kieslana Wing genotyped 890 Deschutes River steelhead as part of two collaborative studies with Oregon Department of Fish and Wildlife and the U.S. Forest Service. Our shared goal is to improve knowledge of the impacts of hatchery-origin fish on naturally-spawning populations.

Brice Adams and Jennifer Von Bargaen genotyped 2,207 steelhead from Abernathy Creek using 21 microsatellite loci. Matt Smith and Christian Smith performed population structure analysis and pedigree reconstruction on the resulting data. The results of this work were contributed to the 2014 report for a collaborative study between USFWS and BPA examining reproductive success of hatchery-origin steelhead in the wild.

Pat DeHaan worked with our partners at Oregon Department of Fish and Wildlife to develop

an agreement which will streamline the administrative requirements for the two agencies to work together. This agreement will make it easier for the two agencies to share resources to accomplish common goals.

Matt Smith assisted the Klamath Falls Fish and Wildlife Office with analysis and interpretation of genetic data for listed species of suckers from the Klamath Basin. A report describing the results of this analysis is in preparation.

### Quantitative Ecology and Technology

Will Simpson and Kurt Steinke developed an electrical delivery system designed to expose carp embryos to a three unique electrical waveforms with voltage gradients of up to 40 Volts/cm in high-conductivity water. Any vulnerability of embryos to electrical shock will be used to explore potential methods of population control for invasive Common Carp in Malheur National Wildlife Refuge.

Ben Kennedy entered and uploaded 5,105 lines of fish capture data to an online public database (ptagis.org) to be used by fisheries management agencies and research organizations in the Columbia River Basin.

Ben Kennedy completed a beta test of R1's Conservation Propagation Program Strategic Analysis Framework using Lake Ozette sockeye salmon.

### Wild Salmon Spawning Video!

Ben Kennedy's video of Chinook salmon spawning in Abernathy Creek was posted to the Pacific Region's Facebook page. Check it out at:

<https://www.facebook.com/video.php?v=800642923314626&set=vb.121246461254279&type=2&theater>

# AFTC Program Highlights — continued

Kurt Steinke advised the Burns-Paiute Tribe's Fishery Program on solar power sources for a remote PIT tag interrogation system.

## Administration

Judy Gordon met with Assistant Regional Director Roy Elicker and Deputy Assistant Regional Director Julie Collins, to finalize the draft regional guidance for parentage based tagging sampling at Pacific Region NFHs.

Judy Gordon and Patty Crandell participated in November and December Regional Fisheries Project Leader conference calls.

On Nov. 4, Tom Miewald, Realty and Re-

fuge Information, gave a presentation on the Pacific Region's Regional Information Management System and its implementation.

Yakima Nation fish biologists presented information on their research into lamprey artificial propagation and rearing on Nov. 6, 2014.

Local neighbors Dale and Donna Dimmick visited the Center to get a brief tour and a better understanding of hatchery operations on Nov 9, 2014.

Ben Kennedy provided the November Safety Training on bad weather driving.

Ann Gannam provided December Safety Training on winter weather preparedness.

Jim Lowell and Vince Bocci worked with a local contractor to have new wire run between buildings for the fire alarm system on November 25th. This has addressed the issue of random false alarms which were occurring on an almost daily basis.

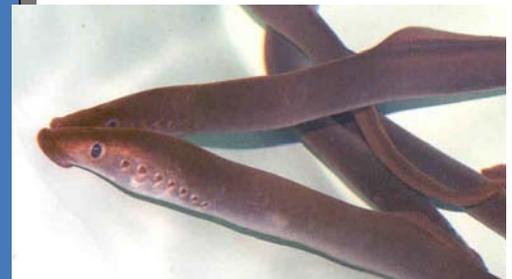
An emergency repair to the Main Lab Building furnace fuel supply line was conducted in December. Of course the furnace stopped working just as the region experienced unusually cold temperatures (<30° F for daily highs).

AFTC supervisors met with and completed their direct reports annual performance and individual development plans.

Patty Crandell finalized the CY15 statement of work and budget for the BPA funded Abernathy Creek Steelhead project with Jason Karnezis, BPA's Fish and Wildlife Project Manager, and submitted the 2014 4th QTR report.

## Meetings and Conferences

- Kyle Hanson attended the Deschutes Basin Spring Chinook Production coordination meeting in The Dalles, OR, November. The meeting brought together partners to discuss issues affecting salmon production facilities in the Deschutes River watershed.
- Quantitative Ecology & Technology hosted a visit from biologists with the NOAA-Fisheries group from Clatskanie, OR. They toured the facility and we discussed research and development of new PIT tag technologies.
- Ben Kennedy participated on multiple conferences calls with USFWS Mid-Columbia River Fishery Resource Office and NOAA Fisheries Manchester Research Station on survival analyses of the alternative steelhead rearing programs at Winthrop NFH.
- Doug Peterson participated in a workshop on the Impacts of Climate Change on Stream Temperature in Coldwater Fisheries in the Pacific Northwest.
- AFTC staff participated in the November Pacific Region all employee meeting via webex.
- Judy Gordon participated in the December Quilcene NFH Hatchery Evaluation Team Meeting conference call.
- Judy Gordon represented the Fisheries Program at the December meeting of the Pacific Region Surrogate Species Leadership Team.



Pacific lamprey adults. Photo credit: J. Gordon.

## Ongoing Projects

**Use of restriction-associated DNA sequence data for single nucleotide polymorphism detection in listed Devil's Hole pupfish.** *Management Need:* Develop genetic markers to monitor genetic diversity of a listed population held in refugia. *Partners:* Sacramento FWO; University of California, Davis.

**Population genetic structure of Spalding's catchfly: a terrestrial plant.** *Management Need:* Develop genetic markers and monitor genetic diversity of populations to identify management units and inform conservation planning. *Partners:* Idaho FWO; University of Montana.

**Genetic needs assessment for endangered Lost River and shortnose suckers of the Klamath River Basin, OR.** *Management Need:* Develop genetic markers to monitor genetic diversity of listed populations. *Partners:* Klamath Falls FWO; U.S. Geological Survey.

**Rapid response genetic analysis of threatened bull trout collected below dams in the Clark Fork River, MT.** *Management Need:* Provide data to inform upstream fish passage decisions for listed bull trout. *Partners:* Avista Corporation; Confederated Salish Kootenai Tribes; Idaho Fish and Game; Kalispel Tribe of Indians; Montana Fish Wildlife & Parks; Montana Ecological Services Field Office; Pend Oreille Public Utility District; Pennsylvania Power & Light, MT.

**Genetic identification of endangered winter-run Chinook salmon in the Sacramento River, CA.** *Management Need:* Rapid response broodstock identification for spawning of listed species. *Partners:* Livingston Stone NFH; Red Bluff FWO; NOAA Fisheries.

**Genetic species identification and population origin analysis for bull trout in Wallowa Lake and Wallowa River, OR.** *Management Need:* Identify species and/or population, determine within population genetic diversity, and determine level of hybridization with invasive brook trout. *Partners:* PacifiCorp Energy; Columbia River FPO.

**Strategic modeling of bull trout conservation actions in the lower Clark Fork River, MT.** *Management Need:* Determine impacts of hydroelectric facilities on listed bull trout populations and prioritize conservation actions. *Partners:* Avista Corporation; Montana Fish Wildlife & Parks; Montana Ecological Services Field Office; Idaho Fish and Game.

**Movement patterns of Oregon chub.** *Management Need:* Determine movement patterns and gene flow among populations of a recently delisted species using genetic data. *Partners:* Oregon Department of Fish & Wildlife, U.S. Army Corps of Engineers.

**Suppression of common carp in Malheur Lake using electrofishing to target eggs and embryos.** *Management Need:* Determine the feasibility of using electrofishing to kill eggs and embryos for control of invasive common carp in Malheur Lake. *Partner:* Malheur NWR.

**Diet development for Lost River and short nose suckers in the Klamath River Basin.** *Management Need:* Determine dietary needs of listed populations to assist in recovery. *Partners:* Klamath Tribes, Klamath Falls FWO, California/Nevada FHC.

**Development of diets and rearing techniques for the culture of Pacific lamprey.** *Management Need:* Assist Tribal partners in developing methods for the artificial propagation of Pacific lamprey, a species of concern. *Partners:* Yakama Nation; Fishery Resources Program via Fisheries Operations and Need System (FONS).

**Assessing the effects of multiple tagging methods on Pacific lamprey ammocoetes.** *Management Need:* Assist Tribal partners in developing methods for the monitoring and evaluation of this species of concern. *Partners:* Yakama Nation; Fishery Resources Program via FONS.

**The physiological response of white sturgeon to**

## Ongoing Projects—continued

Determine if the stress from catch and release angling is detrimental to survival of white sturgeon, a species of concern. *Partners:* Dalhousie University; Carleton University.

**Pacific Region's Fish Feed Quality Control (FFQC) Program.** The FFQC Program, the only one of its kind in the FWS, provides quarterly monitoring of the quality of the commercially produced fish feeds used at Pacific and Pacific Southwest Regions' NFHs. Information is compiled on an annual basis and used in the development of the Pacific Region fish feed contract. *Management Need:* Conduct quality assurance/quality control of commercially produced fish feeds used at Pacific and Pacific Southwest Regions' NFHs. *Partners:* Pacific and Pacific Southwest Region's NFHs, Oregon, Washington, Idaho, and Tribal fish hatcheries.

**Genetic profiles of broodstock at Pacific Region National Fish Hatcheries.** *Management Need:* Determine impacts of hatchery origin fish (HOR) on naturally occurring fish (NOR) and monitor the effects of aquaculture practices on HOR populations. *Partners:* Pacific Region NFHs; Fishery Resources Program via FONS.

**Antenna design for the Biomark IS1001 PIT tag reader.** *Management Need:* Provide expert level engineering and

technical assistance to partners monitoring species of interest using new technologies while reducing biologist time spent in design and troubleshooting. *Partner:* NOAA Fisheries.

**Natural reproductive success and demographic effects of hatchery-origin steelhead in Abernathy Creek, WA.** *Management Need:* Provide information to help managers minimize differences between NOR and HOR fish. *Partners:* Bonneville Power Administration; Washington Department of Fish and Wildlife.

**Climate change vulnerability assessments of Pacific Region National Fish Hatcheries.** *Management Need:* An understanding of the anticipated habitat changes under different climate change scenarios provides managers with information to proactively respond to these conditions and their impact on NFHs. *Partners:* Pacific Region NFHs; Mid-Columbia River FRO; Fishery Resources Program via FONS.

**Development of genetic markers associated with smoltification in steelhead and salmon.** *Management Need:* Identify genetic markers associated with downstream migration to provide managers with information to proactively manage early onset smolting levels. *Partners:* Fishery Resources Program via FONS.



### **AFTC Staff Participates in Annual Northwest Fish Culture Conference**

Ron Twibell, Ann Gannam, James Barron, John Holmes and Kelli Hawke gave presentations regarding research conducted at AFTC at the Northwest Fish Culture Conference in Pendleton, OR, December 2-4, 2014. The presentations given were:

Ron Twibell - *Evaluation of lipid sources in diets fed to the endangered Lost River sucker.*

Ann Gannam - *Evaluation of alternative feeds for Pacific salmon*

James Barron - *Effects of ammocoete stocking density and ration size on the growth and survival of Pacific lamprey.*

John Holmes - *Changes in phenotypic and genetic characteristics of natural origin steelhead in a supplemented steelhead population.*

Kelli Hawke - *Evaluation of short term saltwater immersion to alleviate handling stress in steelhead trout (poster).*



8 *Juvenile suckers. Photo credit: J Barron.*