



**In this Issue:**

<b>New Volunteer</b>	<b>1</b>
<b>Program Highlights</b>	<b>2</b>
<b>Workshops/Conferences/Meetings</b>	<b>7</b>
<b>Reports and Publications</b>	<b>9</b>
<b>Outreach</b>	<b>10</b>
<b>Employee Spotlight</b>	<b>12</b>

**Director's Greeting....**

Volunteers can bring a wealth of experience and enthusiasm to our conservation activities. Here at AFTC we have been very lucky in having a variety of volunteers work with us over the last decade. Some have helped with field sampling, while others assisted with facilities maintenance. We've even had volunteer help with administrative support. We would not have been able, nor could we continue, to meet the mission without their help! Thanks to all past, present, and future volunteers!

**Staff:**

**Administration/Facilities:**

- 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
- Scott Gronbach, Facilities Op Specialist
- Jeff Poole, Water Treatment Plant Operator

**Nutrition:**

- Ann Gannam, Regional Nutritionist
- Ron Twibell, Fish Nutritionist
- Nathan Hyde, Biological Technician
- Heidi Hill, Fish Nutritionist
- James Barron, Biologist

**Conservation Genetics:**

- Denise Hawkins, Regional Geneticist
- Christian Smith, Conservation Geneticist
- Pat DeHaan, Conservation Geneticist
- Brice Adams, Biological Technician
- Matt Smith, Fish Geneticist
- Jennifer Von Bargaen, Lab Geneticist

**Ecological Physiology:**

- Chris Taylor, 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

**Modeling and Management Decision Support:**

- Doug Peterson, Senior Scientist

# New AFTC Volunteer



Kathrin Dodds joins AFTC staff as a volunteer. Kathrin brings extensive professional librarian skills to the task of constructing comprehensive, searchable, electronic databases for AFTC's peer-reviewed and gray literature publications. Welcome Kathrin, we're glad you're here!

# Program Highlights....

## Nutrition

The Nutrition Program conducted three feed making projects. In cooperation with Bozeman FTC (BFTC), we supplied feed to Oregon State University (OSU) researchers for their surrogate Chinook salmon project. BFTC made the feed and AFTC crumbled it to the required size, top-coated with fish oil and shipped it to Corvallis, OR. We also made feed for one of our partners at West Virginia State University, Dr. Jonathan Eya. He is looking at gene expression in fish fed alternative ingredients. We made feed for the Grant Co. PUD low phosphorus feed project that we are conducting here at AFTC.

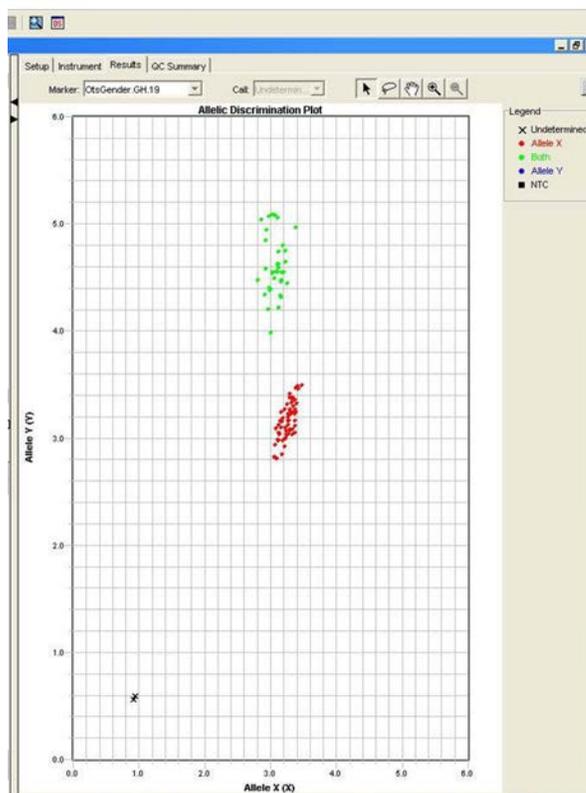
AFTC was contacted to check the quality of the feeds used at the Uvalde NFH in the Southwest Region. They were having some fish health issues and wanted to eliminate the feed as a possible cause. We checked three diets that they use for their razorback suckers and channel catfish.

The Nutrition Program analyzed 16 feed samples for fish feed quality control including five samples taken at AFTC in March and April. As part of the routine analyses, all feeds from the hatcheries were checked for rancidity. Ann Gannam wrote the feed memos and then contacted the feed mills when necessary. In addition, we analyzed five feeds used in the Low Phosphorus Feed trial for proximate composition and phosphorus content. The Fish Feed Quality Control quarterly report written by Ron Twibell was sent out this month to the NFHs and FHCs in the Pacific and Pacific Southwest Regions and state partners.

## Conservation Genetics

Brice Adams began bull trout rapid response analysis this month. Genetic information is used to provide information on population of origin for adult bull trout captured below Cabinet Gorge Dam on the Clark Fork River. This information is used to assist in passage decisions and is funded by Avista Corp.

Jennifer Von Bargaen worked on the development of a sex identification SNP (single nucleotide polymorphism) marker that will be incorporated into the annual rapid response protocol for the identification of potential broodstock for winter-run Chinook salmon at Livingston Stone NFH.



USFWS: J. Von Bargaen

SNP (single nucleotide polymorphism) sex identification marker used in the selection of potential winter-run Chinook salmon broodstock at Livingston Stone NFH. Red dots are females and green dots are males.

## Program Highlights cont....

### Conservation Genetics....cont

Jennifer Von Bargaen completed data generation for Chinook salmon from Carson, Little White, and Winthrop NFH's. This data will be incorporated into genetic profiles for these programs as part of a FWS Fisheries Operations and Needs System (FONS) funded project designed to provide standardized genetic data for NFH broodstock.

Jennifer Von Bargaen and Christian Smith performed the first nine rapid-response events for winter-run Chinook salmon in the Sacramento River. This analysis has been conducted annually at AFTC since 2004 using microsatellite markers and is being conducted with SNP markers for the first time this year. Use of the SNP markers, which offer improved resolution between genetic runs of Chinook salmon, was made possible through a standardization and data-sharing collaboration with NOAA Fisheries.

Brice Adams has genotyped 772 samples of Olympic mudminnows using newly designed primers. The samples were collected from throughout the species' range by Roger Tabor of Washington FWO (WFWO).

Jennifer Von Bargaen participated in a webcast training on micro RNA (miRNA) hosted by Applied Biosystems, Inc. as a follow up to the Gene Expression course.

April 17<sup>th</sup> found most of the Conservation Genetics Program (unfortunately Denise had to miss this event!) in the lab making up new genetic sample collection kits. These kits are sent out to our partners to be used for the collection of new fin clips that will provide important data for upcoming projects.

### Conservation Genetics....cont

Christian Smith and Christopher Taylor participated in the Hatchery Evaluation Team (HET) meeting for Makah NFH. After the meeting, Caroline Peterschmidt, Project Leader at Makah NFH, led several members of the team to the rotary screw trap on the Sooes River. This trap is being used to monitor natural productivity of the river, and the information will be incorporated into the operation of Makah NFH.



Rotary screw trap on the Sooes River, WA  
USFWS: C. Smith



USFWS: C. Smith



USFWS: C. Smith

Two different ages of coho salmon trapped in the rotary screw trap on the Sooes River, WA. Information on the populations of juvenile coho salmon and steelhead being produced in the Sooes River will be used by the FWS to better understand the role of Makah NFH in this system.

### Ecological Physiology

Funding was obtained to build passive integrated transponder (PIT) tag systems to assess whether drop structures at a kayak park on the Truckee River near Sparks, NV impede the passage of endangered Lahontan cutthroat trout. Kurt Steinke and Jerone Anderson designed and built the systems for JBR Environmental Consultants, Inc.

Will Simpson, Chris Taylor, Kyle Hanson, and Kurt Steinke participated in a conference call with Chet Sater from Bureau of Reclamation (BOR) to discuss continuing assistance with the monitoring of steelhead entrainment into irrigation canals in the Umatilla River Basin.

Will Simpson met with the Pika Watch workgroup at the Oregon Zoo to assist in the development of survey protocols for youth citizen scientists examining the geographic distribution of American pikas. Extirpation of pikas has been linked to climatic trends in parts of their geographic range.

Jerone Anderson, Will Simpson, Kurt Steinke and Chris Taylor built, tested and installed new antennas at the Maxwell headgate and Maxwell Screen sites on the Umatilla River for the BOR.

Richard Glenn is collaborating with Scott LaPatra at Clear Springs Foods, Inc. on a project using rosemary oil on fish feed to control coldwater disease (*Flavobacterium psychrophilum*).

The Ecological Physiology Program assisted John Holmes and Jeff McLaren in the first hatchery steelhead release of the year.

### Ecological Physiology cont....

Will Simpson consulted with the CA Department of Fish and Game and private fish passage engineers on the monitoring of fish entrainment at small diversions in CA.

Chris Taylor participated in the Pacific Lamprey Conservation Team conference calls.

Will Simpson, Kurt Steinke, and Kyle Hanson installed solar panels to power a PIT tag site at AB3 in Abernathy Creek.

Jerone Anderson developed an inexpensive Arduino-based data logger for the Destron-Fearing multiplexers; the data logger uses SD cards and conserves power.

Screw trap operations were started for the year. This involves collaboration with WA Department of Fish & Wildlife (WDFW) state biologists, daily checking of the screw trap and sampling from out-migrating steelhead smolts.

Twelve stationary PIT tag antennas were installed at the mouth of Abernathy Creek and adjacent to AFTC. These are used to monitor the migration behavior of steelhead smolts. Movements can be tracked at: [http://www.ptocentral.org/dbaccess/InStrmDtctn/InStrmDtctn\\_query.html](http://www.ptocentral.org/dbaccess/InStrmDtctn/InStrmDtctn_query.html)

Kyle Hanson coordinated with biologists from WDFW and the Cowlitz Indian Tribe to develop methods for counting and identifying eulachon eggs and larvae collected from plankton nets and sediment cores.

## Program Highlights cont....

### Modeling and Management Decision Support

Doug Peterson reviewed applications and conducted interviews for a 6-month internship position to provide geographic information system (GIS) support for the Modeling Program and the other research programs at AFTC. The internship program is being coordinated through the Student Conservation Association (SCA).

### Administration/Facilities

Pacific Region Assistant Regional Director Fishery Resources Mike Carrier participated in the March AFTC senior staff meeting. Mike provided staff with updates on current Pacific RO activities, graciously answered questions and met with the employees in each Applied Research Program.



Mike Carrier attends the March AFTC senior staff meeting.  
USFWS

Judy Gordon participated in the Fishery Resources Program's overview briefing for Gaby Chavarria, Science Advisor to the Director.

### Administration/Facilities cont....

Judy Gordon attended the 3<sup>rd</sup> Annual Lake Sammamish Kokanee Fry Release, co-hosted by the WFWO and the WDFW. Pacific Regional Director Robyn Thorson, Region 9 Assistant Director NWRS Jim Kurth, WFWO Fisheries Division Manager Brad Thompson, the Snoqualmie Tribe and a host of others showcased the collaborative efforts to restore kokanee salmon to their former habitat in the streams flowing into Lake Sammamish, WA.



Region 9 Assistant Director NWRS, Jim Kurth, releases Kokanee fry into Laughing Jacob Creek.

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AD Refuges, Jim Kurth, and RD Robyn Thorson listen to Snoqualmie Tribal member.

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### Administration/Facilities cont....

John Baugher and Jason Karnezis, Bonneville Power Administration (BPA) COTRs visited. Jason will be taking John's place as COTR for the BPA funded Abernathy Creek steelhead reproductive success project. John introduced Jason and the AFTC staff gave Jason an introduction to the objectives and tasks associated with the research.

Adult steelhead returns for the BPA funded project "Natural Reproductive Success and Demographic Effects of Hatchery-Origin Steelhead in Abernathy Creek" totaled 345 steelhead at the end of April. Forty one natural origin steelhead, 173 hatchery origin steelhead, and 131 out of basin stray steelhead. Capture of returning adult steelhead will continue into June.

In April the first of three juvenile steelhead releases occurred. Approximately 7,000 were released into Abernathy Creek to start their migration to the sea.

Safety was at the forefront of most of facilities projects on station. The sprinkler system in the quarters unit was certified safe, the fire and smoke alarms were tested, and 64 station fire extinguishers were given their annual inspections.

AFTC employees received safety training on the electric weir including how to turn it off during an emergency and where the electric current resides in the creek.

### Administration/Facilities cont....

Facilities staff conducted a Hazmat disposal offload through Cowlitz Co. We disposed of nearly 100 gallons of paint, 14 gallons of flammable liquids, and over 50 aerosol cans that had expired, in many cases, years ago. We also recycled over 2 tons of excess metal and 300 pounds of cardboard creating much needed space throughout the facility.

New stainless steel screens were installed in the pollution abatement pond. These new screens have been re-designed to allow for better water flow, reduced cleaning requirements, and will be less corrosive than their aluminum predecessors. These upgrades will keep us from having to enter a confined space every month to clean them.

Speaking of cleaning, the facilities staff utilized a special moss killer on the main lab roof that is not harmful to aquatic species. Now, the roof looks almost as good as it did 20 years ago! Additionally, the grounds and flower beds received a makeover this month in preparation for spring and the 2012 Pollinator Challenge.



Jim Lowell pressure washing the main lab roof.

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## ***Workshops, Conferences, and Meetings....***

### ***Nutrition:***

- Ron Twibell and James Barron attended the Columbia River Gorge NFHC HET meeting.
- Ann Gannam participated on a conference call with OSU researchers concerning diets for their surrogate Chinook project. Carl Schreck, David Noakes, Eric Billman, Julia Unrein and Rob Chitwood from OSU participated along with Rick Barrows, US Department of Agriculture, ARS, and Wendy Sealey and Gibson Gaylord, BFTC.
- Ron Twibell and Ann Gannam participated in a conference call with OSU researchers concerning sampling and analysis for the fish in their first feeding trial.

### ***Conservation Genetics:***

- Denise Hawkins provided a summary of the environmental DNA (eDNA) partner coordination conference call hosted by FWS as part of the monthly FTC call.
- Denise Hawkins and Christian Smith attended the 5th Annual Klickitat & White Salmon Rivers (Columbia Gorge) Fisheries and Watershed Science Conference.
- Denise Hawkins and Patty Crandell participated in a Fisheries Management Team teleconference to discuss potential funding for incorporating the use of eDNA in the National Asian Carp Management and Control Plan.
- Pat DeHaan and Denise Hawkins joined with staff from US Forest Service (USFS), Bureau of Land Management (BLM), OR Department of Fish and Wildlife (ODFW), and Nevada Department of Wildlife (NDOW) to discuss the McDermitt Creek Lahontan cutthroat trout Metapopulation Restoration project.
- Denise Hawkins met with Caren Goldberg, Research Scientist University of ID, to observe their New Zealand mudsnail eDNA procedures and to discuss potential future collaboration.
- Matt Smith and Pat DeHaan attended a presentation by Tracy Bowerman titled: "A multi-scale investigation of factors limiting bull trout survival and persistence" hosted by Columbia River FPO.
- Denise Hawkins met with partners from King County, WA, WDFW, and WFWO at a meeting hosted by Roger Tabor (WFWO) to discuss upcoming monitoring of returning Lake Sammamish kokanee. This year marks the first return of adults from the supplementation program.

### ***Ecological Physiology:***

- Chris Taylor attended the Climate Savvy Workshop at the Pacific RO in Portland.
- Chris Taylor and Ben Kennedy attended Smith Root Inc.'s electrofishing safety training workshop.
- Ben Kennedy presented "Ecological differences of juvenile steelhead produced by natural origin and hatchery origin adults spawning in the wild" at the 2012 annual meeting of the Western Division of the American Fisheries Society.
- Chris Taylor and Ben Kennedy met with folks from the WDFW Conservation Corps, and the Columbia-Pacific Resource Conservation and Economic Development District to brainstorm ideas on collaborative research projects.

## ***Workshops, Conferences, and Meetings cont....***

### ***Modeling and Management Decision Support:***

- Doug Peterson attended webinar presentations by Dr. Tim Beechie, NOAA Fisheries, titled "Vulnerability Assessment for Pacific NW Salmonids," and Dr. Jason Dunham, U.S. Geological Survey (USGS) Forest and Rangeland Ecosystem Science Center, titled "Climate Impacts on Streams and Coldwater Fishes in the West". Both webinars were held as part of the FWS sponsored Climate Savvy Aquatic Restoration Workshop, in Portland, OR.
- Doug Peterson participated in conference calls with staff from AFTC, Winthrop NFH, and Regional Office to discuss progress on the Climate Change and National Fish Hatchery Vulnerability Assessment project.
- Doug Peterson attended a webinar presentation by Dr. Camille Parmesan, University of TX at Austin, titled "Conservation in a Rapidly Changing Climate: Problems, Pitfalls, and Proactive Management".
- Doug Peterson attended a brown bag seminar at the Columbia River FPO given by Tracy Bowerman, Ph.D. student at Utah State University, titled "A multi-scale investigation of factors limiting bull trout survival and persistence".
- Doug Peterson attended a webinar presentation by Dr. Claudia Tebaldi from Climate Central, titled "Modeling Sea Level Rise Impacts on Storm Surges Along the Pacific Northwest Coast".
- Doug Peterson attended a webinar presentation by Dr. David Weins, USGS, titled "Competitive Interactions and Resource Partitioning between Northern Spotted Owls and Barred Owls in Western Oregon".

### ***Administration/Facilities:***

- Judy Gordon, Chris Taylor, Kyle Hanson, and Doug Peterson attended the quarterly Advisory Committee meeting at the OHRC in Alsea, OR. Kyle Hanson and Doug Peterson presented their most recent findings from their climate change vulnerability assessment for Winthrop NFH. This was Judy Gordon's final meeting as the federal representative on the Advisory Committee.
- Judy Gordon participated in the Fishery Resources mini-project leaders' meeting held at Nisqually NWR, WA, and, with Patty Crandell attended the mini-project leaders' meeting in Vancouver, WA. Patty Crandell attended the third and final mini-Project Leaders' Meeting in Boise, ID.
- Judy Gordon participated in discussions on the future role of Eagle Creek NFH in the Pacific RO.
- Patty Crandell attended a Pacific Region Climate Change Board meeting in the Pacific RO.
- Patty Crandell, Doug Peterson, and Kyle Hanson participated in several Climate Change Planning Team meetings via phone. The meetings were held to discuss status of the vulnerability assessment modeling exercise, to assign tasks, and to finalize an outline for distribution.
- Judy Gordon and Patty Crandell participated in the monthly Fishery Resources teleconference call.

## **Nutrition:**

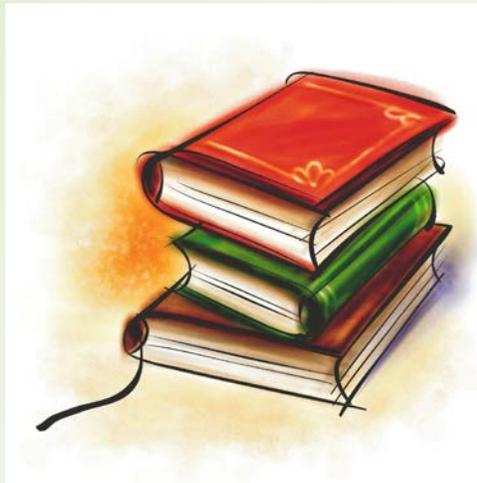
Beaulaurier, J., N. Bickford, J. L. Gregg, C. A. Grady, A. L. Gannam, J. R. Winton and P.K. Hershberger. 2012. Susceptibility of Pacific herring to viral hemorrhagic septicemia is influenced by diet. *Journal of Aquatic Animal Health* 24: 43-48.

Ostrand, S. L., R. A. Glenn, A. L. Gannam and K. C. Hanson. 2012. Inhibitory effects of rosemary oil on the *in vitro* growth of six common finfish pathogens. *North American Journal of Aquaculture* 74: 230-234.

## **Conservation Genetics:**

P. J. Braaten, D. B. Fuller, R. D. Lott, T. M. Haddix, L. D. Holte, R. H. Wilson, M. L. Bartron, J. A. Kalie, P. W. DeHaan, W. R. Ardren, R. J. Holm, and M. E. Jaeger. 2012. Natural growth and diet of known-age pallid sturgeon (*Scaphirhynchus albus*) early life stages in the upper Missouri River basin, Montana and North Dakota. *J. Appl. Ichthyol.* (2012), 1–9.

Patrick W. DeHaan, Paul D. Scheerer, Ron Rhew and William R. Ardren (2012): Analyses of Genetic Variation in Populations of Oregon Chub, a Threatened Floodplain Minnow in a Highly Altered Environment, *Transactions of the American Fisheries Society*, 141:2, 533-549.



## MESA Day

Heidi Hill attended Mathematics Engineering Science Achievement (MESA) Day at Clark College. Heidi judged the academic displays of middle and high school students' describing their wind energy experiments. The displays were evaluated based on technical explanations and data presentation; scaled drawing and cost/labor summary; form, key features, and organization; abstract; and creativity. More than 20 displays were judged.



Heidi Hill and Carol Hu (Clark College) judge an academic display board during MESA Day.  
*Hannah Beth McDonald*

## Mt. Hood Community College



Judy Gordon speaking to the students during their annual visit.  
*USFWS*

The students of Mt. Hood Community College's Fisheries Technology course made their annual site visit to AFTC as part of the spring curriculum. The visit demonstrates to future fisheries professionals how science is conducted in support of fishery resources in wild and hatchery environments. Judy Gordon provided a tour of the facility and answered questions from 16 students.

## Pacific Region Archery Demonstration

Doug Peterson volunteered at the Pacific Region archery demonstration at the Salmon Creek Regional Park. The archery demonstration commemorated the 75th anniversary of the Wildlife and Sport Fish Restoration Program (WSFR), and was held in conjunction with the WDFW's Kline Kids Fishing Day.

### **Earth Day**



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Ann Gannam staffed the FWS Earth Day booth at the Longview Earth Day event. The event was once again a great success. At least 200 children plus their parents visited the booth, many with questions and comments. The kids enjoyed the new pollinator game.

### **Kessler Elementary School Career Day**

Ann Gannam attended the Kessler Elementary School Career Day. She set up a booth, provided posters and pamphlets for each class and told the children what we do at AFTC. She talked with the children about the Pacific salmon's life history and what we can do to help the salmon. Using the cloth model of an adult salmon, the children saw the basic anatomy of the fish and they learned the five Pacific salmon species known in the Pacific Northwest using the five digits of their hand as a mnemonic device.



Ann Gannam at Kessler Career Day  
Allen Warner

## Employee Spotlight....



Jeff Poole  
Administration/Facilities  
Water Treatment Plant Operator

Jeff was born and raised in Oregon. He graduated from Mt. Hood Community College with an A.S. in fisheries technologies and Portland State University with a B.S. in business administration.

Jeff has worked in sales, construction and for a hunting outfitter. For the past 29 years, he has worked for U.S Fish and Wildlife Service with most of that time at AFTC. As part of his duties, Jeff also works with the Nutrition Program making experimental fish food.

Jeff enjoys hunting, fishing, camping, sports and family gatherings.



Jeff and friends steelhead fishing on the Columbia River, WA  
*R. Twibell*