



Jim Herring, Cherokee National Forest Fisheries Program Leader with a nice brown trout; a fish biologist on holiday!

FishTales[©]

A Weekly Peek at Fisheries, Aquatic Ecology and Watersheds in the

USDA FOREST SERVICE

January 3 - January 7, 2005

Dave Cross -

I reviewed proposed performance accountability measures in preparation for a meeting of our staff and Region 10 Director Winni Kessler this Friday. This week I also met with representatives of other inter-deputy staffs on the agency's Strategic Communication Plan for invasive species. We continued working with our partners on a number of topics this week, including BBN and preparations for this year's **Rise to the Future** reception. We have reopened nominations in three **Rise to the Future** categories – **RecFish, Line Officer and Mentor**. We would appreciate your consideration of additional nominations in these categories. Please submit them by the end of January. A conference call with Regional Program Leaders was held on Thursday.

I found the following paper of some interest and highlight it here for your consideration for potential reading and application.

Assessment of net change of productive capacity of fish habitats: the role of uncertainty and complexity in decision making. Charles K. Minns and James E. Moore; Can. J. Fish. Aquat. Sci./J. Can. Sci. Halieut. Aquat. 60(1): 100-116 (2003).

Abstract: Canada's fish habitat management is guided by the principle of "no net loss of the productive capacity of fish habitat" (NNL). Many development proposals are assessed using habitat information alone, rather than fish data. Because fish–habitat linkages are often obscured by uncertainty, uncertainty must be factored into NNL assessments. Using a quantitative framework for assessing NNL and lake habitats as a context, the implications of uncertainty for decision making are examined. The overall behavior of a net change equation given uncertainty is explored using Monte Carlo simulation. Case studies from Great Lakes development projects are examined using interval analysis. The results indicate that uncertainty, even when large, can be incorporated into assessments. This has important implications for the habitat management based on NNL. First, schemas to specify relative levels of uncertainty using simple habitat classifications can support robust decision making. Second, attaining NNL requires greater emphasis on minimizing habitat loss and creating new areas to compensate for losses elsewhere and less on detailing small incremental changes in modified habitats where the fish response is difficult to demonstrate. Third, the moderate to high levels of uncertainty in fish–habitat linkages require that created compensation is at least twice the losses to reasonably ensure NNL.

Bill Lorenz -

The Washington Office Wildlife, Fish Watershed and Rare Plants staff met with Alaska Region Watershed, Fish, Ecology, Wildlife and Subsistence Director Wini Kessler to review proposed performance accountability measures for those programs. I also reviewed appeals to the National Forests of Alabama land management plan revision, prepared a summary of 2004 restoration accomplishments in the Klamath River Basin as part of a multi-agency accomplishment report, and continued work on the Aquatic Ecological Unit Inventory Technical Guide.

Nominations are due January 14 for the Forest Service Jack Adams, Lloyd W. Swift Sr., and Karl Urban Awards; and for two joint Forest Service and Bureau of Land Management awards for wildlife, fisheries and native plant conservation accomplishment. The joint awards are the Conservation Partner and Conservation Project awards. I have received just one nomination each for the Carl Urban Award, and one for the Jack Adams Award. The five awards will be presented by the Chief and BLM Director at the 2005 North American Wildlife and Natural Resources Conference.

News from Around the Country

- **Exceptional Forest Service recreational fishing web site**
The Cordova Ranger District of the Chugach National Forest has constructed an outstanding fish web page. This well thought out site is packed full of great information for the public including information on where to and how to fish. The district fish staff had the interests of their public in mind when they created this site.

<http://www.fs.fed.us/r10/chugach/cordova/programs/fish/>

- **Wenatchee River Salmon Fest wins award from the Washington Festival and Events Association**
The Washington State Festivals and Events Association selected Wenatchee's 14th Annual Salmon Fest for the state's 2004 Summit Gold Award for Community Service-Environmental Program, the 2004 Silver Award for Community Service-Children's Program, and the 2004 Bronze Award for a Wenatchee World Newspaper insert. The Wenatchee River Salmon Festival is a four-day natural resource education event held each fall to celebrate the return of the salmon to the Wenatchee River. The Festival is held on the grounds of the Leavenworth Fish Hatchery, located at the mouth of the scenic Icicle Canyon near Leavenworth, Washington. The festival and is hosted by the Okanogan and Wenatchee National Forests, and the Leavenworth National Fish Hatchery of the US Fish and Wildlife Service.



Frank Fish gets plenty of attention!

- Past awards won by the Salmon Fest include:
- 2003 National Environmental Leadership Award
U.S. Fish and Wildlife Service
 - 2002 "Sense of Wonder Award"
U.S. Fish and Wildlife Service
...connecting kids with nature
 - 2001 Best Children's Program
Best Environmental Program
Washington Festivals and Events Association
 - 2000 "Women in Natural Resources"
Feature story in national magazine, highlighting Salmon Fest organizers

- 1999 Pinnacle Award -- International award for
"Best Environmental Education"
International Festivals and Events Association
- 1998 Carl L. Sullivan Award -- "Most Outstanding Conservation Education
Event in the United States"
American Fisheries Society International Convention, Hartford,
Connecticut
Summit Award for Best Environmental Education
Washington Festivals and Events Association
- 1997 Caring for the Land - "Excellence in Team Collaboration and a Standard
of Education Unmatched in the Region"
Pacific Northwest Region 6, USDA Forest Service
Summit Award for Environmental Education
Washington Festivals and Events Association
- 1996 Conservationist of the Year
Trout Unlimited
Summit Award for Environmental Education
Washington Festivals and Events Association
- 1995 Academic Excellence Award
Leavenworth Kiwanis Club
- 1994 Volunteer Organization of the Year
American Fisheries Society
- 1993 Outstanding Conservation Education
Environmental Education Association of Washington (EEAW)

- **VIRGINIA TECH'S NATURAL RESOURCES PROGRAM ADDRESSES
COMING FEDERAL STAFF SHORTAGE**

BLACKSBURG - The 35 to 50 percent projection of government employees (1.6 million full-time workers) in the natural resources profession retiring within the next several years has prompted Virginia Tech's College of Natural Resources to focus its Northern Virginia program to meet the upcoming educational needs.

"In addition to a major expansion of distance learning offerings, we are starting a master's in natural resources to meet the technical brain drain quickly coming with many retirements in the nation's capital, which is the headquarters for federal and many non-profit natural resource agencies," said David Trauger, director of Virginia Tech's natural resources program at the Northern Virginia campus.

"The timing is perfect to grow our program," he explained, "and students are recognizing the local opportunities that are available. Our hallmark is flexibility, so we can tailor the program to meet specific needs of the mid-career student."

Trauger, who is in his third year as program director, said; "Our courses focus on sustainable development in urban environments and sustainable management of natural resources on adjacent rural lands." The program offers a Master of Forestry and now a Master of Natural Resources, as well as a Certificate of Graduate Study in Natural Resources, which is often the best way for a working professional to start.

The program has grown rapidly since its establishment in 1997 and is expected to reach 150 soon. Trauger sees the Northern Virginia campus as very different from the Blacksburg campus. "We have some students who have just received their undergraduate degree, but most of our students are older adults who have either been working in or are moving over into the profession," he said.

Trauger works with each student individually to design a course plan to meet his or her needs and expectations. "Offering this program in the capital region where it is needed makes a difference in teaching and research," adds Trauger. The D.C. area continues to be one of the most rapidly developing areas in the United States.

"A large percentage of these students will be transitioning from other disciplines, which is good for the profession. Conservation issues are complex and finding solutions will require all disciplines," Trauger said, who spent 32 years with the Department of the Interior's U.S. Geological Survey and Fish and Wildlife Service.

Teaching, research, and outreach are the main interests of the program with a focus on sustainable natural resources in rapidly urbanizing environments. Courses address the complexities of ecological issues related to land and natural resources in rural-urban transitional environments in Northern Virginia. The Natural Resources Program is located in close proximity with the related Virginia Tech programs in urban and regional planning, landscape architecture, and public administration and policy.

"A new partnership with the [USDA's Forest Service](#) and Virginia Tech's [College of Natural Resources](#) and its [Institute for Distance and Distributed Learning](#) will have global impact on developing the next generation of natural resources leaders," Trauger said. "In the next three years, we will have the best professors and courses in the nation on the distance learning website."

The program at Virginia Tech's College of Natural Resources has been recognized by peers as among the top five. Areas of studies include environmental resource management; fisheries and wildlife sciences; forestry; geospatial and environmental analysis; natural resource recreation; urban forestry; wood science and forest products; geography; and international development.

For more information on the conference or and the Virginia Tech graduate program contact Dr. David Trauger at dtrauger@vt.edu or (703) 706-8130.

- **NCSE Releases Report on *Water for a Sustainable and Secure Future***

Water is at the root of many of society's most pressing concerns -- from human health to food production to economic prosperity to environmental protection. In some cases, we lack fundamental scientific information upon which to make informed water policy decisions. In other cases, water policies are inconsistent with basic tenets of water science. A new report from the National Council for Science and the Environment (NCSE) provides recommendations for closing the gap between water science and water policy.

Water for a Sustainable and Secure Future: A Report of the 4th National Conference on Science Policy and the Environment explores science-based strategies for achieving water sustainability. NCSE's unique conference attracted more than 800 scientists, policymakers, business executives and civil society representatives from 46 states and 14 countries. The participants worked together to craft recommendations about the role of science in achieving sustainable relationships among water, people and the environment.

In his opening keynote address, William K. Reilly, former Administrator of the U.S. EPA, stressed the need to modify U.S. water policies that have become remnants of a bygone era. He emphasized the need to engage scientists in making environmental policies and setting environmental priorities. Reilly urged scientists to avoid becoming "truants from the policy process."

Bruce Babbitt, former Secretary of the Interior, noted that there is no absolute shortage of water in most areas of the United States, but water is often delivered at vastly below cost and used inefficiently. Klaus Toepfer, Under Secretary General of the United Nations, recommended progressive pricing -- charging more per unit the more water is used -- to ensure that people can afford enough water to live healthfully and still provide incentives for efficient use.

Pulitzer Prize-winning author Jared Diamond offered a cautionary example of the results of poor environmental management practices as he delivered the John H. Chafee Memorial Lecture on Science and Environment, *Lessons from Environmental Collapses of Past Societies*. Drawing upon his natural science research to understand why some environments are more fragile than others, Diamond explained how inadvertent environmental degradation led to the demise of the isolated civilization on Easter Island in the South Pacific.

The complete text of the conference report, *Water for a Sustainable and Secure Future*, is available at the [NCSE conference website](#). A second report containing Jared Diamond's lecture, *Lessons from Environmental Collapses of Past Societies*, is also available online at www.NCSEonline.org.

The 5th National Conference on Science, Policy and the Environment: *Forecasting Environmental Changes* will take place on February 3-4, 2005 at the Ronald Reagan Building and International Trade Center in Washington, DC. Please visit the 2005 conference [website](#) to register online and view the conference agenda and other information.

- **Where Roads and Streams Cross - Gary Kappesser, Forest Hydrologist on the George Washington and Jefferson National Forests writes -**
As part of my recent flood detail to the National Forests in North Carolina, I created a point shapefile of watershed area, bankfull width, and flood peaks (2, 25, 50, and 100 year) at 10 meter intervals along the entire network of stream channels within the Grandfather, Appalachian, Pisgah, Highlands, and Wayah Ranger Districts. A point shapefile of road – stream crossings had already been created by the Forest. I did a "spatial join" on the two data sets to create a smaller data set with flood peak flow estimates at each road crossing location.

This information can then be used in flood repair work to design appropriately sized culverts or bridges.

Similar data sets can be developed for other National Forests. Potential application might additionally include evaluation of road – stream crossings for aquatic organisms, merging with geo-referenced INFRA data, and NRIS water. The data could also be merged with the kind of stream survey work done by our CATT teams here in Region 8. Many regional curves relate factors of bankfull width, average bankfull depth, and cross sectional area to watershed area in square miles. If values of watershed area needed to support perennial or intermittent streams are known, the stream class could also be derived from this data.

The data that were developed are probably accurate for at least 95 percent of the data points. A stream network generated from a Digital Elevation Model does not always accurately depict conditions on the ground, especially in broader valleys or flatter terrain. Meanders and confluences are common problems. The DEM generated stream network occasionally displays “stream piracy” where the flow is shown incorrectly from one drainage to another.

Here is the procedure that I used:

Ten meter Digital Elevation Models (DEM) were obtained from the Forest Service Geospatial Data Clearinghouse as zipped files.

<http://fswweb.clearinghouse.fs.fed.us/>

These were unzipped and processed. They were then merged using the Raster Calculator in Spatial Analyst (map calculator in ArcView). The following operations were then carried out. These can either be done with the Raster Calculator or with help from one of the Hydro extensions available.

1. Fill the “sinks” that may be present in the merged DEM.
2. Calculate flow direction
3. Calculate flow accumulation from the flow direction result.
4. Use the Raster Calculator to select flow accumulation greater than a cutoff number (500).
5. Multiply the result of this calculation as integer by the flow accumulation grid. The result will be the drainage network with flow accumulation data. The value in each grid represents the number of grids “flowing” into it.
6. Convert this raster to a point shapefile.
7. Add fields to the attribute table of the shapefile. Use the field calculator to populate the fields with area in square miles (for a 10 meter grid, multiply by 0.00003861022). This value converts 10 meter – square grids into square miles. Use appropriate regional regression equations to calculate flood

peaks. (Take the value in square miles, raise it to the exponent, and then multiply by the constant.)

An ArcView extension called "intersect.avx" can be used to locate the intersection of two polyline themes (streams and roads). It can be downloaded from the following ESRI web site:

<http://arcscripts.esri.com/details.asp?dbid=12397>

It creates a new point theme with a point at every location where the 2 input polyline themes intersect. It only works in Arcview 3.x and the browse button does not work to assign a file name. Also it takes a while to run a large data set. The George Washington half of my Forest took about 3 hours. In spite of these shortcomings, it is the best way I have found to identify road-stream intersections.

- **THERE'S STILL TIME TO SIGN UP!**

World's Largest Kids Fishing Event Partnership

Now is the Time to Sign Up for 2005 Kids Fishing Derbies

For over 15 years the U.S.D.A. Forest Service has been in "Partnership" with Hooked on Fishing International and its ever-growing Kids All-American Fishing Derby program.

Hosting a kids fishing derby is fun and easy when you register an event with **Kids All-American Fishing**. Once again, recognized agencies and organizations including the U.S. Forest Service Ranger Districts can submit an application to receive the nationally acclaimed Kids All-American Fishing Derby Organizer Support Kit absolutely **FREE OF CHARGE!** Kids fishing derbies are fun for the whole family and we want to help you produce an event for your Ranger District or Forest in 2005

The free Derby Organizer Support Kit has just about everything you will need to make a kids fishing derby a success. The kit includes support tools such as a how-to Organizer Handbook, event promotion posters and banner, and literally hundreds of give-away items for the kids, including goodie bags, bobbers, fish hooks and other fun items so everyone goes home with something in addition to the wonderful memories., all this, at no charge to you, the organizer. Even the Shipping and Handling is absolutely FREE!

This past year over 1,800 individual organizations and agencies, including parks and recreation departments, state fish and game agencies, scouting groups, community service organizations, and U.S. Forest Service Ranger Districts partnered with Kids All-American Fishing to host youth fishing events in all 50 states. The U.S. Military even joined in with derbies for the kids of personnel stationed in Germany, England South Korea, and Japan. Join us in 2005 and help bring the joy of fishing to the kids in your area.

- NOAA Restoration Center/FishAmerica Joint Grant

The FishAmerica Foundation and the NOAA Restoration Center announce the availability of up to \$600,000 for hands-on, grassroots projects across the coastal United States to restore marine, estuarine and riparian habitats, including salt marshes, mangrove forests, and freshwater habitats important to anadromous fish species. The partnership will seek an increased number of projects from the Chesapeake Bay watershed and may provide limited funding for salmon and/or steelhead habitat restoration projects in the Great Lakes basin.

Visit FishAmerica's web site at <http://www.fishamerica.org> for the complete announcement, funding guidelines and application. Please Note: The application for this partnership is new this year. Additional funding opportunities can also be found the NOAA Restoration Center Website http://www.nmfs.noaa.gov/habitat/restoration/funding_opportunities/funding.html

Community-based nonprofit organizations, such as local sporting clubs and conservation associations, as well as state and local agencies are encouraged to submit proposals. Projects must result in on-the-ground habitat restoration, clearly demonstrate significant benefits to marine, estuarine or anadromous fisheries resources, particularly sportfish, and must involve community participation through an educational or volunteer component tied to the restoration activities. Applicants are encouraged to incorporate the participation of NOAA staff to strengthen the development and implementation of sound restoration projects.

Grant recipients will be contacted prior to receipt of the grant contract to discuss specifics of the contract, matching requirements and reimbursement.

The FishAmerica Foundation must receive applications and required documentation no later than February 25, 2005 by 5:00 PM. Electronic and faxed applications will NOT be accepted.

Proposals must be submitted to:

FAF/NOAA RFP - Grant Applications

FishAmerica Foundation
225 Reinekers Lane, Suite 420
Alexandria, Virginia 22314

Regional Roundup: Intermountain Region - Dan Duffield, Fisheries Program Leader

In the **Regional Office** things have been relatively quiet with folks throughout the region taking time off to enjoy the holidays. Dan Duffield has been working with Lee Jacobson on planning a one day habitat session scheduled for March 2 for the Utah native

cutthroat trout conservation teams. The first objective of the session will be to review the aquatic habitat language proposed in the revision of the Bonneville Cutthroat Trout Agreement and Strategy for the State of Utah. The second objective of the session will be to focus on how to assess aquatic habitat for progress in attaining the habitat goals and objectives in the revised agreement and strategy. Both line officers and fish biologists are expected to attend. The one day session will be hosted by the Utah Division of Wildlife Resources in Salt Lake City, Utah.

The BPR staff is planning for the annual BPR workshop which is scheduled for the week of April 11. This Region 4 workshop will focus on fish, wildlife, soils, and hydrology for the BPR portion. It will also be held concurrently with regional workshops from other staff areas to facilitate information sharing and integration. Other concurrent workshops include Lands, Recreation, and Vegetation Management staff areas.

Gina Lampman, Regional Aquatic Ecologist, is working on the Dixie National Forest as Public Affairs Officer. She is on a detail from Jan 3 through Feb 18. While she's gone, Dan Duffield is the primary contact for fisheries (801-625-5662); Lee Jacobson for TES-related and MIS-related issues (801-625-5664); Jim Capurso of the Caribou-Targhee NF for salmon & steelhead proposed critical habitat (208-557-5780); and Kerry Overton for subbasin viability/risk-threat assessment (208-373-4357). Gina can be reached at the Dixie Supervisor's Office (435-865-3744).

The USFWS National Conservation Training Center is offering a course on "Rotenone & Antimycin Use in Fish Management" which is scheduled for May 23 – 27, 2005 at Utah State University in Logan, Utah. The course provides a foundation for the planning and execution of a fish sampling/control/eradication project using the fish management chemicals rotenone and antimycin. Topics include: fisheries management plans; piscicide uses and strategies; species sensitivities; pre- and post-project monitoring; crisis management strategies; and elements of a good/bad project. Also included are product chemistry and toxicology, use history and profiles, application, monitoring and neutralization techniques, and applicator safety for both rotenone and antimycin. Application techniques are demonstrated in hands-on field exercises. Successful completion of a final exam will give the participant a certificate of completion. For more information, contact June McIlwain, Aquatic Resources Training, 304-876-7439, FAX 304-876-7225, june_mcilwain@fws.gov, closing date for applications: March 23, 2005, <http://training.fws.gov/>

On the **Wasatch-Cache National Forest**, Paul Cowley states that the past months on the Forest have been busy catching up on all the reporting that comes with extensive survey accomplishments. On the Forest, cutthroat trout are identified as a management indicator species. Consequently, the Forest has been busy working on the Forest Plan monitoring report and developing a technical report going over the ecological status of cutthroat trout on the Forest, the risks and threats to the species, and identification of populations and metapopulations. Trends have also been determined for the individual populations and metapopulations and monitoring protocols described.

Ashley National Forest
Flaming Gorge Ranger District
Brett W. Thompson (District Fisheries Biologist)

Status of Fishes Survey

In 2004, every stream located on the Flaming Gorge Ranger District of the Ashley National Forest was surveyed for fish population analysis. Of the streams surveyed, 18 streams were sampled using the two-pass depletion method, 8 were sampled using a multiple locations presence/absence approach. These streams were shocked at multiple locations from Flaming Gorge Reservoir up to their respective headwaters. In large drainages, 3 different 100 m reaches were surveyed using backpack electro-fishing equipment (Smith-Root model 12B.) In small drainages only 1 or 2 reaches of the same length was sampled. Each reach was surveyed using the depletion 2-pass method. A block net barrier was placed at the top of each reach and at least two passes were made with the electro-fisher. Length and weight measurements were taken on all fish sampled. Any morphological deformities or possible clinical symptoms of whirling disease were photographed and documented. For analysis purposes fish data from multiple reaches were pooled and reported as a function of weight and length.

Fish were found in 19 of the 24 streams surveyed (see figure 1.) A total of five different species were found during the 2004 study. They included: Brook trout (*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), Colorado River cutthroat (*Oncorhynchus clarki pleuriticus*), cutbow (*Oncorhynchus clarki pleuriticus* x *Oncorhynchus mykiss*) and mottled sculpin (*Cottus bairdi*) (Figure 2). Brook trout were the most prevalent species, being distributed over 60% of the streams that contained fish. Colorado River Cutthroat occupied 40% of the streams that contained fish where as rainbow trout and cutbows occupied only 24% and 8% respectively. Established populations of morphologically pure CRCT were found in 10 streams. These included Elk Creek, Little Elk Creek, Daggett Creek, Manns Creek, North Fork Sheep Creek, Middle Fork Sheep Creek, South Fork Sheep Creek, Beaver Creek, Weyman Creek, and the middle reach of main steam Sheep Creek. Furthermore, the headwater reaches of 4 streams contained CRCT exclusively. These included Elk Creek, Little Elk Creek, North Fork Sheep Creek, and the West Fork of Carter Creek (sampled with hook and line below Ram Lake.) Obvious genetic introgression between CRCT and rainbow trout was observed in the middle reach of Carter Creek and approximately $\frac{1}{2}$ - $\frac{3}{4}$ of a mile above the lower reach of North Fork Sheep Creek and in the extreme lower reaches of Elk Creek. Fish were not considered CRCT if rainbow trout introgression was observed.

Population and structure was similar to that found in the 2003 survey. Manns Creek was the only exception where we had expected to sample CRCT exclusively in the middle and upper reaches. Even though the UDWR had removed CRCT from the system prior to their chemical treatment and re-stocked them following, we were unable to document a single fish in the upper two reaches. The lower reach is located just above the confluence with Sheep Creek and below the migration barrier where the detoxification station was located.

Four more streams were sampled in 2004 than in 2003. These included: Young Springs, Goslin Creek, WF Eagle Creek, and Allen Creek. Fish populations were found in Young Springs, and WF Eagle Creek. A healthy population of naturally reproducing rainbow trout/CRCT hybrids exists in WF Eagle Creek and was sampled for whirling disease testing in November.

The three lakes sampled using hook and line sampling were in the Weyman Lakes basin and Lamb Lakes Basin. Lower Anson Lake of the Weyman Lakes basin produced both Colorado River cutthroat trout and brook trout. Ram Lake and unnamed lake (GR-

21) of the Lamb Lakes basin produced no fish with hook and line sampling in the summer of 2004. In the summers of 2002 and 2003 hook and line sampling from forest service personnel produced both Colorado River cutthroat and grayling (*Articus thymallus*) from Ram Lake. GR-21 was not sampled at this time. It is also interesting to note that in the upper headwater reaches of the West Fork of Carter Creek, which is Lamb Lakes basin, cutthroat were found in the perennial stream that flows out of Ram Lake to the rock barrier approximately ¾ to 1 mile downstream. Below this barrier brook trout are the dominant species.

A total of 1171 fish were sampled in 2004. Comparable to last year's survey, were we sampled a total of 1323 fish. Also comparable were the proportions of species in the sample. CRCT comprised 25% (287 individuals) of the sample compared to 19.7% last year. Brook trout, rainbow trout, and CRCT/RBT hybrids were 57%, 10% and 8% respectively (see figure 2.)

Figure 1. Exhibits the percentage of streams surveyed in 2004 on the Flaming Gorge Ranger District that contained fish.

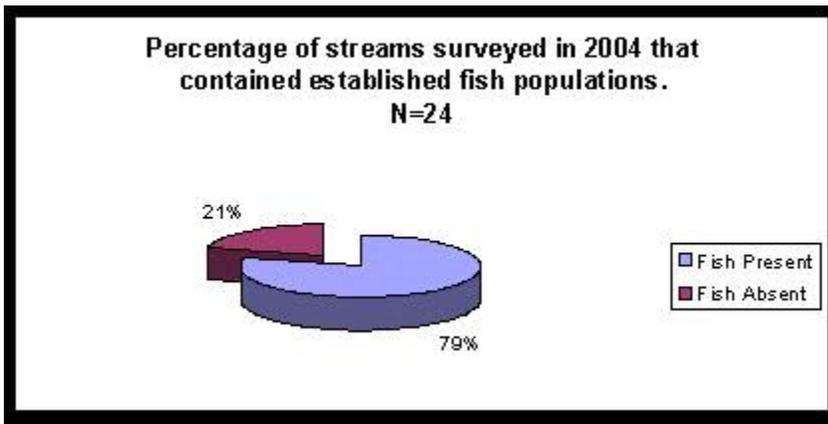
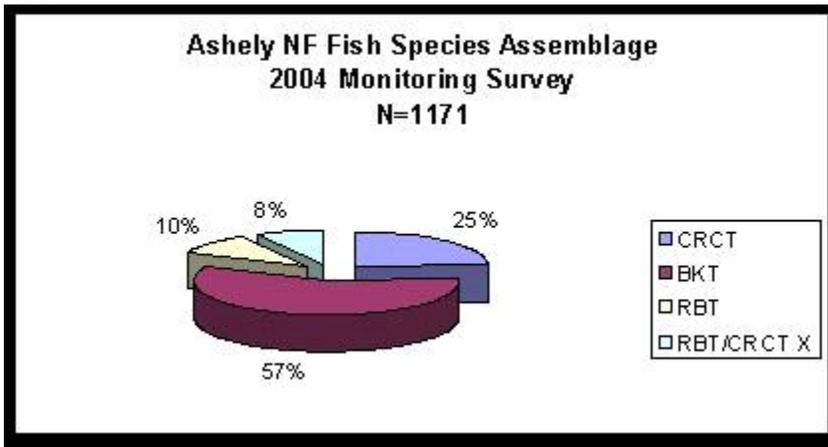


Figure 2. Species assemblage in streams sampled on the Ashley National Forest in 2004.



Fish Migration Barriers

In 2004 we installed two fish migration barriers in the Sheep Creek drainage. One of these barriers (Middle Fork Sheep Creek) was constructed in preparation for the Utah

Division of Wildlife Resources chemical treatment plans to eradicate brook trout and rainbow trout from the drainage. The other was installed to protect an existing population of CRCT persisting in North Fork Sheep Creek. The barrier on North Fork Sheep Creek is located just up from Hickerson Park along USFS trail #023. We used treated timber obtained from a local source to construct the barrier (see figure 3.) The barrier on the Middle Fork Sheep Creek was constructed using native rock material and concrete (see figure 4.)

Figure 3. Fish migration barrier installed on North Fork Sheep Creek.



Figure 4. Fish migration barrier installed on Middle Fork Sheep Creek.



Deep Creek Habitat Enhancement Project

In the fall of 2004 the Forest Service in cooperation with the Utah Division of Wildlife Resources, and the National Fish and Wildlife Foundation completed a project in the Deep Creek campground to increase habitat complexity for resident fishes. Over the long history of the campground habitat had become degraded and fish densities were very low as compared to stream reaches above USFS road 539. Numerous log jam structures were constructed and modeled after existing structures higher up in the drainage to achieve a “natural look” (see figures 5 and 6.) Portions of the channel were deepened to decrease width/depth ratios where obvious widening had been experienced. Deepening and the placement large woody debris to create shade and hiding cover enhanced existing shallow plunge pools and lateral scour pools. The project: Increased the abundance and complexity of fisheries habitat through the

campground; created geomorphic traits in the channel that are more indicative of a natural fluvial system; and increased biological diversity through the stream corridor of the campground. The new available habitat will provide resting cover, shade, and spawning substrate deposition sites for fish, and provide previously lacking invertebrate habitat.

Figures 5 and 6. Log jam structures and associated pools constructed on Deep Creek to increase fisheries habitat.



Status of Whirling Disease on the Flaming Gorge Ranger District

As of 01/2004 whirling disease had been confirmed in one drainage located on the North Slope of the Uinta Mountains (Burnt Fork Creek on Private Property). No positive samples have been collected on North Slope steams located on the Ashley National Forest and further testing of the Burnt Fork drainage on the Wasatch/Cache NF produced negative results. However, in the fall of 2003 Fish Health Specialists from the Utah Department of Agriculture (UDA) collected fish from East and West Greens Lake for general disease testing. Both of these ponds are privately managed for fish propagation by the Red Canyon Lodge and are stocked annually from private hatchery sources. A total of 25 fish from East Greens Lake and 10 fish from West Greens Lake were tested by an AFIS certified laboratory in Washington using the Pepsin Trypsin Digest test (PTD). One fish from the East Greens Lake sample tested positive for whirling disease myxospores and a pooled sample of five fish (from a subsequent sample) also tested positive using PTD. None of the 10 fish from West Greens Lake tested positive from the 2003 sample. However, personal communication with Kent Hauck, fish health specialist with UDA, confirmed that a sample of 10 fish from West Greens Lake in 2004 did result in one positive sample using the more definitive DNA Polymearse Chain Reaction test (PCR). This test was analyzed by a different AFIS certified lab in northern Idaho. As a result of these positive tests, management at Red Canyon Lodge, in cooperation with the UDA, took a proactive approach and devised a containment plan for the disease. The contracted bio-security plan, will in theory, help prevent further infection of the disease to adjacent watersheds on the Ashley National Forest. Water from East Greens Lake is fully contained and has not escaped into the Skull Creek drainage since 1991. Any water that does escape flows through an un-maintained ditch into upland areas on National Forest Lands. Signs have been place at East Greens Lake to inform the public of the infection and what precautions need to be taken to prevent further infection. Since a positive sample was not detected at West

Greens Lake until late of this year (2004), a containment strategy for this lake was not included in the bio-security plan drafted with the UDA. Water escaping West Greens Lake is owned by the AK Reynolds Ranch and eventually ends up in the West Fork of Eagle Creek and Flaming Gorge Reservoir.

As an agency we (USFS) were uncomfortable with the relatively low sample sizes taken by the UDA at both East and West Greens Lake. A meeting with Red Canyon Lodge management resulted in them agreeing to allow USFS fisheries biologists to collect larger samples and have them tested independently. On 11/20 and 11/21 2004 we collected 47 fish from East Greens Lake and 31 fish from West Greens Lake. The target sample size was 60 fish, but significant gill netting effort yielded what was previously stated. Samples will be tested at the Fisheries Experiment Station (FES) operated by the Utah Division of Wildlife Resources in Logan, Utah. Due to the unknown origin of the disease present in the Red Canyon lakes, we also decided to sample the adjacent watersheds to determine any further infection and a possible source of the disease. During November and December 2004 we collected fish from the following waters for testing: WF Eagle Creek, Skull Creek, Sheep Creek, Carter Creek (directly below Brownie Lake), and Moose Pond. We also attempted to collect samples from Allen Creek, Burnt Creek, Cub Creek and Cart Creek. These creeks were frozen over and will be sampled in 2005 following the spring high flows. These data will be invaluable, as we confirm the presence of the disease and determine its' distribution. The results will be used and incorporated in our efforts to draft a bio-security plan/agreement between the Forest Service and Red Canyon Lodge management.

Vernal Ranger District 2004 Fisheries Accomplishments
Colorado River cutthroat trout Conservation Projects
Alex Gouley (District Fisheries Biologist)

2nd year Mechanical brook trout removal from Reader Creek

Utah Division of Wildlife Resources (UDWR) fish biologist and State volunteers continued with existing project from 2003. The objective was to protect an existing population of Colorado River cutthroat trout (CRCT) by removal of nonnative brook trout and stocking Reader Creek with 8,500 YOY CRCT. Multiple electro fishing passes were conducted to remove the brook trout. This project was in partnership with Ashley National Forest, Utah Division of Wildlife Resources, and National Fish and Wildlife Foundation.

North Fork Ashley Creek fisheries improvement project

This year the Ashley National Forest in partnership with UDWR and National Fish and wildlife Foundation completed a fisheries improvement project within the North Fork Ashley Creek. The objective was to improve fisheries habitat within this stream by introducing approximately 60 logs along 0.5 miles section of the stream. The logs were used for habitat structures such as log vanes, cross vanes and cover logs. A tracked excavator and crew were used to place and anchor the habitat structures along the stream.



Also the fish survey crew stationed on the Flaming Gorge District provided support for the Vernal Ranger District fisheries by conducting approximately 0.5 miles of fish surveys throughout the District.

Boreal Toad (*Bufo boreas boreas*) Movement Patterns and Habitat Use in South-Central Utah (Dixie and Fishlake National Forests)
Steve Brazier – Dixie N.F. Forest Fisheries Biologist
James Whelan – Fishlake N.F. Forest Fisheries Biologist

In 2003 and 2004 the Dixie and Fishlake National Forests, under a cooperative agreement with the Utah Division of Wildlife Resources, conducted a field study to observe and record movement patterns and habitat use by boreal toads (*Bufo boreas boreas*). Fourteen adult toads on Boulder Mountain (Dixie N.F.) and 28 toads on Monroe Mountain (Fishlake N.F.) were fitted with external radio transmitters (Holohil BD-2 1.4g) in early summer of both years. The external radio transmitters were attached with nylon-coated wire fishing leader inside Tygon tubing secured with a crimped connector sleeve, as developed by the Colorado Division of Wildlife and practiced in a preliminary study in 2002.

Each toad was located and monitored weekly throughout the summer until late August to mid-September, when the radios were removed. At each observation the UTM location, habitat type, distance to water, toad activity, and other information was noted. Objectives were to determine habitat use by type and distance to water, document movement patterns of male and female toads and what time of the summer these movements occurred, and validate whether Forest riparian buffer zone widths around breeding sites and streams were adequate to protect boreal toads and their habitat. Additional air and toad body temperature data was collected in 2004 to see if temperature might be a factor in habitat selection. Standard sanitary techniques were utilized to prevent the spread of disease.

Boreal toads seem to be doing well in southern Utah, but are experiencing declines in some other portions of their range. The Forests wanted to obtain baseline data on boreal toads, which will also be useful for project planning. On the Fishlake N.F. livestock grazing and OHV use is occurring in important boreal toad areas and extensive vegetation treatments have been planned to treat conifer invaded aspen stands. The Dixie N.F. study site has a large exclosure that was built to protect a key boreal toad breeding area. Long-term the Forests would like to identify what factors are contributing

to their breeding success, evaluate techniques to monitor population trend and viability, and determine the effects of large scale management treatments and wildfire on boreal toad habitat suitability.

A shared Biological Technician, Mike Goates, conducted the majority of the fieldwork with assistance from other seasonal employees, volunteers, and the Forest Fisheries Biologists. Mike is using the data for his M.S. thesis.

Since disease appears to be a major factor in boreal toad declines in Colorado and Wyoming, in 2004 the Dixie and Fishlake N.F.s also collected 36 disease samples (mostly from the radioed toads) for testing for the presence of the chytrid fungus *Batrachochytrium dendrobatidis*. All 36 samples came back negative. One site in southern Utah was identified as having the disease several years ago based on one positive sample. Additional testing will need to be carried out to further define the disease situation.

Preliminary results indicate that male and female toads have somewhat differing movement patterns and habitat use, particularly later in the summer. While toads used moist habitats more often than drier habitats, some females were observed moving into upland sagebrush habitats at distances greater than 100 meters from the nearest water source, often in weekly cyclic patterns. Males, however, appeared to prefer staying near water sources and were generally observed within 10 meters of water. Both male and female toads moved away from breeding sites, sometimes over one kilometer. Toads that moved significant distances from their original breeding site generally stayed near flowing creeks and likely used waterways for movement corridors.

The majority of the boreal toad observations were within Forest riparian buffer strips. There have been some interesting movements, including one boreal toad that moved over one kilometer downstream to a reservoir then upstream up a different fork, showing potential interchange between two populations. On the Fishlake N.F. one of the most important findings is the importance of small (< 1/3 meter) perennial streams for boreal toad use, particularly in late summer. Many of the hibernacula that were located were burrows and root chambers along these small seeps which have water flowing through or adjacent to them. These have been most often under spruce and fir trees but also under willows and in one case a shrubby cinquefoil.

Regional Roundup Calendar

Region	Issue
Southwestern Region	12/31/04
Intermountain Region	1/07/05
Pacific Southwest Region	1/14/05
Pacific Northwest Region	1/21/05
Southern Region	1/28/05

Migrational Opportunities (Federal job announcements:
http://jobsearch.usajobs.opm.gov/agency_search.asp)

- **Director Public Lands Initiative**

Trout Unlimited (TU) is seeking to hire a national director for TU's Public Lands Initiative (PLI). The PLI was formed in 2002 primarily to organize TU members and other hunters and anglers in support of balanced, responsible public lands policies and protection. The PLI work is mostly in western states and has three divisions: Oil & Gas work; Roadless Lands Protection and Mining Restoration. Presently the PLI has four full time employees with current plans to double that number. Please refer to: <http://publiclands.tu.org/> for complete information on the PLI.

The PLI Director position will involve oversight of the PLI program and its employees. The ideal candidate will have strong organizational, leadership and people skills, be able to delegate responsibility and handle strong personalities. The position will be housed in the western United States (likely co-located with another TU office, if possible). The person should be an articulate and passionate advocate for public land conservation, fishing and hunting, and able to work in collaboration with state and federal agencies, other conservation and environmental groups and industry representatives. The Director must have experience in managing budgets and staff and other attendant administrative requirements, well as experience in fundraising and grant writing.

Candidates must have strong written and public communications skills as well as good computer skills. The ideal candidate should have a college or advanced degree in a relevant field, live in a western state, have a strong background of fishing and hunting and a love for wild places. Travel will be required. Fundraising experience will also be beneficial. Pay and benefits will be competitive.

If you think you would enjoy the team atmosphere that comes from working for an organization with a strong and broad conservation mission, if you want to ensure that America's last wildlands and watersheds remain intact for future generations, and desire to take advantage of a lifelong love affair with wild places, then email, fax, or mail your resume, cover letter and salary history to sportsmen@tu.org, Trout Unlimited, Attn: Chris Wood, 1300 North 17th Street, Suite 500, Arlington, VA 22209, 703-284-9400 (fax).

- **Out reach notice** - The Gifford Pinchot National Forest is conducting outreach to identify candidates for an exciting and rewarding challenge as the Fishery Biologist at Mount St. Helens National Volcanic Monument (MSHNVM). The Forest is seeking to fill a permanent, full-time Fishery Biologist GS-0482-11 with a duty station of Amboy, Washington. The position will be advertised soon on the USA Jobs website: <http://www.usajobs.opm.gov/>

For more information regarding this position, please contact Karen Thompson, Watershed Resources Manager, at (360) 449-7826, karenmthompson@fs.fed.us; or Cliff Ligons, Monument Manager at (360) 449-7800 cligons@fs.fed.us

- **Outreach Notice:** The Southern Region of the USDA Forest Service will soon advertise the position for Director of the Biological and Physical Resources (BPR) Unit. We plan to advertise it as a GS-15 or a GS-14/15. The results of this outreach will determine what grade(s) we advertise it.

The Southern Region of the USDA Forest Service encompasses thirteen Southern states, plus Puerto Rico and the Virgin Islands. Fourteen National Forests and Grasslands, four National Recreation Areas and the Savannah River Natural Resources Management and Research Institute make up the Southern Region. The Region accounts for approximately ten percent of the total Forest Service workforce. Most of the 3100 Forest Service employees within the Southern Region work in field offices overseeing National Forest operations; about 300 work in the Regional Office in Atlanta. The Regional Office has five primary staff areas: Natural Resources, State and Private Forestry, Operations, Civil Rights, and Public Affairs.

If interested, please contact Roberta Moltzen, Deputy Regional Forester, Natural Resources, telephone at 404-347-4177, or e-mail robertamoltzen@fs.fed.us.

Hotlinks:

- Forest Service Fisheries and Aquatic Ecology: <http://www.fs.fed.us/biology/fish/index.html>
- Fish Your National Forests: <http://www.fs.fed.us/fishing/>
- National Fish Habitat Initiative (NFHI): <http://www.fishhabitat.org>
- Large-Scale Watershed Restoration Projects: <http://www.fs.fed.us/largewatershedprojects/>
- Fish Ecology Unit: <http://www.fs.fed.us/biology/fishecology/index.html>
- Watershed and Air Management: <http://www.fs.fed.us/clean/>
- National Fishing and Boating Week: <http://www.nationalfishingandboatingweek.org/>
- NatureWatch: <http://www.fs.fed.us/outdoors/naturewatch/>
- Forest Service Research Stations – One stop shopping: <http://www.srs.fs.usda.gov/pubs/index.htm>
- Forest Service Research Station - Boise Aquatic Sciences Lab: <http://www.fs.fed.us/rm/boise/>

Sensory Stimulation:

"The person who knows how will always have a job. But the person that knows why will be his boss."

Carl C. Wood

New Files for FishTales – FishTales can now be viewed in one of three ways. You can receive it via e-mail or go to our web site where it is available in a pdf or html version.

<http://www.fs.fed.us/biology/resources/pubs/fish/fishtales/>

FishTales® is a weekly update of activities of the Fisheries and Aquatic Ecology Program of the USDA Forest Service. All information presented is subject to change as projects evolve, opportunities arise and issues unfold. Contributions are welcome and should be submitted to Dave Cross at dcross01@fs.fed.us or Bill Lorenz at blorenz@fs.fed.us no later than close of business on Thursday afternoons. We reserve the right to edit contributions for clarity, brevity, and wherever possible, a dash of silliness and irreverence.

Positions listed are for outreach purposes only and are not full announcements. Interested individuals should contact the forests referenced or consult the USAJOBS website.

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