

Field Notes

*The newsletter of the U.S. Fish & Wildlife Service's
North Carolina Ecological Service's Field Offices*

Wildlife Refuges A Great Place To See Wintering Waterfowl



Pintails on Alligator River National Wildlife Refuge. USFWS Photo

Birders and outdoor enthusiasts can flock to one of the 10 wildlife refuges that are located in North Carolina to view wintering waterfowl along with other animals that live on the wildlife refuges.

A recent waterfowl survey on Alligator River and Pocosin Lakes National Wildlife Refuges documented almost 200,000 waterfowl in and around the refuges. On PLNWR more than 60,000 snow geese and 30,000 tundra swans were counted. On ARNWR 32,000 Northern Pintails were seen. Other species included

American Black Duck, Gadwall, Mallard, Green-winged Teal, American Widgeon, Wood Duck, Northern Shoveler, Ring-necked Duck, Ruddy Duck, Lesser Scaup, Bufflehead, Hooded Merganser, and American Coot.

For information and directions visit the following websites, or you may call 1(800) 344-WILD:

Alligator River NWR:
<http://www.fws.gov/alligatorriver/>
Cedar Island NWR:
<http://www.fws.gov/cedariland/>

Currituck NWR:
<http://www.fws.gov/currituck/>
Mackay Island NWR:
<http://www.fws.gov/mackayisland/>
Mattamuskeet NWR:
<http://www.fws.gov/mattamuskeet/>
Pea Island NWR:
<http://www.fws.gov/peaisland/>
Pee Dee NWR:
<http://www.fws.gov/peedee/>
Pocosin Lakes NWR:
<http://www.fws.gov/pocosinlakes/>
Roanoke River NWR:
<http://www.fws.gov/roanokeriver/>
Swanquarter NWR:
<http://www.fws.gov/roanokeriver/>

Biologists Discover Endangered Fish In North Carolina

A federally endangered fish thought to live only in two river basins in Virginia was recently discovered in North Carolina.

The Roanoke logperch, one of the largest darters in the Perch family, was thought to live only in portions of the Roanoke and Chowan River basins of Virginia. However, biologists with the N.C. Wildlife Resources Commission, the Division of Water Quality and the N.C. Museum of Natural Sciences found two populations of the fish in the Mayo and Smith rivers earlier this summer.

“In a time when we’re seeing a major decline in aquatic critters, we get really excited when a rare fish is possibly expanding its range,” said Chris Wood, aquatic biologist with the NCWRC. “We think this fish once occurred in most of the Roanoke and Chowan basins of both North Carolina and Virginia but has declined over the past century.

The search for the Roanoke logperch started by accident in 2007 after Duke Power biologists happened upon a lone specimen while sampling the Dan River, just downstream of the Smith River, near Eden. Another sampling effort later in 2007 produced only one more specimen leading



Roanoke logperch. USFWS Photo.

biologists to hypothesize that both fish were either washed downstream from Virginia’s Smith River population during a previous high-flow event or that drought conditions may have caused the two fish to move downstream.

In July when biologists found not one — but two — populations of Roanoke logperches. On July 8, they captured three logperches while surveying a short reach in the Mayo River, a large tributary of the Dan River in Rockingham County. The three fish were exciting finds because no records existed of the fish in either the Virginia or North Carolina portions of the Mayo River.

A few weeks later, biologists found 10 Roanoke logperches in the Smith River in Rockingham County, ranging in size from 2.5 inches to 7 inches.

“The size range of the fish found in

the Smith River indicates that several age classes exist, which means that there is most likely a reproducing population of Roanoke logperches in the river,” Wood said.

Now that at least two populations of the federally endangered Roanoke logperch have been verified in North Carolina, biologists will look closely at the two populations to determine how extensive and healthy they are. They’ll also look at other rivers with similar habitat for more undiscovered Roanoke logperches.

“Finding a new population, and in this case two, is extremely exciting because it means there are more of that species than we thought, and maybe the conservation efforts at the state and federal levels are paying off, said Wood. *(Article courtesy of North Carolina Wildlife Resources Commission)*

Biologists Return To Pollution-plagued Cane River Making Discovery



State biologists cataloguing mussel shells from the Cane River. Photo by Gary Peeples, USFWS

Aquatic biologists returning to Yancey County’s pollution-plagued Cane River made a surprising discovery recently – two live Appalachian elktoe mussels upstream of the town of Burnsville’s wastewater treatment plant which has been beset with problems. This marks the first time the endangered mussel has been documented upstream of where the plant discharges into the river.

With data from the North Carolina Division of Water Quality showing improved fecal coliform levels in the Cane River, biologists with the U.S. Fish & Wildlife Service and N.C. Wildlife

Resources Commission decided to enter the river to better gauge the extent of a mussel die-off that coincided with problems at the wastewater treatment plant.

Since August 7, biologists have examined eight stretches of the Cane River for signs of mussel life. In addition to finding live mussels upstream from the wastewater treatment plant, they also found live mussels at the two sites furthest downstream from the plant. However, at the five downstream sites nearest the plant, where mussels were known to exist prior to the discharge problems, biologists failed to find any live mussels.

Biologists Respond To Threat From White Nose Syndrome

Biologists from the Frankfort, Cookeville, and Asheville Field Offices are collecting information about the endangered Indiana bat to prepare for a potential White Nose Syndrome (WNS) outbreak in the Southeast. White nose syndrome is a mysterious ailment linked to the deaths of thousands of bats in the Northeast.

A symptom of WNS is especially low hibernation body weight, however, biologists in the Northeast were handicapped when they didn't have enough data to quantify weight loss and gain a clear idea of what's abnormal. Service biologists in the southeast recently teamed with other federal, state and private partners in Tennessee and Kentucky to collect data on the pre-hibernation weight of Indiana bats, providing a much-needed baseline for future comparisons.

The scientists also put sensors on 20 bats in a Kentucky cave which will



Indiana bat with a sensor to track body temperature. Photo by Robert Currie, USFWS

provide information on the bat's body temperature throughout hibernation. Since body temperature rises when a bat is awake, this gives biologists an

idea of how often healthy bats wake up during hibernation, important since frequent stirring uses up fat reserves and can lead to low body weight.

Biologists Get Down To The Atomic Level To Track Bat Migration Patterns



Collecting fur from an Indiana bat for isotope analysis. Photo by Robert Currie, USFWS

Isotopes are versions of a chemical element that differ in the number of neutrons. The different isotopes of an element aren't distributed evenly

across the landscape, and distribution is generally linked to latitude and elevation - for example, isotopes with more neutrons are heavier and tend to

sink and thus are found lower than lighter isotopes. As a result, scientists can look at the isotopes in body tissue - which enter the body as part of the food and water consumed, and air breathed - and get an idea of where an animal has been.

This approach has long been used in researching bird migrations, and Dr. Eric Britzke of the U.S. Army Corps of Engineers, working with Service biologists from the Frankfort, Cookeville, and Asheville Field Offices is using it to help determine migration patterns for endangered Indiana bats in Tennessee and Kentucky. The bats molt in mid-summer, and the new fur contains isotopes that enter the bat's body as the fur grows. Examining the isotopes in the hair collected at their hibernation sites enables researchers to determine where the bats spent their summer.

Northern Right Whale Mother And Her Calf Off The Coast Of NC

A northern Right whale mother and her calf have been spotted off the coast of North Carolina near Wilmington. If initial identification is correct, the whale is known as “Calvin.” And, this would be the second time she has been spotted with a calf off the coast of North Carolina.

The first time was in 2004. Northern Right Whales typically do not birth this far North and most are father South at this time of year.

The Right whale is the world's most endangered large whale and was listed in June 1970. Worldwide, there are about 600 individuals remaining, and current estimates indicate the occurrence of only 300 to 350 individuals in the North Atlantic Ocean. The low population numbers signal this species is most in danger of extinction. Possible reasons include the effects of ship traffic, marine pollution, and coastal development in the North Atlantic calving grounds, entanglement with fishing gear; collision with vessels and competition for food.



A Northern Right Whale and calf similar to the pair in the photo have been spotted off the North Carolina coast. Florida Fish and Wildlife Conservation Commission photo.

Pollution Levels Declining In Waterfowl At An Eastern North Carolina Waste Site

The U.S. Fish and Wildlife Service and partners measured pollutants in wood duck eggs collected near a North Carolina paper mill. The mill, on the Roanoke River near Plymouth, is adjacent to the Roanoke River National Wildlife Refuge.

In the early 1990's researchers found pollution levels of concern in wood duck eggs near the Refuge according to Tom Augspurger, Environmental Contaminants Biologist, Raleigh Field Office. In the mid-1990's, a mill modernization reduced pollutant loading to the river, so the group re-assessed pollution risks to birds between 2002 and 2005.

“Our investigation was completed this year with two peer-reviewed publications in the journal *Archives of Environmental Contamination and Toxicology*,” said Augspurger. According to the study, pollutant levels in wood duck eggs near the mill were higher than at a nearby reference site. However, all contamination in eggs was less than that associated with adverse effects in birds. The study was the first

to use wood duck eggs in monitoring dioxin trends over time, and there was a 5-fold decline in levels of dioxin-like compounds between 1992 and 2005.

The lack of contamination in reference site eggs, and decline in egg contamination after process changes intended to reduce pollution at the mill, provide strong evidence that mill discharges influenced contamination of local wood duck eggs. “Results indicate the wood duck is an effective sentinel for pollutant monitoring,” said Augspurger. “And, these results were used by the USEPA in explaining the remedy selected for contaminated sediments near the mill,” he added.

The investigation was a cooperative effort with the U.S. Geological Survey Columbia Environmental Research Center, North Carolina Zoological Society, Sylvan Heights Waterfowl, Michigan State University, and Duke University. Copies of the following papers are available at www.fws.gov/raleigh/ec_publications.html: Augspurger TP, Tillitt DE, Bursian SJ,



Wood Duck. USFWS photo.

Fitzgerald SD, Hinton DE, Di Giulio RT. 2008. Embryo toxicity of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin to the wood duck (*Aix sponsa*). *Arch Environ Contam Toxicol* 55: 659-669

Augspurger TP, Echols KR, Peterman PH, May TW, Tillitt DE, Di Giulio RT. 2008. Accumulation of environmental contaminants in wood duck (*Aix sponsa*) eggs with emphasis on polychlorinated dibenzo-*p*-dioxins and dibenzofurans. *Arch Environ Contam Toxicol* 55: 670-682.

For more information, contact Tom Augspurger (tom_augspurger@fws.gov).

“Calm Reflections” Wins 2009 N.C. Federal Junior Duckstamp competition



Kellie Jones, 17, colored pencil drawing of two wood ducks

Kellie Jones, Jack Britt High School, Fayetteville, N.C. won the North Carolina Federal Junior Duck Stamp art competition. The colored pencil on paper of two wood ducks entitled “calm reflections” will be unveiled at the opening reception of the East Carolina Wildlife Arts Festival on Feb.6 at the Washington Civic Centre, Washington, N.C. Jones’ artwork will compete in the national competition to be held in April. After the contest her artwork

will travel throughout the United States as part of the Federal Junior Duck Stamp Art Tour Program. For dates and places of the tour visit: www.fws.gov/duckstamps/.

This year the North Carolina Federal Junior Duck Stamp Program continued its partnership with the North Carolina Wildlife Resources Commission and the East Carolina Wildfowl Guild to host the competition. Jerry’s Artarama continued its sponsorship of the program and will be providing the top prizes.

The contest was held on January 28 at the North Carolina Estuarium, Washington, N.C. This year’s judges included: Christina Peth, Jerry’s Artarama; Clayton Wilkes, N.C. Wildlife Resources Commission; Sandra Gossett, East Carolina Wildfowl Guild, Linda Boyer, N.C. Estuarium, Elizabeth Propst, Art Teacher, Eastern Elementary School.

More than \$2,000 in prizes for

this year’s winners will be provided by Jerry’s Artarama, a fine art supply store based in Raleigh, N.C. with 11 retail locations across the country.

Four hundred and eighty-six students participated in this year’s competition (See winner’s list www.fws.gov/raleigh/pdfs/duck_stamp09.pdf). The Federal Junior Duck Stamp Conservation Design Program is an integrated art and science curriculum developed to teach environmental science and habitat conservation. The first place national winning design is used to create a Federal Junior Duck Stamp each year. Proceeds from the sale of Junior Duck Stamps (which cost \$5) support conservation education by providing awards and scholarships for the students, teachers, and schools that participate in the program. For further information: <http://www.fws.gov/duckstamps/>. Buy a Stamp!

Beach Vitex Now Listed As A State “Noxious Weed”

Beach vitex, nicknamed Kudzu of the coast, will be listed as a state “noxious weed” beginning February 1. This will mean the plant cannot be sold or transported by local nurseries, garden shops or private property owners.

“Thanks to the persistence of Rick Iverson, N.C. Department of Agriculture’s Invasive Plant Specialist, North Carolina is the first state to list beach vitex as a State Noxious Weed,” said Dale Suiter, Endangered Species Biologist, Raleigh Field Office and a member of the Carolinas Beach Vitex Task Force. “This is big news and will go a long way in giving us credibility, funding, and general support for our work.” said Suiter.

A plant that was first promoted by North Carolina nurseries has now been

outlawed by state officials.

Beach vitex is a native plant to the Pacific Rim and can grow up to 15-feet a year. In recent years it had taken over dunes where it was planted and started growing on beaches where it was never introduced and crowding out native plants. It has been a hazard to nesting sea turtles and shorebirds.

“In 2008, the North Carolina Beach Vitex Task Force made great strides toward beach vitex eradication in North Carolina,” said Suiter. Working through a grant funded by the National Fish and Wildlife Foundation 67 beach vitex sites have been treated as a direct result of this grant. In addition, many coastal towns are currently in the process of conducting or contracting beach vitex treatments with the hopes of treating

most of their sites in 2009.

“The coastal towns of Bald Head Island, Figure Eight Island, Caswell Beach and Oak Island have made significant strides toward eradication using other sources of funding and most of their sites have been treated, if not eradicated,” said Suiter.



Beach vitex site on Bald head Island that now has been eradicated. USFWS photo

Critical Habitat for Piping Plover Redesignated In Four Coastal Units

On October 21, a final rule redesignating approximately 2,043 acres of critical habitat for the “wintering” population of the piping plover was established in four coastal areas of Dare and Hyde counties in North Carolina. The final critical habitat areas include parts of Cape Hatteras National Seashore, Pea Island National Wildlife Refuge, and three state-owned islands.

The piping plover is a small, pale-colored North American shorebird named for its melodic mating call, and is listed as threatened in North Carolina. North Carolina is the only state where the piping plover's breeding and wintering ranges overlap. The birds are here year-round.

Critical habitat is a tool within the Endangered Species Act which identifies areas with features that are essential to the conservation of the species and that may require special management considerations or protections. Critical habitat does not set up a preserve or refuge, nor does it affect activities on private land unless there is a federal nexus. The sole regulatory effect of the designation is that federal agencies must consult with the Service before undertaking actions, issuing permits, or providing funding for activities that might destroy or adversely modify critical habitat.

“I really do not see how the designation of critical habitat is going to change the way we do business in these areas,” said Pete Benjamin, Ecological Services Supervisor, Raleigh Field Office. “From the comments we received on this issue we know folks are nervous by this designation and its impact on beach access, and the replacement of the Bonner bridge,” he said. “Because piping plovers are federally protected the National Park Service and the folks at Pea Island National Wildlife Refuge are already required to consult with us on actions that may affect this species and other endangered species,” said Benjamin.

In July 2001, the Service designated 142 areas along the coasts of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas as critical habitat for the wintering population of the piping plover. Out of the 142 units, 18 units were designated in North Carolina for the wintering population of the piping plover.

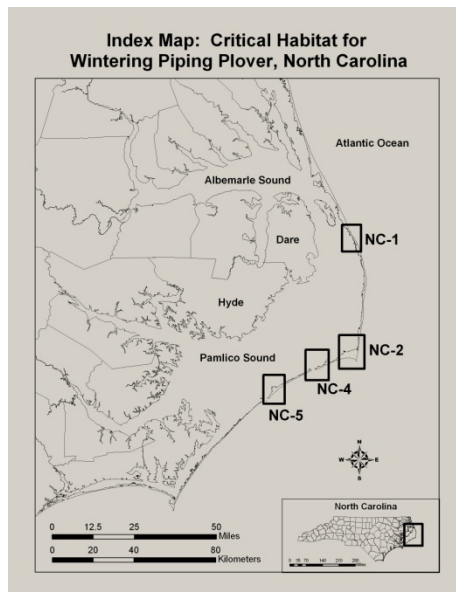
In 2003, two North Carolina counties (Dare and Hyde) and a beach access group (Cape Hatteras Access Preservation Alliance) filed a lawsuit challenging the Service’s designation of four units of critical habitat at Cape Hatteras National Seashore, North Carolina (Units NC-1, NC-2, NC-4, and NC-5). In November 2004, the court set aside and remanded the designation of these units to the Service for

reconsideration. The redesignation of these four coastal units is in response to that court order.

For further information on the critical habitat designation and to view maps of these areas and others visit: http://www.fws.gov/raleigh/species/es_ip/ch.html



Piping Plover. USFWS photo



Critical Habitat Map

Mars Hill College Students Help Conserve Endangered Plant



Students hiking to Roan Mountain bluet site. Photo by Jeanette Behrens

A group of Mars Hill College students are working with professor Scott Pearson to bring the power of the school's computers to bear in an effort to help the U.S. Fish & Wildlife Service protect the endangered Roan Mountain bluet.

Roan Mountain bluet is found at

only a handful of high elevation sites in the five western North Carolina counties. With such a limited distribution, knowing where every plant is found is critical to scientists working to save the plant. This information was collected in the 1990s, however, it sits, of limited use,

as a stack of topographic maps with dots on them and a pile of data collection forms – something students from Pearson's Introduction to Geographic Information Systems class are going to change.

The students will visit a Roan Mountain bluet site and discuss some of the conservation issues surrounding the plant and that particular site. From there, they'll take the paper files – all the topographic maps and the accompanying data sheets - and turn them into a digital GIS file, enabling scientists to project on their computers a map showing the locations of all the sites, and call up information for each site, such as habitat type, elevation, amount of area occupied by the plants, and number of plants.

The partnership between the college and the Service resulted from the Asheville Field Office's web site, which posts projects that would help the Service conserve rare species while giving students a chance to meet course requirements with a real-world application of what they're learning.

Eighth Graders learn about stream ecology and water quality



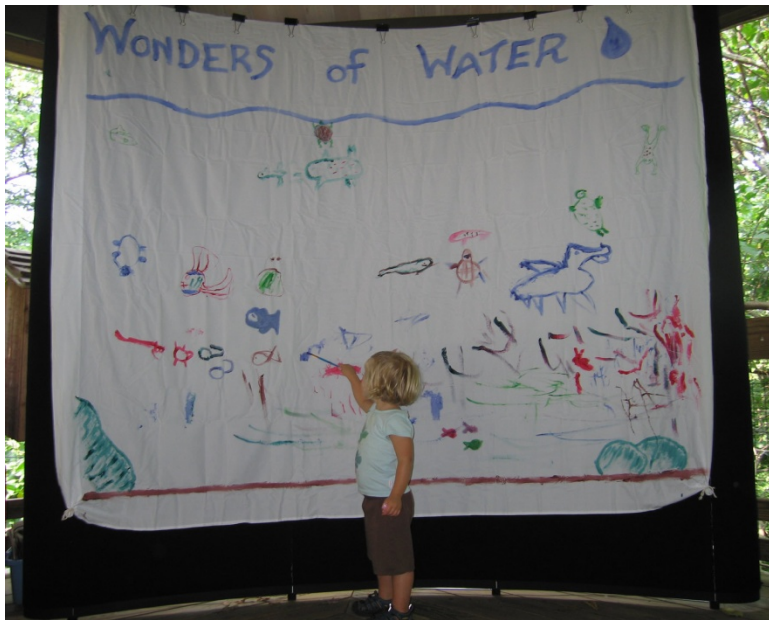
Students studying macroinvertebrates in the Mills River. Photo by Gary Peeples

Eighth graders from every public school in North Carolina's Haywood County were out on the Pigeon River in early September, where biologists joined them in collecting fish, sampling benthic macroinvertebrates, testing water chemistry and learning how land use affects stream quality. The next week, 300 students from Henderson County's Rugby Middle School were on the North Mills River learning the same things.

The students were participants in

the Kids in the Creek program, sponsored by Haywood Waterways in Haywood County and the Henderson County Cooperative Extension Service in Henderson County, and supported by the Service. Asheville Field Office support of Kids in the Creek is an on going effort to foster stream education in communities with listed fish or mussels, and both of these events involved students who live in watersheds that are home to the endangered Appalachian elktoe mussel.

Wonders of Water festival



Madeline Peeples adding to the Wonders of Water Mural.
Photo by Gary Peeples.

With water resource issues increasingly coming to the forefront, the Asheville Field Office joined the Western North Carolina Nature Center in celebrating their Wonders of Water festival in Asheville, North Carolina.

The day-long event included aquatic macroinvertebrate

sampling; presentations, puppet shows, and stories about aquatic wildlife; and demonstrations for low-flow devices around the home like toilets and shower heads. 700 people attended the event, which brought together a host of partners, from plumbing companies to watershed organizations.

Raleigh Field Office Biologists Join Others to Teach Course on Pollution impacts to freshwater mussels



Dwarfwedge mussel.
Photo USFWS

Tom Augspurger, Raleigh Field Office Environmental Contaminants biologist, joined scientists with the U.S. Geological

Survey, Missouri State University, and Oklahoma Department of Environmental Protection to teach a course on pollution impacts to freshwater mussels. The course, entitled *Understanding Freshwater Mussels and their Significance in Toxicity Research and Water Quality Management*, was offered during the Society of Environmental Toxicology and Chemistry (SETAC) annual meeting in November.

SETAC is not-for-profit, worldwide professional organization

Field Office begins podcasting conservation commentary



Logo for the Southern Appalachian Creature Feature podcast. Photo by Gary Peeples

The *Southern Appalachian Creature Feature*, for years a radio commentary the Asheville Field Office has created in partnership with radio station WNCW, 88.7, is now also available as a podcast, available both directly from their website (<http://www.fws.gov/asheville/htmls/generalinfo/podcasts.html>), and through iTunes.

The commentary provides a glimpse into the fascinating world of plants and animals in the Southern Appalachians, one of the most biologically diverse temperate regions in the world. Beyond that it examines the pressing conservation issues of the region that affect those plants and animals - from invasive species, to growth management, to engaging people in the outdoors.

dedicated to the study, analysis and solution of environmental problems, the management and regulation of natural resources, research and development and environmental education. Link to SETAC website: www.setac.org/.

For further information about the course, please contact Tom Augspurger (tom_augsurger@fws.gov).

Regional Directorate tours Appalachian highlands



Regional directorate on Roan Mountain. Southern Appalachian Highlands Conservancy photo.

Members of the U.S. Fish & Wildlife Service's southeast regional directorate toured Roan Mountain in the Fall, on the Tennessee/North Carolina state line, learning about the conservation efforts of the Asheville Field Office and its partners. Roan Mountain, considered by many to be one of the most biologically diverse areas in the Southeast, is home to six federally threatened and endangered species, the recently recovered peregrine falcon, and some of the world's rarest natural communities, including grassy balds and spruce-fir forests.

The directorate, which included the regional director and heads of the National Wildlife Refuge, migratory bird, and law enforcement programs, met with conservation partners, including the USDA Forest Service, Southern Appalachian Highlands Conservancy, Appalachian Trail Conservancy and the North Carolina Wildlife Resources Commission. The group discussed goals and objectives of existing partnerships across the Roan Mountain area and how they meshed with the Service's emphasis on strategic habitat conservation, an effort to increase the efficiency of how Service resources are used.

Report on sediment contamination at five dams complete

A report on the potential for sediment contamination within impoundments created by five small dams on the Neuse River and tributaries in Wake, Wayne, Wilson, and Lenoir Counties was recently released by Tom Augspurger and Sara Ward, Raleigh Field Office Environmental Contaminants biologists.

"We found no significant pollutant problems in a one-mile assessment area surrounding the impounded reaches of each dam," said Augspurger. "Three of the structures were cleared from the need for further review," he said.

"Follow-up sampling and analyses were recommended at Lassister Mill dam and Milburnie dam which are in urban watersheds with known water quality degradation," he added

The report entitled "*Tier 1 Preliminary Evaluation of Pollutant Sources to the Impounded Reaches of Five Dams in the Neuse River Basin, North Carolina*, by T.P. Augspurger, and S.E. Ward, dated 2008. U.S. Fish and Wildlife Service, Raleigh, NC.

was prepared for the U.S. Army Corps of Engineers. The report entailed a review of data on potential pollutant sources to sediments behind the dams and a reconnaissance of the

dams.

"Dams can trap and accumulate sediments through time," said Augspurger. "In some cases, those sediments can accumulate contaminants, and at high concentrations those contaminants can have adverse effects; it's also frequently the case that we find no problems, but each site needs at least this initial evaluation," he added.

For more information about the report, please contact Tom Augspurger (tom_augspurger@fws.gov).

Landowners Workshops Set For Across The State

Woodland owners interested in managing their land and developing an understanding of the basic principles of woodland stewardship are invited to participate in a unique educational event scheduled for this spring. A team of land management experts from federal and state agencies, universities, and the private sector are coordinating efforts to offer the Piedmont Woodland Steward Series through the Biltmore Forest School.

The health, productivity and ecological character of North Carolina woodlands rests largely in the hands of family forest owners. Woodland owners enjoy trees and other natural resources for their social, environmental and economic benefits. This course is designed to help property owners (especially those with 20 acres or less) understand the basic principles of forest stewardship to enrich their experience as a woodland owner.

The following workshop schedule will allow landowners the opportunity to engage with natural resource and land management specialists. Sessions include both hands-on activities in the field and instruction in the classroom. Introductory information on a wide variety of land management topics will be discussed.

Workshop Schedule:

Discovering Your Land: Basic Land Management Skills (April 17 & 18)

Davidson County Agricultural Center, Lexington, N.C.

Friday, April 17 from 9 a.m. to 5 p.m. and Saturday, April 18, from 9 a.m. to noon.

Class Description: How to set property management goals and objectives while considering the role of your land in the big picture of regional ecosystems. How to write your land management objectives and manage

your land with wildlife in mind. Learn to use basic tools such as plant identification, soil sampling, using maps and compasses, and GIS/ GPS information to manage your land.

Woodscaping Your Woodlands & Firewise Management (May 1 & 2)

Jordan Lake Educational State Forest, Chapel Hill, N.C.

Friday, May 1 from 9 a.m. to 5 p.m. and Saturday, May 2, from 9 a.m. to noon.

Class Description: A general overview of managing your forest land—how topography and soil affect the forest type and a tour of harvesting methods. Basic information on forest insects and diseases, pasture management, and secondary forest products. Reducing the risk of wildfire loss by becoming “Firewise” in your backyard.

Native Landscaping & Water Management (May 15 & 16)

North Carolina Zoo, Asheboro, N.C.

Friday, May 15 from 9 a.m. to 5 p.m. and Saturday, May 16, from 9 a.m. to noon.

Class Description: A general overview of choosing and planting native plants for your property. Care of urban trees and basic information on invasive plants. Solving storm water problems with plants and piedmont prairie restoration.

Stewardship, Recreation, & Liability (May 29 & 30)

Montgomery Community College, Troy, N.C.

Friday, May 29 from 9 a.m. to 5 p.m. and Saturday, May 30, from 9 to 11 a.m.

Class Description: Planning trails on your property, plus the basics of land ownership liability, recreational income opportunities, and conservation easements. Explore management practices in the field and apply your new knowledge and skills. Finalize your goals and objectives.

Graduation ceremony and lunch will be held at the last workshop on Saturday, May 30, for those who have attended at least 3 of the 4 workshops.

Registration:

The cost is \$50.00 per person per session, with spouse or other family member at \$25.00. Registration includes lunch and snacks on the first day of each workshop as well as workshop-related materials. Reserve your spot for the whole course by registering early!

Registration deadline is one week prior to the session desired. Credit toward NC Environmental Education Certification is available, as well as CEU credits. Workshops also count as electives toward the Asheville Board of Realtors ECO Certification.

For more information, registration and location of other workshops visit http://www.cradleofforestry.com/cradle_of_forestry/documents/Piedmont_2009_brochure.pdf or contact Amy Garascia, Program Coordinator, at amysworkshopinfo@aol.com or 828-884-5713 ex. 26.

The course is sponsored by: the Cradle of Forestry Interpretive Association, North Carolina Division of Forest Resources, NC Cooperative Extension Service, USDA Forest Service, NC Zoo, NC Woodlands, Montgomery Community College, NC Wildlife Resources Commission, Land Trust for Central NC, and the U.S. Fish & Wildlife Service.

What Ecological Services Does

Endangered and Threatened Species Listing/Recovery/Delisting

The Ecological Services Division is responsible for administering significant parts of the Endangered Species Act. We have programs that work to conserve rare species before they need legal protection, and we determine whether to add a species to the *Federal List of Endangered and Threatened Wildlife and Plants*.

Once a plant or animal is listed as threatened or endangered, we work to coordinate efforts to recover that species. These efforts include providing funding to state agencies to protect these species and working with other government agencies, private companies and individuals to help them protect these plants and animals on their land.

Ultimately, the goal of the Endangered Species Act is to recover species to the point where they no longer need federal protection, and Ecological Services determines which plants and animals have recovered to the point they can be delisted.

Project Planning

There are a number of federal laws that instruct the U.S. Fish and Wildlife Service, as the nation's wildlife agency, to review various projects that are funded and/or authorized by the federal government. The Service's role is typically to identify impacts to fish, wildlife, and plants and their habitats from these projects and work to minimize or eliminate those impacts. The laws under which the Service reviews projects include: the Endangered Species Act, Fish and Wildlife Coordination Act, Clean Water Act, Federal Power Act, the Migratory Bird Treaty Act, and the National Environmental Policy Act. The project planning program also focuses on large scale planning and conservation efforts; working with others to identify and implement strategies to meet the long term needs of wildlife and people at the landscape level.

Partners for Fish and Wildlife

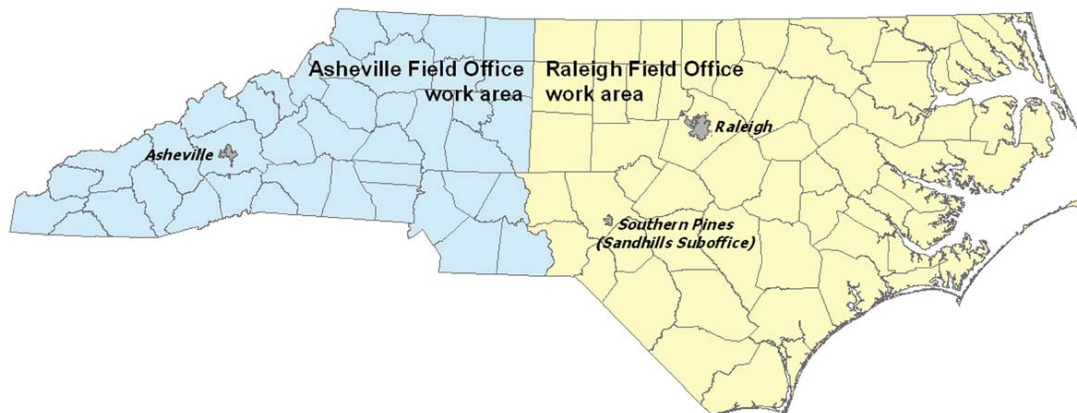
The Partners for Fish and Wildlife Program provides funding and technical assistance to private landowners to help them restore, improve, and protect fish and wildlife habitat while leaving the land in private ownership.

Environmental Contaminants

This program involves working with partners to prevent environmental contamination and to maintain the health of ecosystems; identifying contamination that adversely affects the health of fish, wildlife, and their ecosystems; serving as the federal trustee for fish and wildlife injured by contamination; and negotiating settlements from polluters to restore lost resources and their benefits to local citizens.

Coastal Program

This program focuses on restoring ecosystem health to bays, estuaries, and watersheds along the coastlines of the United States. Working with partners, the Coastal Program provides funding and technical assistance for projects to restore wetlands and seagrass beds, control invasive species, acquire rare or exceptionally important habitats, remove dams to allow fish passage to spawning areas, and provide community outreach regarding coastal fish and wildlife resources.



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 Review of N.C. Department of Transportation projects under the Endangered Species Act, Clean Water Act, Fish and Wildlife Coordination Act, and Migratory Bird Treaty Act mitigation bank review;
 Ext. 237



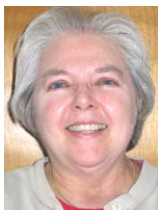
Bob Butler
Fish & Wildlife Biologist
 Aquatic macro-invertebrate and fish specialist; aquatic endangered species listing and recovery; imperiled aquatic species conservation;
 Ext. 235.



Mark Cantrell
Fish & Wildlife Biologist
 Hydroelectric project review; Endangered Species Act habitat conservation planning; federal project review under the Endangered Species Act, Clean Water Act, and Migratory Bird Treaty Act; stream restoration;
 Ext. 227



Nancy Cole
Office Automation Assistant
 Word processing, editing and proofreading; time and attendance processing, property management; records management; ext. 232



Robert Currie
Fish and Wildlife Biologist
 Terrestrial endangered species listing and recovery in Tennessee and Kentucky; bat and other cave fauna specialist; cave and abandoned mine protection specialist; Ext. 224



John Fridel
Fish & Wildlife Biologist
 Invertebrate and aquatic vertebrate endangered species listing and recovery; federal project review under the Endangered Species Act, Clean Water Act, Fish and Wildlife Coordination Act, and Migratory Bird Treaty Act; Ext. 225



Anita Goetz
Fish and Wildlife Biologist
 Habitat restoration and conservation on private lands; administrator of the Partners for Fish and Wildlife Program; Ext. 228



Gary Peeples
Fish and Wildlife Biologist
 Education and outreach specialist primary media and Congressional contact;
 Ext. 234



Laura Pickens
Information Technology Specialist
 Computer and GIS support, network administrator;
 Ext. 238



Allen Ratzlaff
Fish and Wildlife Biologist
 Endangered Species listing and recovery; federal project review under the Endangered Species Act, Clean Water Act, Fish and Wildlife Coordination Act, and Migratory Bird Treaty Act; Ext. 229



Nell Richard
Office Automation Clerk
 Receptionist; mail room administrator; vehicle maintenance;
 Ext. 221



Laura Rogers
Administrative Officer
 Budget Administration; contracting and personnel officer;
 Ext. 222



Bryan Tompkins
General Biologist
 Federal Project review under the Endangered Species Act, Clean Water Act, Fish and Wildlife Coordination Act, and the Migratory Bird Treaty Act; mitigation bank review;
 Ext. 240



Carolyn Wells
General Biologist
 Botanist; endangered species listing and recovery; state coordinator of the Endangered Species Act state grant program;
 Ext. 231



Troy Wilson
Fish & Wildlife Biologist
 Review of North Carolina Department of Transportation Projects under section 7 of the Endangered Species Act, Clean Water Act, Fish and Wildlife coordination Act, and Migratory Bird Treaty Act; Ext. 226.



Raleigh Field Office Staff Listing

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Tom Augspurger

Ecologist

Wildlife toxicology; environmental
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Ext. 21

Mark Bowers

Fish and Wildlife Biologist

Hydroelectric project review; federal project
review under the Endangered Species Act,
Clean Water Act.

Ext. 19

John Ellis

Fish and Wildlife Biologist

Hydroelectric project review; Endangered
Species Act habitat conservation planning;
federal project review under the Endangered
Species Act.

Ext. 26

John Hammond

Fish and Wildlife Biologist

Endangered species coordinator; military
projects; Endangered Species Act consultation
and habitat conservation planning.

Ext. 28

Howard Hall

Fish and Wildlife Biologist

U.S. Army Corps of Engineers civil works and
regulatory projects; commercial mitigation
banks; and Coastal Barrier Resources Act
(CBRA) determinations.

Ext. 27

Gary Jordan

Fish and Wildlife Biologist

Endangered Species Act consultation, Clean
Water Act – Section 404 coordinator for North
Carolina Department of Transportation
projects; permit and mitigation bank review.

Ext. 32



Front Row from left to right: John Ann Shearer, John Hammond, Susan Miller, Dale Suiter, Doug Newcomb; Second row from left to right: Mike Wicker, Patty Matteson, Joe Pittman, Leigh Mann, Sara Ward Back row from left to right: Tom Augspurger, David Rabon, Pete Campbell, Pete Benjamin, Howard Hall Not pictured: Gary Jordan, Mark Bowers, John Ellis

Patty Matteson

Public Affairs and Outreach Coordinator

Primary media and congressional contact;
Federal Junior Duck Stamp State coordinator.

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Leigh Mann

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Receptionist, Word processing, editing and
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Doug Newcomb

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Specialist*

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Ext. 14

Joe Pittman

Administrative Officer

Budget Administration; contracting

Ext. 13

David Rabon

Fish and Wildlife Biologist

Terrestrial and aquatic vertebrate species
recovery, listing and consultation under
Endangered Species Act.

Ext. 16

John Ann Shearer

Fish and Wildlife Biologist

Partners for Fish and Wildlife state coordinator.
Farm Bill/private lands coordinator.

Ext. 17

Dale Suiter

Fish and Wildlife Biologist

Recovery of threatened and endangered
plants and invertebrates, consultation,
national forest consultations and invasive
species control.

Ext. 18

Sara Ward

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contaminants/pollution ; water quality.

Ext. 30

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Partners for Fish and Wildlife and
Farm Bill Programs, Work area:
Catawba, Yadkin-Pee-Dee, Lumber
and Waccamaw River Basins.

Susan Miller

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