Service celebrates Rachel Carson 100th

Field Notes

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

Note from the Field Supervisors: Meeting The Service's Priorities

May 27 marked the 100th anniversary of the birth of Rachel Carson, a former U.S. Fish and Wildlife Service employee, whose writing inspired a generation to focus on the environment. We think *she would be proud of the work that* Service employee's are doing in North Carolina to meet the following six priorities of our agency: National Wildlife Refuge System: Conserving our lands and resources; Landscape Conservation: working with others; Migratory Birds: Conservation and management; Threatened and **Endangered Species: Showing** recovery success and preventing extinction; Aquatic Species: National fish habitat initiative and trust species; and Connecting People with Nature: Ensuring the future of conservation.

Throughout the next several pages you will see examples of how we are working through our priorities one issue at a time. Of course none of this could have been accomplished without our partners. We would like to think that there is a little bit of Rachel Carson in all of us.

Pete Benjamin and Brian P. Cole



Rachel Carson

May 27 marked the 100th anniversary of the birth of Rachel Carson, a respected ecologist and author whose message and writing style (which distilled often complex scientific concepts into an understandable and lyrical story) resounded with the American public and awakened a national desire for greater environmental protection.

Before achieving literary acclaim, Carson put her talents to use as an author and editor of articles on conservation and natural resource protection during her 15-year tenure with the U.S. Fish and Wildlife Service. As the editor in chief for all Service publications, Carson's idea for a series of articles focusing on several "jewels" of the agency's National Wildlife Refuge System resulted in her Conservation in Action bulletins, one of which explored ecology and wildlife management at Mattamuskeet National Wildlife Refuge in

Eastern North Carolina. One of the premier wintering grounds for waterfowl in the nation, the refuge was established in 1934 and provides essential habitat for migratory birds and other wildlife in and around 40,000-acre Lake Mattamuskeet, North Carolina's largest natural lake. Carson's "Mattamuskeet, a National Wildlife Refuge", published 60 years ago, provided readers with a glimpse of the refuge's natural wonders and enticed them to explore these lands and waters first hand (http://training.fws.gov/history/carso n/mattamuskeet.pdf).

Carson's strong conviction that people experience and connect with nature is evident as she guides the reader through the "story of Mattamuskeet". She later regarded her time there as one of her most memorable experiences in nature and often dreamed of returning to hear the winter symphony of the swans.

In celebration of Rachel Carson's life and legacy, the Raleigh Field Office has launched a Rachel Carson book club to explore her writing and its enduring impact. You, too, can honor Carson's contribution to protecting our natural world by exploring nature's wonders at a National Wildlife Refuge, a local park or your own backyard; reading one of Carson's books and sharing her message with others; or volunteering with local conservation groups to help protect wildlife habitat.

North Carolina and Beyond

Biologists Come Together on Rafinesque's Big-Eared Bat



Rafinesque's big-eared bat

Biologists from across the Southeast, including Asheville Field Office biologist Robert Currie, convened the Rafinesque's big-eared bat working group earlier this year as a step toward increased cooperation in the conservation of this bat.

Rafinesque's big-eared bat is found across the Southeast. In much of its range it has historically nested in the large, hollow trees of bottomland hardwood forests. As these forests were cut, the bat came to rely more and more on man-made roosting sites, such as abandoned buildings and wells, and bridges. The species has long been a concern of Service biologists worried populations may decline to the point that federal protection is warranted, however, the formation of the working group is a step towards heading off the need for such

protection. One of the first steps of the group is to create a centralized clearing house for information on the bat, to be housed at the Mississippi Museum of Natural History, in Jackson, Mississippi. They'll also be coordinating on projects such as monitoring the bats on National Wildlife Refuges and creating artificial roosts in areas affected by Hurricane Katrina.

Agencies meet to discuss long term transportation planning

Transportation projects are a community necessity, but they, and the development that follows, can lead to permanent degradation or even elimination of natural and cultural resources. But what if the needs of those natural and cultural resources were taken into account years before ground is ever broken for a new project?

The Service recently joined other state and federal natural resource and transportation agencies in hosting a Raleigh workshop looking at ways to incorporate natural and cultural resource concerns, such as endangered species and historic

sites, into long-range transportation planning.

Metropolitan Planning Organizations (MPOs) are locallevel agencies tasked with developing long-range transportation plans for their area. These plans forecast transportation needs 25 years into the future, based on the anticipated growth and transportation needs of their areas. The workshop provided an opportunity for MPOs from across the state to discuss with resource agencies how to share resource information, and how best to incorporate that information into their planning process.

It is hoped such communication and consideration will not only expedite environmental review of specific projects, but that transportation projects can be organized in such as way that allows for the protection, and even improvement, of natural and cultural resources.



NC DOT Road Project

Wolf Exhibit open at Pocosin Lakes



Red Wolf Dad and pups

Come visit the "Wolves and Wild Lands in the 21st Century" exhibit at the Walter B. Jones Sr. Center for the Sounds in Columbia, N.C. Developed by the International Wolf Center and the Science Museum of Minnesota, the exhibit features a beautifully mounted red wolf and four mounted gray wolves from different regions of North America, plus nine interpretive panels.

A self-guided tour through the exhibit invites the viewer to get involved in issues of wild land conservation, wolf-human conflict and coexistence, and the management of highly endangered wolves like the Mexican gray wolf and the red wolf. Visitors will gain an understanding of the wolf's natural history and the challenges to the species long-term survival.

Sponsored by the Red Wolf Coalition in celebration of the 20th anniversary of the reintroduction of the red wolf in North Carolina, the exhibit will run through August 17, 2007. The exhibit is open Wednesday through Saturday 10 a.m. to 4 p.m. and admission is free to the public. For more information about the exhibit, please contact the Red Wolf Coalition at (252) 796-5600 or via email at redwolf@redwolves.com.

Professional Guides Hone Skills in NC



Canoeists on the French Broad River in North Carolina

Nearly 40 professional outdoor guides converged on Black Mountain's Camp Rockmont in May for the 2007 Western North Carolina Watershed Seminar. The day-long event provided the guides with a chance to hone their outdoor skills through classes and interaction with biologists.

"We want people to have a deep understanding of the natural world. Guides want to provide their clients with the best possible service. We believe that improving guides' abilities to describe and interpret the world around them helps satisfy both goals," said Lindsay Green of the North Carolina Wildlife Resources Commission.

The seminar began with an overview of the state of the French

Broad River basin, provided by Hartwell Carson, the French Broad RiverKeeper. From there, the seminar broke into a number of concurrent field sessions, allowing the guides to interact with, and learn from, area experts. Topics included birding, tree and wildflower identification, fish identification, stream entomology, and geology.

The seminar concluded with a live-animal presentation by wildlife rehabilitators Wild for Life.
The seminar was the product of a partnership between with Service, the North Carolina Wildlife Resources Commission, Montreat College, and Appalachian State University, with support from Camp Rockmont and numerous area businesses.

Perils of Propagation - How Plant Lovers Can Help Protect Rare Plants

The arrival of spring starts many people thinking about their gardening and landscaping, and rare plants will always be an object of desire for some plant enthusiasts. While well-meaning gardeners may see home propagation and planting of imperiled plants as a natural extension of the recent shift toward gardening with native species and an effort to support the recovery of the species, quite the contrary may be true.

"As a plant lover, I'm thrilled to see people who care about plants and want to do their best to help conserve them. As a scientist I get worried about unintended consequences to ongoing efforts to restore rare plants in the natural landscape," said Service botanist Carolyn Wells.

Moving and growing protected plants outside of their native habitat can have a number of conservation implications, including generating confusion about native ranges and dispersal patterns and crossbreeding with more common species or varieties. Wells also stressed a bigger picture when it comes to protecting rare plants, "Plant conservation is more than ensuring the success of a particular species, but also seeing to it that the plant's habitat is also protected."

"There are wonderful outlets for people who want to help protect rare plants," said Wells. "One of the best is supporting efforts to conserve them in their natural habitat — whether through helping land conservancies acquire new land, or helping private and public land managers care for these plants on lands where they already grow."

Another way to help protect rare plants, continued Wells, is to be certain that any rare plants you're buying have been obtained legally and that the seller has the proper permits. A permit from the U.S. Fish & Wildlife Service is required to sell federally protected plants in interstate commerce.

A list of federally protected plants found in North Carolina can

be found at: http://www.fws.gov/nc-es/plant/plant.html.

A permit from the North Carolina Plant Conservation Program is required to move federally and state-protected plants. The list of state-protected plants can be found at: http://www.ncagr.com/plantind/plant/conserv/plist.htm.



Plants like the endangered mountain sweet pitcher plant can suffer from undocumented propagation and transplantation

The City of Boiling Spring Lakes and its Partners Receive Planning Grant

The City of Boiling Spring Lakes and its partners were the recipients of a \$106, 745 Habitat Conservation Planning Assistance Grant. The grant will allow the city and its partners to proceed with the development of a Habitat Conservation Plan (HCP) which will help protect the endangered red-cockaded woodpecker.

In addition to the RCW, the HCP will also help safeguard the habitat of the endangered rough-leafed loosestrife. There are also 12 more federal and state species of concern

such as the Venus flytrap, yellow fringeless orchid, Carolina gopher frog, Southern hognose snack, savanna indigo bush that depend on the longleaf pine ecosystem prevalent to Boiling Spring Lakes.

"We first met with the mayor, a city commissioner, a representative from Brunswick county and a representative from Congressman McIntyre's office in December 2005 to inform them what it means to have an endangered species



A pair of Red-cockaded woodpeckers. Male top right.

living in town," said Pete Benjamin, Supervisor, Raleigh Field Office.

BSL Grant Continued on Page 5

Coastal Plain

NC Birding Trail Coastal Plain trail now open



Visitors on Pea Island. Pea Island National Wildlife Refuge is one of eight refuges located on the Coastal Plain trail portion of the NCBT.



An Osprey on Roanoke River Refuge is just one of the species visitors may see.

On June 19 at Hammock's Beach State Park the N.C. Birding Trail celebrated the grand opening of the recently completed Coastal Plain portion of the trail. The N.C. Birding Trail is a driving trail that links great birding sites across the state. The Trail will be implemented in three regional components: coast, piedmont and mountains.

The Coastal Plain portion of the trail has 102 sites where visitors can experience exceptional birding. Site descriptions are already available at the following website: www.ncbirdingtrail.org. The 172 page spiral-bound NCBT guide book will available for sale through the N.C. Wild Store, www.ncwildlife.org/fsindex 09 wild d.htm, or by calling 866-945-3746.

The trail is a multi-agency effort being implemented statewide in three regional components beginning with the coast. Site nominations for the Piedmont portion of the trail have been completed. The mountain region will open for nomination in fall 2007.

The retail price of the guide is \$10.

For further information on the birding trail visit www.ncbirdingtrail.org, or call (919) 604-5183.

BSL Grant from Page 4

"City leaders, Congressman McIntyre and his staff along with Dan Bell of The Nature Conservancy, and representatives from the Wildlife Resources Commission have continued to work cooperatively with us on this issue."

On April 12 there was the first meeting and formulation of an HCP Steering Committee. Partners consist of The Nature Conservancy, The North Carolina Wildlife Resources Commission, the city of Boiling Spring Lakes, city residents, Brunswick County Board of Realtors and the U.S. Fish and Wildlife Service.

This group's purpose is to work together to develop a HCP in a timely manner that meets the participant's goals and objectives and to communicate effectively with those impacted by the development of this HCP.

Besides local involvement both state and federal elected officials have been instrumental in assisting the residents and city officials. State Representative Bonner Stiller, representing the 17th District, introduced a House Bill 1152 that would authorize the city of Boiling Spring Lakes to participate in and fund a habitat conservation plan for the red-cockaded woodpecker and other endangered species as a public enterprise.

The Bill is currently up for review in the Senate. For the latest update visit: www.ncleg.net/Legislation/Legislation.html

Fish Weir Installed on Little River where Lowell Dam removed



Photo Top left: Joshua Raabe, Graduate Student N.C. State University (center) checks the fish weir. Photo Right: Fish wier on Little River (*Photos by Mike Wicker*)



In January 2006 the Lowell Dam was removed on the Little River in North Carolina by Restoration Systems, a Raleigh based company that specializes in environmental restoration and mitigation. To help study the effects of dam removal on fish migration a fish weir has been installed on the river at the old dam site.

Joshua Raabe, a graduate student at N.C. State University, is overseeing the project which is part of a study by the N.C. Cooperative Fish and Wildlife Research Unit at N.C. State University. Funding for the project was provided by Restoration Systems and the U.S. Fish and Wildlife Service.

Migratory fishes such as
American and hickory shad live
most of their lives in the ocean, but
spawn in coastal rivers. Dams and
other obstructions on rivers prohibit
the fish from migrating to their
spawning grounds and have caused
a significant decline in anadromous
fish populations in North Carolina.
The placement of the weir on the
river will allow Raabe and others to
record the types and numbers of fish
moving up the river where Lowell
Dam once stood.

The weir is designed such that fish are herded in two cages where they are released each morning after being recorded. The weir is made of plywood and PVC and it is designed so canoes and other small boats can float over it. The weir will be in place from March to May 2007 and again during spawning season in March to May 2008.

"The highest activity occurred between April 23 and May 3 where we collected data on 372 American shad," said Raabe. "Most of these were moving downstream and it was clear from the condition of the females that spawning events had occurred," said Raabe "A few of these were tagged individuals that we had handled at the weir earlier in the season, and it was great to recapture these and see how long they had been in the upstream habitat," said Raabe.

Raleigh Staff works to provide buffers around Wildlife Refuges



Landfills such as these dot the Eastern North Carolina landscape

The Environmental
Contaminants staff with the Raleigh
Field Office has provided technical
input to State regulators with the
North Carolina Department of
Environment and Natural Resources
Division of Waste Management
(NCDWM) and others regarding
inclusion of 5-mile protective buffer
around NC National Wildlife
Refuges (NWRs) to prevent and
mitigate potential impacts that may
result from landfill siting, design,
and operation.

A recent version of the Solid Waste management Act (SWMA) of 2007 embraced that recommendation and included an additional provision which would prohibit construction of future landfill waste disposal units within 5 miles of the outermost boundary of NWRs in the state. Six of 11 NC refuges are located within five miles of six existing, six closed, or two proposed landfill sites.

A landfill moratorium was enacted by the NC General Assembly last year authorizing a solid waste management study focused on siting, design, and operational requirements for landfills in areas susceptible to flooding, areas with high water tables, and other

environmentally sensitive areas. Recommendations prompted by that study were incorporated into the SWMA of 2007 which also contains requirements for new landfills to conduct an environmental impact study and meet additional landfill standards for environmental protection.

Protective buffers for NWRs are important because landfill impacts to refuges can occur over large distances and such impacts to NC refuge resources have already occurred. Specific impacts to NWRs that may result from improper landfill siting, design and operation that may be minimized with a 5-mile refuge buffer provision include: diminished public enjoyment of NWRs and resulting reduction in visitation (viewscape, noise and odor impacts), alteration of wildlife foraging patterns (given attractive nuisance of landfilled wastes to wildlife), reduced wildlife habitat quality, modification of local hydrology patterns, water quality degradation, altered functions and values of local wetland areas, and increased vehicular traffic and impacts to wildlife.

The Raleigh FO will continue to provide technical assistance as part of the Solid Waste Issues Working Group as the SWMA deliberations continue. Contact Sara Ward (919/956-4520 x30, sara-ward@fws.gov) for additional details.



Pocosin Lakes National Wildlife Refuge. Photo by Dale Suiter.

Mountains

Asheville Service Employees Honored by DOI

Laura Rogers and Robert Currie of the U.S. Fish & Wildlife Service's Asheville Field Office were recently awarded the Department of the Interior's Meritorious Service Award, the Department's second highest honor.

The award is given for an important contribution to science or management, a notable career, superior service in administration or in the execution of duties. Only seven of the awards were given to Fish & Wildlife Service employees this year.

Currie is a pioneer in the protection and recovery of federally-protected bats, including the endangered Indiana, gray, and Virginia big-eared bats.

Recognizing early on that human disturbance of bats in caves was a major cause of population declines of many cave-dwelling bats, Currie worked with a variety of partners to design and construct dozens of gates and fences throughout the United States that restrict human access to caves and mines while allowing bats to pass – a practice that has significantly contributed to the ongoing recovery of the gray bat and progress in reversing the decline of many other species. Currie also placed several plants on the federal list of threatened and endangered species and worked closely with the North Carolina Wildlife Resources Commission to reintroduce the peregrine falcon in Western North Carolina, contributing to its recovery and its 1999 removal from the federal list of threatened and endangered species.

Rogers has worked for the Asheville Field Office for more than 26 years, starting as a clerk stenographer. Today she is the office's administrative officer, managing budgetary and human resources matters.

She frequently provides administrative assistance and guidance to other Service offices, including the Southeastern Regional Office. Under her direction, the Asheville Field Office has never overspent its budget, and she has worked to save the Service money by making it possible for staff from other Service programs to co-locate with the Asheville Field Office.

Asheville Biologist Leaves Service



Denise Moldenhauer

Asheville Field Office biologist Denise Moldenhauer Leaves the Service. Her five years of service are marked by the creation of a new population of the threatened Schweinitz's sunflower, the development of techniques to help the North Carolina Department of Transportation (NCDOT) minimize the spread of invasive plants, and decreased stream and wetland impacts from development projects across the western half of the state.

Following graduate school at the University of Kentucky, Moldenhauer moved to Asheville in 2001 to work for the USDA Forest Service. In 2002 she accepted a position with the Asheville Field Office, reviewing projects permitted by the U.S. Army Corps of Engineers (Corps). Denise worked with the Corps to help minimize stream and wetland impacts from their projects and tried to make certain that long-term

and secondary impacts of the projects were considered. Her duties changed in 2004 as she accepted a position reviewing NCDOT projects. Working closely with the NCDOT, she helped establish a new population of Schweinitz's sunflower in Stokes County, helped focus attention on minimizing the spread of invasive plants at NCDOT construction sites, and strived to decrease impacts on streams and wetlands from NCDOT projects.

With increasing development in Western North Carolina, Denise's work with both the Corps and NCDOT has been a voice for conservation and responsible development in the changing landscape.

Denise and her husband are moving to Virginia, their home state.

Rash of River Impoundments Altering WNC Landscape

In the first four months of 2007, the Service's Asheville Field Office has commented on, or is in the process of commenting on, five impoundment projects in Western North Carolina that would collectively turn more than three-miles of free-flowing streams into ponds.

"These impoundments are a little-noticed facet of the region's increasing development, but they have serious and near-permanent impacts on the streams where they're built," said Bryan Tompkins, a biologist with the U.S. Fish & Wildlife Service.

The impoundments are increasingly used by developers to create artificial lakes in an effort to entice potential buyers, much to the detriment of area streams. The region's native fish and other aquatic life are adapted to fast-moving streams with highly-oxygenated water, and stream bottoms covered in sand, gravel and rock. An impoundment brings that section of stream to a near standstill, the water's oxygen level drops, and the stream bottom is covered in



Mountain stream likes this one are being diverted to create artificial lakes and ponds in Western North Carolina.

sediment. This eliminates spawning and foraging habitat for native fish; creates a barrier dividing populations of aquatic animals, creating two smaller and more vulnerable populations; and alters downstream water temperature, dissolved oxygen levels, and sediment movement – all affecting the health of the steam. Also terrestrial habit is lost as the impoundment fills.

"If someone is determined to have an artificial lake or pond, our recommendation is to build it outside the natural stream bed, so water is channeled from the stream to the impoundment and the overflow is channeled back to the stream. The impacts are far less," said Tompkins.

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 Review

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.

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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U.S. Fish & Wildlife Service

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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

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