



U.S. Fish & Wildlife Service

Southeast Region

SOUTHEASTERN CURRENTS

SEPTEMBER 2008 NEWSLETTER

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Restoring wetlands improves wildlife habitat, helps the environment, and protects from wildfires

With the Evans Road Fire having a prominent position in news in eastern North Carolina this summer, it's been hard for Pocosin National Wildlife Refuge staff to focus attention on other projects. As of August 22, the fire was 95 percent contained, and there were still some fire spots.

Refuge Fire Management Officer Vince Carver "still has stories to tell" about the time leading up to the Evans Road Fire. "The Evans Road Fire isn't over yet. But, at least it's calmed down enough to allow us to think about why the fire burned the areas it did. A lot of work was done in the months and years prior to this fire. Two projects really affected the impact of the Evans Road Fire- without them, the block of pocosin west of Evans Road would have likely been a part of this fire—and the homes on Shore Drive would have been at more extreme risk."

The first project was the Evans Road Fire Break. Having that defensible space already established saved the day more than once on this fire. The second was a hydrology restoration project - an area of the refuge where the draining had been greatly reduced in an effort to restore natural water levels."

Prior to the Evans Road Fire, a partnership between the North Carolina Department of Environment and Natural Resources (NCDENR) and the Service restored 7,500 acres of previously drained pocosin wetlands at Pocosin Lakes National Wildlife Refuge.

Although the wetland restoration was primarily to minimize the impacts of local nutrient pollution and improve water quality and wildlife habitat, it also helped to greatly reduce the potential for wildfires like the Evans Road fire.

Saturation of the soils limits the potential for peat ground fires to spread while still allowing the above-ground vegetation to burn (a necessary component of pocosin ecosystems). "With help from our friends at NCDENR we've been able to get a lot of our hydrology restoration work done much more quickly than we could have otherwise" said Refuge Manager Howard Phillips; "and it appears to have paid big benefits on the Evans Road Fire."



Aerial view of Evans Road, showing the hydrology restoration site in the foreground on the west side of Evans Road, the Evans Road Firebreak alongside the road, and, in the background, the aftermath of the Evans Road Fire. August 3 photo by Tom Crews.

Pocosins are unique wetlands, also known as southeastern shrub bogs. They are characterized by a very dense growth of mostly broadleaf evergreen shrubs with scattered pond pine. The thick layer of peat soils underlying pocosins act as nutrient sponges over thousands of years, locking-up nutrients, carbon, and other pollutants in vegetation and the ever- deepening soil layer.

"Our restoration efforts have resulted in ecosystem resiliency and have secured 24,000 tons of carbon annually, " said Pete Jerome, the Service's North Carolina Refuge supervisor.

When pocosins southeast of Lake Phelps were drained for farming and peat mining (which is no longer being done in this area), their nutrient retention functions were lost and some of the nutrients they held were released to adjacent waters.

In addition, drainage makes pocosins drier which increases the frequency and severity of wildfires.

When these lands became part of Pocosin Lakes National Wildlife Refuge in 1990, managers began restoring natural water levels. The NCDENR partnership has accelerated the ongoing restoration efforts.

Concern about nutrient pollution prompted staff at Pocosin Lakes and Alligator River national wildlife refuges along with NCDENR to restore natural water levels on previously drained pocosins to offset the excess nitrogen by re-establishing the pocosin's function as a natural nutrient sponge. "This approach of off-setting new nitrogen pollution in the watershed with an equivalent amount of local nitrogen reduction is a win-win for the environment" according to Service contaminant biologist Sara Ward, "the restoration reduces the potential for water quality degradation where nutrient enrichment is already a problem and at the same time enhances habitat for wildlife by saturating these lands again."

The project involved elevating more than seven miles of roads at Pocosin Lakes National Wildlife Refuge. Raised roads act as levees to help re-flood the historically drained peatlands. Raised roads also allow better access to fight fires when they occur. Water control structures are then used to help maintain optimum water levels. When complete, 7,500 acres will have been restored through cooperative funding and technical assistance from NCDENR and the Service's refuge, coastal and environmental contaminants programs. These restored pocosins will retain about 1.5 million pounds of nitrogen and 48 million pounds of carbon each year which will help water quality in the Pungo River and the Pamlico Sound.

The current project, although providing substantial environmental benefits, addresses only the most severely altered lands on the refuge.

Over 15,000 additional acres on the refuge are targeted for similar efforts, including portions east of Evans Road where wildfire suppression efforts are currently underway.

By managing the water levels to allow peat soils to remain wet, peat ground fire danger has been reduced on portions of the refuge where the restoration is complete. Future restoration activities planned by Refuge Managers will continue to minimize fire threats.

Submitted by Bonnie Strawser, Alligator River/Pea Island National Wildlife Refuges, Manteo, North Carolina

Behind the Scenes--



Serena Rinker wades for a water sample. FWS Photo.

Biologists in action at A.R.M. Loxahatchee National Wildlife Refuge

Sitting in an isolated lab holding a test tube? That may be in their job description, but for these action-minded women it is only one part of their daily activity. Tiffany Trent, Angela Markovich, Serena Rinker, and Rebekah Gobble fly helicopter missions and drive airboats through the Everglades as part of their normal work of obtaining water samples for the Comprehensive Everglades Restoration Program or CERP. If you don't think this might be a little different, just think – they are jumping into water with alligators, snakes and bugs all around them. They need several ounces of water from each sampling site. The water at the site could be as little as one inch or more than three feet deep, and the bottom could be smooth or muddy. There might even be a hole or two to step in!

Some of the sampling sites are readily accessible by airboat but others require helicopter insertion. Almost all locations require that the workers get wet. Waders are worn to stay dry, as long as you don't slip. The typical dress gear for the flight crews are nomex flight suits, flight helmets, ear plugs, waders and personal floatation devices or PFDs. Employees in the airboats wear the normal Service uniform, ear muffs, and PFDs. Teams are always used for the helicopter missions and must be flight certified. Airboat work is usually done solo, meaning the employee must be able to drive an airboat and be certified. All airboat crews carry radios to maintain contact with base.

“One really great point about the sampling, is the incredible beauty around you,” observed Serena Rinker. “One day I saw a white water lily floating before me and right in the center of the lily was a grasshopper. It was so beautiful.”

A.R.M. Loxahatchee employees have their own water sampling goals and also work with South Florida Water Management District in separate missions. All water sampling missions have to be performed within a four-hour timeframe. The first sample collected has to be processed within four hours at the lab. There is a race with the clock on some days.

A typical sampling day begins in the Water Quality Lab where the equipment to be used is calibrated and gathered. If an airboat is being used, the equipment is placed aboard and the crew can leave for their first site. If the crew will be flying that day, the trip to the helipad is next. Flights are usually made without the doors attached for easier entry and exit. The doors are usually removed just prior to loading. After loading the equipment under the pilot's supervision, the team briefs the pilot with the mission specifications and any special requirements, including verifying the pilot's qualifications and aircraft mission certification. The pilot then briefs the team on all flight and safety information, including emergency procedures. Safety is always the first priority.

After the briefings, the helicopter flight begins with a call to the ARM Loxahatchee NWR flight dispatcher, Jean Ryan. “The dispatcher has to maintain communications with the helicopters,” says Jean, “lives could depend on it.”



Angela Markovich. Photo by Chuck Ryan.

Helicopters are required to check in with flight dispatch every 15 minutes and whenever they are taking off or landing at one of the sampling sites. This simple safety check is sometimes more difficult than it would appear because of radio communication problems. ARM Loxahatchee Refuge has a couple of radio “dead” zones.

The helicopter lands some 20 to 30 yards from the site to prevent mixing of the water by the prop. The team has to wade to the site, acquire the samples (up to seven bottles of water), download data from on-site field computers, and return to the helicopter. Getting back into the helicopter is not easy – the helicopter is on floats. The floats have no handles or steps. Each individual has to pull themselves up. “Sort of like getting out of a swimming pool,” says Rebekah Gible, “if you have to, you can usually grab the bottom of the helicopter door to help.”

Airboats can get much closer, even to the point where the person might not have to get wet. Airboats are primarily used to gather electronic data from the field computers. After the samples are collected, it is on to the next site.

After all the sites have been sampled within the required four-hour timeframe, it is a race against the clock to get the samples back to the Water Quality Lab to begin processing - but that is another story! More photos in [Photo Album](#).

Submitted by Chuck Ryan, A.R.M. Loxahatchee National Wildlife Refuge, Boynton Beach, Florida

Bragging Rights --



Author and facilitator Patricia McGlashan talks with a participant during the recent Outdoor Inquiries Workshop. Photo by Amanda Patrick.

Wolf Creek National Fish Hatchery hosts newly crafted national environmental education training

First Hand Learning, Inc. of Buffalo, New York, the Friends of Wolf Creek National Fish Hatchery, Inc., and Wolf Creek National Fish Hatchery hosted a fantastic day of hands-on, nature-based instruction to help debut and promote First Hand Learning’s new Outdoor Inquiries Workshop. The one-day workshop, held in July, introduced teachers and informal educators to strategies and tools for using the outdoors to promote student engagement in inquiry investigations.

Patricia McGlashan, one of the main authors and designers of the new program, attended the event to serve as the facilitator. Each participant at the workshop received a copy of the new book, a toolkit to further facilitate outdoor explorations in the classroom, lunch, and snacks - all of which were provided free of charge through the generous contributions of First Hand Learning, Inc, the National Science Foundation, and the Friends of Wolf Creek National Fish Hatchery, Inc. Costs for the workshop were estimated at \$3,500.00 as 27 people benefitted from the day’s training and materials. For more information, please see www.firsthandlearning.org or www.friendsofwolfcreeknfh.com



Participants of the Outdoor Inquiries Workshop at Wolf Creek National Fish Hatchery enjoy the outdoors as they investigate the area around the Visitor/Environmental Education Center. Photo by Amanda Patrick

Submitted by Amanda Patrick, Wolf Creek NFH, Jamestown, Kentucky



Meeting participants enjoy one of the hands-on activities during the August 7 gathering. Photo by Amanda Patrick.

Children, health and nature: Wolf Creek National Fish Hatchery leads movement in Kentucky

For the staff at Wolf Creek National Fish Hatchery, working in the outdoors and being connected to nature is a truly “natural” fit. Whether it involves working in a raceway to grade fish or taking a group of students on a stream hike, Wolf Creek personnel stay connected with nature each and every day in their daily tasks. On August 6, Wolf Creek spearheaded a new movement by hosting a grass-roots level forum on the health benefits of getting kids outdoors. More than 25 potential stakeholders, including physicians, health department workers, teachers, and elected officials were invited to the workshop featuring two experienced and enthusiastic speakers. They were Jane Eller, executive director for the Kentucky Environmental Education Council, and Margo Riggs, a career epidemiologist with the Centers for Disease Control in Atlanta, Georgia. Judy Toppins, regional outreach coordinator for the Fisheries Program, also spoke on the Service’s efforts to connect children with nature. The hatchery provided a variety of materials, including various website listings, hand-outs, booths focusing on a variety of topics such as the Biologist-in-Training (BiT) Program, the National Institute of Health’s We Can! Initiative, and the Kentucky Association of Environmental Education. A wealth of environmental education books were on sale in the hatchery’s gift shop. Each participant also received a copy of the “Get ‘Em Outside” Rx pads recently developed by Judy Toppins, Amanda Patrick, the hatchery’s outreach and environmental education specialist, and a team of other partners in Kentucky.



Jane Eller, executive director for the Kentucky Environmental Education Council, presents her presentation on “Get ‘Em Outside.” Photo by Amanda Patrick.

On April 7, James Gray, Wolf Creek NFH Project Leader, Amanda Patrick, and Judy Toppins attended a meeting at Mammoth Cave National Park. This meeting was a follow-up to the first federal interagency meeting organized by the hatchery in January. The August meeting stressed the health benefits of connecting children with nature. During the gathering, the staff of Wolf Creek NFH was recognized for their leadership in educating people from diverse backgrounds about the importance of getting kids outdoors. A task force was formed to organize an educational campaign emphasizing the health benefits of the outdoors. Amanda Patrick will serve on that task force.

Submitted by Amanda Patrick, Wolf Creek National Fish Hatchery, Jamestown, Kentucky

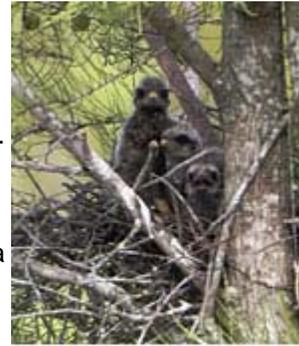


Adult male with apple snail. Photo courtesy of Ed Bullington.

Everglade snail kites nesting at A.R.M. Loxahatchee National Wildlife Refuge!

The A.R.M. Loxahatchee National Wildlife Refuge consists of the northernmost portion of the remaining Florida Everglades marsh ecosystem, along with several adjacent wetland areas or impoundments. Staff members are excited to announce there are 10 endangered Everglade snail kite nests in one of the smaller wetland areas just southwest of the refuge entrance! These nests are particularly important because snail kite nesting is low to non-existent in south Florida this year.

On June 18, refuge staff and researchers from the University of Florida surveyed the entire 32-acre wetland known as the C-8 Impoundment and discovered three eggs in the first-identified snail kite nest. They also found five other nests. Since that time, four additional kite nests were seen in the impoundment. Most nests have eggs, and some have chicks. The chicks from the original nest left the nest by the end of August. The adults will continue to feed them for an additional four to six weeks. Refuge staff will continue to monitor all of the nests weekly until the breeding season is completed. Visitors to the refuge can observe the nest with three chicks from a nearby levee, with the assistance of a spotting scope.



Three Chicks. Photo courtesy of Ed Bullington.

The Everglade snail kite is a critically endangered species found only in appropriate aquatic habitats in central to southern Florida, Cuba, Central America, and South America. Because its primary food is the native aquatic apple snail, the snail kite is tied to habitats where the bird and its food source can live and reproduce. Snail kites also eat non-native aquatic snails, but these are not as nutritious. Typically, the kite's primary nesting areas are in the refuge and other parts of the Everglades marsh, as well as along the edge of Lake Okeechobee. However, due primarily to the drought of 2001 and subsequent droughts affecting prey and breeding, snail kite nest numbers in recent years have been low in these areas. The entire Florida snail kite population could potentially be well less than 1,000 individuals.

Snail kites are medium-sized raptors, related to hawks. The male's coloration is slate black with red beak and legs. The female is dark brown with white streaking on the face and chest, and has a yellow or orange beak and legs. Both males and females have a down-curved beak, allowing them to easily capture and eat the snails. Both sexes also have a white band on the tail near the body.

Submitted by Cindy Fury, A. R. M. Loxahatchee National Wildlife Refuge, Boynton Beach, Florida



An endangered species tri-fold display setup in Warm Springs National Fish Hatchery Aquarium during the month-long coloring contest. Photo by Jaci Zelko.

Warm Springs National Fish Hatchery celebrates Endangered Species Day with a coloring contest

A coloring contest was held during the month of April in celebration of Endangered Species Day (observed May 16). Endangered Species Day presents an opportunity for people to learn about the importance of protecting endangered species and suggests actions that people can take to help protect our nation's disappearing wildlife and their habitats. The contest was open to all children ages 4 to 12. A tri-fold display was set-up in our aquarium. The display contained information such as the meaning of "endangered" and how citizens can help. It showcased eight endangered species. Kids chose from coloring pages featuring the shortnose sturgeon, American alligator, bald eagle, polar bear, grizzly bear, green pitcher plant, Florida manatee, and eastern indigo snake. Many beautiful entries were received, and one winner,

Alex Smith of LaGrange, Georgia, was selected. Alex received fishing tackle, a certificate of



Contest winner Alex Smith's beautiful rendition of a green pitcher plant was selected as the winning entry.. Photo by Carlos Echevarria.

appreciation, and lots of educational pamphlets and brochures. The winning artwork was displayed in our aquarium for all visitors to see.

Submitted by Jaci Zelko, Warm Springs National Fish Hatchery, Warm Springs, Georgia



Front to back: Teacher Miranda Rehberg and Dr. Nate Johnson (University of Florida) monitor the condition of anesthetized mussels, while teachers Melba Adkins and Sally Sims preserve a DNA. Photo by Sandy Pursifull.

Florida teachers experience field research at the elbows of scientists

Teachers teamed with Service biologists from the Panama City Ecological Services Field Office this summer to experience the use of science in a field setting. The Science Collaboration: Immersion, Inquiry, Innovation (Sc:iii) program pairs Florida panhandle educators with experienced scientists to participate in field research, becoming both scientists and science educators. The program is designed to promote experiences for educators in the natural sciences. The teachers, working with Field Office biologists, participated in several types of field research, including a freshwater mussel study, rare plant surveys, and a seagrass health evaluation. Their primary research project investigated a non-lethal DNA collection technique for freshwater mussels. This experience allowed them to work with Service biologists and ecologists as well as with other federal agencies, state agencies, and universities. The success of the Sc:iii program is unmistakable from the teachers' enthusiasm, inquisitiveness, and desire to take these experiences back to their classrooms.

Submitted by Sandy Pursifull, Panama City Ecological Services Field Office, Florida

Wolf Creek National Fish Hatchery hosts Critters in the Creek station at Talking Trees Children's Trout Derby

Wolf Creek National Fish Hatchery's Deputy Project Leader Sheila Kirk and Environmental Education/Outreach Specialist Amanda Patrick participated in the seventh annual Talking Trees Children's Trout Derby in Cherokee, North Carolina. A large crowd of children eager to fish, blue skies, and rippling, crystal clear water provided a successful event. Wolf Creek NFH staffed one of several booths dedicated to educating those in attendance about the environment and how to better care for it. The Wolf Creek staff featured the new Biologist-in-Training (BiT) program by focusing the booth on stream surveying and macro invertebrate identification. Hundreds of children greatly enjoyed stopping by the hatchery's booth, never expecting to find such an array of aquatic critters, ranging from mayflies to stoneflies to water pennies. The event was hands-on in every way. Both staff members greatly enjoyed spending a day out-of-doors, wading in the beautiful stream, and working with the various children on hand to flip over rocks and further hone their skills of young, fledging biologists. More photos in [Photo Album](#).



A view of the many trout derby participants as the early morning sun rises. Photo by Amanda Patrick.

Submitted by Amanda Patrick, Wolf Creek National Fish Hatchery, Jamestown, Kentucky



Campers view live turtle. Photo by Allen Holliday.

Campers enjoy exploring outdoors at Black Bayou Lake National Wildlife Refuge

On July 17, 2008, Black Bayou Lake supported the "Let's Go Outside" initiative when they hosted a fun day for the Louisiana Hemophilia Foundation summer camp - Camp Wounded Knee. Camp Wounded Knee is for children throughout Louisiana between the ages of 6-16 with a bleeding disorder. Due to the magnitude of this disease, these children rarely have a chance to just explore the outdoors. This event was enjoyed by 50 campers, 15 camp counselors, and five Louisiana Hemophilia Foundation staff members. The campers participated in such activities as exploring the nature trail for interesting critters and plants, seining and identifying aquatic life in the pond, feeding animals in aquariums, creating and performing wildlife puppet shows, and holding a live turtle! The event was held at the Black Bayou Lake Environmental Education Center from 9 a.m. until 2 p.m. Black Bayou Lake NWR and the Louisiana

Hemophilia Association hope to make this an annual event.

When a staff member asked one camper what he thought about his experience, the camper said: "When I first heard about the field trip, I thought it was going to be just ok, but it was really cool! I learned some new stuff and the day was fun!"

Submitted by Sharon Fuller, Black Bayou Lake National Wildlife Refuge, Farmerville, Louisiana

Beach project brings back birds, attracts turtles

Hurricane Katrina wreaked havoc on the beaches of Harrison County, Mississippi, on August 29, 2005. Now, three years later, the U.S. Army Corps of Engineers is working with the U.S. Fish and Wildlife Service to restore those beaches and other areas in coastal Mississippi. As a result of Hurricane Katrina, an emergency beach re-nourishment, authorized under Flood Control and Coastal Emergencies PL 84-99, has been underway since October 2007. Not long after construction began, the biological monitors posted at the site by the Corps noticed that least terns, historically known to nest along that stretch of beach, had returned to nest for the first time since the hurricane. Although the presence of the nesting birds limited the location and amount of work that could be completed by the Corps, the birds were a welcome sight and sign of recovery.

Other wildlife species also have and will benefit from the newly established beach and dune system. These beaches are designated critical habitat for wintering piping plovers that nest near the Great Lakes and then fly south to take advantage of mild Mississippi winters. On the night of August 9, 2008 a sea turtle, most likely a loggerhead, nested on the beach against the dune covering the seawall.

Nesting sea turtles in Mississippi typically prefer the pristine beaches of the barrier islands that create the southern border of the Mississippi sound over the man-made beaches along the mainland. There only has been one other recorded sea turtle nest on the mainland within the last 25 years. The new nest was fenced off and covered with caging material to prevent



Sea turtle tracks lead the way from the Mississippi Sound to a nest (right bottom corner) that was laid at the base of the newly restored dune near Pass Christian, MS. Photo by Diane Bateman.

predators from depredating it. The Service will monitor the nest for signs of hatching which usually takes about 60 days, then the hatchlings will be caught, and the species will be verified. The hatchlings will then be transported past the predator rich waters of the Mississippi Sound and released into open water on the southern side of the barrier islands where they will hopefully survive to produce the next generation of Mississippi sea turtles. More photos in [Photo Album](#).

Submitted by Sabrina Chandler, Mississippi Field Office, Jackson, Mississippi



The Savannah YCC crew laying pavers around the Cistern Trail. Photo by Patricia Metz.

YCC crews build facilities for mobility-impaired visitors to Savannah Coastal Refuges

The 2008 YCC Program at Savannah Coastal Refuges was a huge success! The complex hosted two crews this summer. A crew of three boys was stationed at Harris Neck National Wildlife Refuge, and a crew of five boys was assigned to Savannah National Wildlife Refuge. Both crews worked together to provide each refuge with its first fully-accessible facilities for mobility-impaired visitors. The first of two projects at Savannah National Wildlife Refuge was the installation of brick pavers at the site of the refuge's portable toilets. The boys got their feet wet learning how to cut and lay the pavers. Next, they moved down to Laurel Hill Wildlife Drive to lay pavers around the historic cistern and its adjacent trail, a project that was funded by funds specifically earmarked for the YCC program. The final project at Harris Neck National

Wildlife Refuge involved the installation of a paved walkway from the refuge's wildlife drive to the dike overlooking Woody Pond. Never before had visitors confined to wheelchairs or other mobility aides been able to safely get up on the dike for a good look at Harris Neck's impressive wood stork rookery. Guided by their adult leaders, former refuge law enforcement officer Ray Porter and volunteer Richard Hamlin, and other refuge staff, the boys leave the YCC program with a new skill and great pride in what they were able to accomplish together.



The finished Wood Pond walkway at Harris Neck National Wildlife Refuge. Photo by Patricia Metz.

Submitted by Amy Ochoa, Savannah Coastal Refuges Complex, Savannah, Georgia



Wheelin' sportsman hooks a catfish. Photo by Pat McCormack.

Sewee Visitor Center wheelin' and reelin' in summer

On June 7, the fifth Annual Lowcountry Catfish Roundup brought disabled men and women to the Sewee Visitor and Environmental Education Center for a day of fishing in the nearby Nebo Ponds. Before the day ended, the anglers had their stringers filled with catfish. The program, founded by the National Wild Turkey Federation's Wheelin' Sportsmen, provides disabled individuals opportunities to fish and enjoy the outdoors in a safe environment. Sewee Center volunteers assisted participants with their catch and served lunch provided by Sampit Bassmasters of Georgetown, South Carolina.

On June 14, the annual Youth Fishing Rodeo at the Sewee Visitor Center pond drew youngsters from across the Low Country. Ninety-three children enjoyed an outstanding day of fishing and caught a total of 311 pounds of catfish!

The grand prize for the largest fish of the Rodeo was awarded to Zharbray Livingston for a four-pound catfish! Prizes for the event were donated through the SEWEE Association, the friends group for the National Wildlife Refuges, and National Forest of coastal South Carolina. Every child received a fishing bag containing a BASS Fishing Fun and Facts booklet donated by BASS/ESPN Outdoors, as well as fishing items from the U.S. Forest Service and U.S. Fish and Wildlife Service. The sponsors of the rodeo included the Sampit Bass Masters. The Bassmasters group has supported the Rodeo for the past 11 years with valuable assistance and instruction for the children, as well as providing lunch to all who attend the event.

The Sewee Visitor and Environmental Center is a joint venture of Francis Marion National Forest and Cape Romain National Wildlife Refuge, located at 5821 Highway 17 N., Awendaw, just north of Charleston, South Carolina.

Submitted by Becky Ashley, Sewee Center, Francis Marion National Forest, Awendaw, South Carolina

Botanists blitz area cliffs for endangered plant

The U.S. Fish and Wildlife Service has teamed with botanists from a handful of organizations to rappel, scramble, and climb some of the most remote and rugged parts of the Western North Carolina mountains to track the endangered spreading avens.

The effort, which includes Asheville Ecological Services Field Office botanist Carolyn Wells, is a large-scale push to establish monitoring at as many spreading avens sites as possible. The data the scientists collect will enable them to conduct population viability analyses, giving them a clearer picture of population stability and barrier to recovery.

Spreading avens is only found on a handful of cliffs and rocky outcrops on some of the highest mountains in the Southern Appalachians, leading scientists to break out ropes and don climbing helmets in order to reach the sites. It was listed by the federal government as endangered in 1990, with one of the biggest threats being inadvertent trampling and associated erosion from hikers and climbers. It has also suffered from over-collection and some botanists suspect the encroachment of competing shrubs also poses a threat.



Chris Ulrey of the National Park Service prepares to tag a patch of spreading avens. FWS Photo.

Submitted by Gary Peeples, Asheville Ecological Services Field Office, North Carolina



Madeline Peeples adds to the Wonders of Water mural. Photo by Gary Peeples.

Wonders of Water festival

With water resource issues increasingly coming to the forefront, the Asheville, North Carolina, Ecological Services Field Office joined the Western North Carolina Nature Center in celebrating their Wonders of Water festival on August 9, in Asheville. 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.

Submitted by Gary Peeples, Asheville Ecological Services Field Office, North Carolina

Bonnetheads at the Bluff

Bears Bluff National Fish Hatchery (BBNFH) recently partnered with researchers from the South Carolina Department of Natural Resources (SCDNR) on a project involving wild caught, adult bonnethead sharks. Because of the increasing popularity of the bonnethead fishery in South Carolina, researchers are attempting to collect age and growth data to assist with management of the species.

Sharks were captured using gill nets, tagged externally and injected with Oxytetracycline (OTC) in hopes that a mark will be formed on cartilaginous tissues of the vertebrae. Then, the sharks were transported by boat to BBNFH and held by hatchery staff in 10-foot circular tanks at a density of four fish per tank for 30 days. Since bonnetheads are considered a food fish, they could not be immediately released due to the FDA mandated 30-day withdrawal period for OTC. While held in captivity, sharks were fed a variety of natural diets including blue crab, fish and shrimp.



Bonnethead shark swims away. Credit: USFWS

Long term mark and recapture data indicates a high recapture rate in waters near the hatchery. In fact, SCDNR biologists regard these waters as some of the best bonnethead habitat in the Charleston area. Seventeen adult bonnethead sharks were held in captivity and successfully returned to the wild. Upon release, researchers verified tag numbers, measured each shark, and briefly examined the health of each individual. Several attempts will be made next year to recapture tagged sharks from the study. Once a shark is recaptured the OTC mark will allow researchers to estimate growth rate and verify annular ring formation.



Roman Crumpton holds a bonnethead shark. FWS Photo.

Submitted by Roman Crumpton, Bears Bluff National Fish Hatchery, Wadmalaw Island, South Carolina



Congressman Jeff Miller views Okaloosa darters (L) with General Select Arnold Bunch, and JD Fulford, president of the Three Rivers RC&D Council. Photo by Christopher Metcalf.

Florida congressman visits stream restoration project

Fore! As golfers played on the Falcon Golf Course of Eglin Air Force Base, biologists from the Panama City Fisheries Resources Office pointed out restored habitat on Mill Creek for the endangered Okaloosa darter. Participating in the May field tour were Rep. Jeff Miller (Florida District 1) and General Select Arnold Bunch, deputy base commander. The tour was an opportunity to show the Service's partnerships with the Three Rivers Resource Conservation and Development Council, the Florida Fish and Wildlife Conservation Commission, the Air Force, and our Fish Passage and Partners for Fish and Wildlife programs. More than 3,000 feet of stream was restored with a unique, skylighted, bottomless culvert.



FWS' Christopher Metcalf (R) tells JD Fulford, president of the Three Rivers RC&D Council, Congressman Jeff Miller, and General Select Arnold Bunch about the stream restoration project. Photo by John Harper.

Submitted by Christopher Metcalf, Partners for Fish and Wildlife Program, Panama City, Florida

The boy and the bass

I have to confess that when Darien López, the manager of the Luchetti fishing access facilities in Puerto Rico, invited me to observe a fishing tournament on Sunday August 10, 2008, I was not very excited. The Luchetti Fishing access facilities are managed using Sport Fish Restoration Funds, and the reason for my trip was to monitor progress of the Federal Assistance projects. However, the tournament visit required waking up at 3 a.m. and driving for almost three hours to reach the lake. Furthermore, I was looking forward for a day of rest after a long week of meetings and workshops. Then again, I needed to walk the talk.



Darien López, Manager of the Luchetti Fishing access facilities receiving a fish from an angler. Photo by Fernando Núñez-García.

I arrived 15 minutes late, and Darien was already waiting for me in the boat. We cruised slowly near the middle of the lake using a whistle to alert the anglers who raised their hands signaling a catch. We approached the anglers, and Darien took the fishes to be weighed, measured, and released. My job was to take notes and give a receipt to each angler showing the weight and size of their catches.

As we approached one of the boats, Darien exclaimed "that is Dylan!" As we approached the boat, I saw a five-year-old boy, in his Scooby Doo floating gear, casting like a pro and visibly upset. Despite his extraordinary casting skills, Dylan had nothing in his bag that Sunday morning. We weighed and measured the fishes his father, Roberto Santiago, caught, while Dylan told stories about the big fish he lost and complained because his favorite fishing spot, the one where he caught three fishes the day before, was taken by another boat. The extroverted, young angler wasn't happy!

By the end of the tournament, an excited Dylan showed us the fish he caught. His father clarified that he brought the fish close, and



I caught it! Young happy angler and his largemouth bass. Photo by Fernando Núñez-García.

Dylan used the net to pull it in the boat. Anyway, his excitement was contagious as he posed for the photo showing his catch. Although I departed before the prizes were distributed, I learned that Dylan won two trophies, one for being the youngest angler, and another for the best father and son team.

As I drove back to the hotel, I thought about the last fish Dylan pulled in the boat using a net and how his happy face and enthusiasm made my reluctant trip an extraordinary experience. I concluded that, together with a few hearts, Dylan definitely caught that last fish.

Submitted by Fernando Núñez-García, Division of Federal Assistance, Atlanta, Georgia

Panama City Field Office participates in Endangered Species Day

In May, The Panama City, Florida Ecological Services Field Office organized an educational event to celebrate Endangered Species Day. Four fifth-grade students selected an endangered or threatened species to learn about and then prepare a presentation to their peers. For three days, the children went to three schools and presented information about their species to the fifth-grade class. The four kids taught their fellow fifth-graders about the red-cockaded woodpecker, the white birds-in-a-nest (endangered plant), the gulf sturgeon and the loggerhead sea turtle. A poster contest was conducted, and five winners were chosen. The winning posters were exhibited at the Panama City Junior Museum for the month.



Student gives her presentation about white birds-in-a-nest. FWS Photo.

Submitted by Laura Jenkins, Panama City, Florida, Ecological Services Field Office



An "Eco-kid" views nesting least terns, snowy plovers and their chicks at Camp Helen State Park, Bay County, Florida. Photo by Summer Zepher, Bay District Schools.

Southport Elementary "Eco-kids" outdoor connections

During the week of July 7, 2008, fifth-graders from Southport Elementary School, Florida, participated in a four-day, summer program aimed at getting them outside and aware of the fish and wildlife habitat surrounding their school. They learned about threatened and endangered species in Florida and the different habitat types for those animals. Each day, the kids explored the habitats in and around their campus which included a salt marsh wetland and tidal bayou. They decorated and painted rain barrels, and made bookmarks with pressed flowers. The event ended with a field trip to Camp Helen State Park which boasts six different habitat types and active nesting of the threatened snowy plover and least tern. Each child wrote a story about a threatened or endangered species in Florida and shared it with the class. The program was sponsored by Bay District School's Learn and Serve program.

Submitted by Laura Jenkins, Panama City, Florida, Ecological Services Field Office



Suzie Hopkins, daughter of Todd Hopkins, supervisory fish and wildlife biologist, sits near refuge and holds an American flag found while cleaning up. Photo by Todd Hopkins.

Treasure Coast Waterway Cleanup a success

Members of the South Florida Ecological Services Office's Everglades Restoration Program South Team and their families volunteered for the first annual Treasure Coast Waterway Cleanup July 19, 2008. The 13 volunteers worked off of four boats and removed 1,700 pounds (over three-quarters of a ton) of trash and debris from islands and shorelines of Indian River County from Vero Beach to Sebastian. Notable items included five BBQ grills, a smoker, a mattress, many large styrofoam blocks, a 50-gallon fiberglass tank, numerous recyclable bottles and cans, clothing, shoes, and an American flag. The flag was given to local scouts who will dispose of it properly.

Submitted by Ken Warren, South Florida Ecological Services Office, Vero Beach, Florida



Steve Trauder, a fish and wildlife biologist and Jonathan Gorham, the coastal resource manager for Indian River County, after collecting several bags of trash during the clean up. Photo by Debbie Spinner.

Friends Group --

Kentucky High school student receives scholarship

The Friends of Wolf Creek National Fish Hatchery, Inc.(FOWC) recently awarded a \$1,000 scholarship to Tyler Flatt. Tyler is a 2008 graduate of Russell County High School in Kentucky and will be attending Lindsey Wilson College in Columbia, Kentucky, this fall. He plans to major in Biology. Tyler is the son of James O. and Lisa Flatt of Russell Springs, Kentucky. The FOWC plans to make this an annual scholarship to a Russell County student majoring in a natural resource field.

Submitted by James Gray, Wolf Creek National Fish Hatchery, Jamestown, Kentucky



Jerry Coleman, President, Friends of Wolf Creek NFH, Inc., Lisa Flatt, mother, Elisabeth Flatt, sister, Tyler Flatt, the man with the money, and James Gray, Project Leader, Wolf Creek NFH. Photo by Amanda Patrick.

Hats Off -



Ken Clough receives Realty award

Ken Clough of the Division of Realty in Jackson, Mississippi, received the Rudolph Dieffenbach Award on August 25, in Atlanta, Georgia. He received the award for his leadership and efforts on behalf of the Service's carbon sequestration program. The award is presented to a Division of Realty employee for significant contributions to the Service's Land Acquisition Systems, operation, or mission of the Division of Realty.

L-R: John Beasley, R-4 Chief of Realty; A. Eric Alvarez, Chief of Realty, WO; Ken Clough, Realty Specialist stationed in Jackson Field Office; and Jon Andrew, R-4 Refuge Chief. Photo by Tom MacKenzie.

Submitted by John Beasley, Division of Realty, Atlanta, Georgia

Photo Album --

Wolf Creek National Fish Hatchery hosts Critters in the Creek station at Talking Trees Children's Trout Derby -- more photos



Amanda Patrick talks with a trout derby participant about how to identify what she has found on her rock. Photo by Lindsey Kirk.



Sheila Kirk works with a young biologist in training to observe any possible aquatic macro invertebrates. Photo by Amanda Patrick.

Biologists in action at A.R.M. Loxahatchee National Wildlife Refuge-- more photos



Jean Ryan. Photo by Chuck Ryan.



Rebekah Gibble and Tiffany Trent.
Photo by Chuck Ryan.

Campers enjoy exploring outdoors at Black Bayou Lake National Wildlife Refuge -- more photos



Campers present a wildlife puppet show. Photo by Allen Holliday.



Campers feed aquarium animals.
Photo by Allen Holliday.



Campers explore nature trail. Photo by Allen Holliday.

Beach project brings back birds, attracts turtles -- more photos



Stakes and flagging mark the spot where a sea turtle laid a nest on a newly restored beach near Pass Christian, Mississippi. Photo by Linda Brown.



A sea turtle nest can be seen at the base of the dune. Photo by Diane Bateman.

Sewee Visitor Center wheelin' and reelin' in summer -- more photos



Nathan Slesinski proudly displays his catch. Photo by Pat McCormack.



Zharbray Livingston with grand prize. Photo by Jameala Simmons.



Waiting on a bite. Photo by Katelyn Tarezas.

Visitor Services --

Youth Can Continue the conservation mission!



YCC group helps reforestation efforts at two refuges. FWS photo.

Ten teen-agers, aged 13 to 17, traded their usual summer fun activities for eight weeks of hard and intensive work at the Cabo Rojo and Laguna Cartagena National Wildlife Refuges in the Caribbean Islands. Most of these kids from the nearby communities had no prior work experience and had never been exposed to the conservation and protection of wildlife or natural resources. They joined the 2008 Youth Conservation Corps or YCC.

Led under the guidance of the refuge maintenance, fire and volunteer staff, this YCC group planted trees at both refuges. The group spent about 14 days between the two refuges and planted more than 2,000 native and endangered trees of more than 12 different species. Some of the tree species included Ceiba pentandra, Bucida buceras, Guaiacum officinale, Bursera simaruba, Stahlia monosperma, Eugenia woodburyana, Goetzea elegans, and Polygala cowellii.

In the following weeks, the group nurtured these plots by watering, mulching and keeping their surroundings free of unwanted vegetation.

“This is the first time we were able to plant so many trees in such a short period of time,” said David Bocanegra, visitor service specialist, Caribbean National Wildlife Refuge Complex. “This is another successful chapter in the refuges’ efforts to return these lands to their original mature subtropical dry forest. That’s why we can say Youth Can Continue the conservation mission!”

Both of these refuges are part of the Caribbean Islands NWR Complex composed of nine refuges in Puerto Rico and the U.S. Virgin Islands. The Cabo Rojo NWR, once the home of Foreign Broadcast Information Service, was established in 1974 and also serves as the complex headquarters. In 1999 an additional 1,249 acres known as the Cabo Rojo Salt Flats were added to the refuge. These lands are considered the most important stopover for migratory shorebirds in the eastern Caribbean.



YCC group plants trees. FWS photo.

Laguna Cartagena NWR was once one of the most important freshwater habitats for migrating and resident aquatic birds in Puerto Rico. It became a refuge in 1989, and the Service is working towards restoring this important wetland ecosystem for the benefit of endangered species and migratory birds. In 1996, a parcel of 263 acres was added in the adjacent Sierra Bermeja. These hills, geologically some of the oldest in the Caribbean, protect a native forest with numerous endangered and native plant species.

Submitted by David Bocanegra, Caribbean National Wildlife Refuge Complex, Boqueron, Puerto Rico

Wage Grade Profile --

Chad Shirey: Warm Springs National Fish Hatchery



Chad Shirey. Photo by Rosla Plant.

Chad Shirey, electrician, is one of Warm Springs National Fish Hatchery's greatest assets! Chad joined the hatchery staff three years ago by way of the (VRA) veteran's reappointment authority, stepping in to fill a huge void caused by a staff shortage. Chad's willingness to learn, coupled with his vast areas of expertise, is remarkable. His skills in carpentry are evident in the observation deck he built for carnivorous plant display. His welding and mechanical skills are demonstrated in the self-designed, articulated boom aluminum fish bucket he built to improve fish harvest methods.

Chad's other areas of expertise include heavy-equipment operations, facilities maintenance, fish culture operations, public outreach, as well as a host of "other duties as assigned!" Chad also is a member of the Southeast Region Wage Grade Committee, and he has become a designated heavy-equipment instructor for the Region.

Chad's cheerful outlook and disposition makes him one of the people everyone loves to work with on a daily basis. His can-do attitude is often tested by the variety of work he accomplishes. One may see him on the backhoe in the morning, counting and feeding lake sturgeon during mid-day, or taking care of an emergency mechanical problem late in the afternoon!

If you ever want to catch Chad while at work, look for the dust ball - he's probably in front of it!

Chad and his wife Amy have three children, Alexis, aged 9; Hunter, aged 5; and Olivia, aged 2. He is active in church activities and loves to hunt and fish.



Chad works on the observation deck for carnivorous plants. Photo by Rosla Plant.

Submitted by Rosla Plant, Warm Springs National Fish Hatchery, Georgia

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