U.S. Fish & Wildlife Service July 2013

# Field Notes

*Panama City Ecological Services/Fish and Wildlife Conservation Office*

## Biologist Track How Hurricanes Affect Beach Mouse Habitat

The sugar-white sand dunes of the Florida panhandle create picture-perfect scenery along the beaches of the Gulf Coast. But within the burrows lives a little white mouse that depends on those dunes to thrive.

The Perdido Key beach mouse (PKBM) has a small body, haired tail, relatively large ears, and protuberant eyes. Its head and body length is 2.7 to 3.3 inches; the tail length is 1.7 to 2.5 inches. This species is a nocturnal herbivore. Beach mice feed primarily on the seeds of sea oats and beach grass. The PKBM was listed as endangered in 1985, and its biggest threat is the modification and destruction of its home....the sand dunes we have come to love on the Gulf Coast.

As we are in the midst of hurricane season, the Panama City Field Office is reminded of just how fragile this habitat can be. Now, biologists want to see how hurricanes affect this habitat over long periods of time. That's why beach mouse biologist Kristi Yanchis is setting up a dune-monitoring project in an effort to track the changing habitat. "Specifically, we want to be able to identify areas pre and post hurricane to assess the damage, and monitor the habitat for damage and possible restoration," explains Yanchis.

Yanchis and Biological Technician Caroline George have selected various points within the range of each subspecies of beach mouse. Each point is captured using GPS coordinates and four directional photos. The plan is to include habitat along the front dune and back dune in this effort. "After this year, the entire Florida panhandle and coastal Alabama beach mouse habitat (4 endangered subspecies ranges) will be monitored twice a year for years to come," says Yanchis.

Beach mice aren't the only ones that will benefit from this project. Sand dunes also benefits people as well. Sand dunes

*photo: Denise Rowell*

*Stable sand dunes provide habitat for mice and protection for people.*

create a natural line of defense against storms and help protect property. "We are all in this together," reminds Yanchis. "When we help out our furry friends, there is something in it for us as well."

## Making Progress Toward Recovery: The story of telephus spurge

A threatened Florida plant has taken a nice step toward recovery after a new population was discovered last summer. Biologists with Flatwoods Consulting Group discovered *Euphorbia telephioides* (telephus spurge) during a survey for threatened and endangered species near the Carrabelle-Eastpoint Transmission Line Corridor. "Telephus surge is a species restricted to the Florida panhandle. The species is a small, perennial herbaceous plant with succulent leaves and a long tuberous root which might help survive disturbances such as fire or mowing," explains botanist Dr.Vivian Negrón-Ortiz.

The plant is known to thrive in pine flatwoods and scrubby pinelands dominated by wiregrass, longleaf pine or slash pine. They are also locally abundant along disturbed sandy, sunny roads and sites with bedding. However, habitat destruction and modification have put the plant at risk for extinction. That's why telephus surge was listed under the Endangered Species Act as threatened in 1992.

Biologists penned a recovery plan for telephus surge in 1994, which set a goal of fifteen populations to be distributed throughout the species' historical range. This discovery brings the U.S. Fish and Wildlife Service one step closer to recovery. "This newly-discovered population is the second largest known current population," says Lee Walton, Senior Ecologist with Flatwoods Consulting Group. "It is a four-mile range extension for the species."

"Currently, nine populations of this species have been secured. This latest discovery is very promising for the future of telephus surge," says Negrón-Ortiz.

Biologists with Flatwoods Consulting Group continue to work with the Panama City Field Office in an effort to conserve this species.

*photo: Flatwoods Consulting Group*

*Biologists Wayne Richardson and Lee Walton with Flatwoods Consulting Group continue to help USFWS protect this plant.*

# Wetlands Pop in the Florida Panhandle

*By: Melody Ray-Culp.*

Wet seepage slope communities are once again popping with color and vibrancy and resilience, thanks to a Coastal Program partnership with Florida State Parks to let the sun shine in at three coastal parks in the Florida Panhandle.

Forests of titi have out-shaded full-sun-worshipping carnivorous bog plants for many years, but the pitcher plants and sundews are on their way to a comeback after just two years of restoration attention! Although titi is a native plant, it's also very invasive and opportunistic, and things have gotten out of balance. Normally shrub-height, titi can grow quickly to a formidable fortress at tree height when fire is suppressed. It also transpires huge volumes of water that should naturally be seeping its way through the watershed, past the critically-imperiled coastal dune lakes, and into the Gulf of Mexico.

*photo: Melody Ray-Culp*

*An up-and-coming botanist (her Mom's the VP for Science and Conservation at the Atlanta Botanical Garden) documents restoration in progress.*

The restoration team is deliberate and efficient in their methods – while it's natural to want to start from one end of each park to the other, denuding titi completely, that would take a lot more time and money than we have right now. Instead, we are using a scalpel approach, targeting key polygons of wall-to-wall titi for mechanical removal, inflicting fire on them, and then allowing nature to accelerate recovery. To its credit, the team's management menu is herbicide-free.

The restoration process is complex, with lots of variables, and returning fire isn't a magic wand that immediately fixes everything. Bog plants require low-nutrient soils (that's why they catch bugs), and fire adds nutrients. The fire duff slowly oxides, so fire is only a first step towards recovery, albeit an important one.

And, in case the root stock and seed bank have so declined from 50-70-years of fire suppression, to the extent that they can't of themselves make the wetlands pop with pitcher plant prairie productivity, the Atlanta Botanical Garden, another partner, is collecting local seeds and germinating them in the safety of their conservation lab for future relocation.

This restoration shows show-case potential, one for the textbooks as the team pretty much writes the book for seepage slope restoration!

# Dim the Lights for Sea Turtles

*photo: Denise Rowell*

*USFWS biologists release a rescued Kemp's Ridley sea turtle.*

The sunshine state is home to many unique fish and wildlife, but one of the most beloved species is the sea turtle. Five species of sea turtles nest along the Florida Gulf Coast: Hawksbill, Kemp's ridley, Green, Leatherback, and Loggerhead. All of them are protected by the Endangered Species Act. Now that sea turtle nesting season is in full swing, the Panama City Field Office would like to remind everyone to keep the lights dim on the beach.

Why does lighting make a difference? When females make their way out of the water to nest along the beach, they depend on the light of the moon to guide them back into the Gulf. But bright lights from condos or street signs often confuse the turtles. Sometimes, they get lost and end up stranded. That's why biologists are urging folks to dim their lights, and remove all beach furniture and appliances at night. That way we can still enjoy the beach, and learn to co-exist with this special species.

# In the Field: A Biologist's Blog

Have you ever had one of those days when your mind wandered into the scientific realm of wondering why is something the way it is? Well, I had one of those experiences while walking on the beach near Sebastian Inlet on Florida's east coast. There were Black skimmers (*Rynchops niger*) congregated alongside Royal and Sandwich Terns (*Sterna Maxima* and *Sterna sandvicensis*, respectively). The stark black and white color delineation on the skimmers was strikingly apparent. OK, that is when my mind went into Isaac Newton's world of scientific inquiry; "Why are they black on top and white on the bottom?" "Why does their black coloration stop just below their eyes instead of above their eyes?" "Why is the tip of the skimmers beak black while the base of their beak, legs, and webbed feet are reddish-orange?" "Why is the adult nonbreeding plumage around the back of their neck white instead of the black breeding plumage?" "Why do they have black eyes with vertically slit pupils?" And most notable, "How did their knife like lower mandible (beak) evolve to be longer than their upper?" Before we go any further, I better tell you, I don't know!

What I do know is: Black Skimmers are primarily a coastal species, they are approximately 15 to 20 inches long (males are slightly larger than females), wingspan of about 45 inches, and they weight in the neighborhood of 8 to 16 ounces.

When I walk past them on the beach, they seem to be more sensitive to my presence than the neighboring terns. However, I have found that if you respect their comfort zone, and patiently observe them from a distance, they will become so relaxed that they lie down flat on the beach (like an old wet mop) with their beak resting on the sand and go to sleep. When I observe that degree of harmony in nature, it also rejuvenates my soul.

Although not federally listed under the Endangered Species Act, the Florida Fish and Wildlife Conservation Commission's *Biological Status Review for the Black Skimmer, March 31, 2011* indicates that Black Skimmers have met their criteria for listing as a State threatened species. However, Black Skimmers are currently only listed


*photo: Ted Martin*

*Ted Martin spots a breath-taking flock of black skimmers in the panhandle.*

as a Species of Special Concern by the State of Florida. Because of their sensitive nature and specific habitat requirements skimmers face many stressful situations that jeopardize their existence: habitat degradation, human disturbance, predation, pollution, invasive species, and now global warming. There appears to be a Florida state-wide trend of reduced populations and breeding colonies size. Due to the loss of appropriate nesting sites, many of this species must resort to brooding their families on rooftops, with resulting poor survival rates.

I have always wanted to take one of those moon-lit photographs with a black skimmer flying majestically just above the water's mirror like surface with a serpentine trail shimmering in the background. But that was not my photographic experience while composing this article; those little buggers fly too darn fast! It was like trying to photograph a NASCAR driver's face as he went by at 200 mph. Next time, I am going to reposition myself on that avian race track. Well, now that I've made excuses for my next two photographs, I must add that the skimmers were also having a bad day. Instead of delicately plucking his/her meals from the water's surface, they were crashing into schools of fish like they were in a demolition derby. If you look closely at my photographs, you will see that one skimmer even experienced some feather loss on the leading edge of its left wing after crashing into that school of fish.

In response to my original scientific questions; I would venture a guess that all of the Black Skimmer's evolutionary color (melanin) patterns within their skin and feathers are related to their breeding, survival, and/or the function of their unique feeding style. Who knows, it might just be because melanin makes their feathers stronger. The skimmers that I photographed, while feeding, certainly needed all the wear resistant qualities they could muster.

# IT Makes It Happen: Connie Bowman is our Go-To Gal for Information Technology

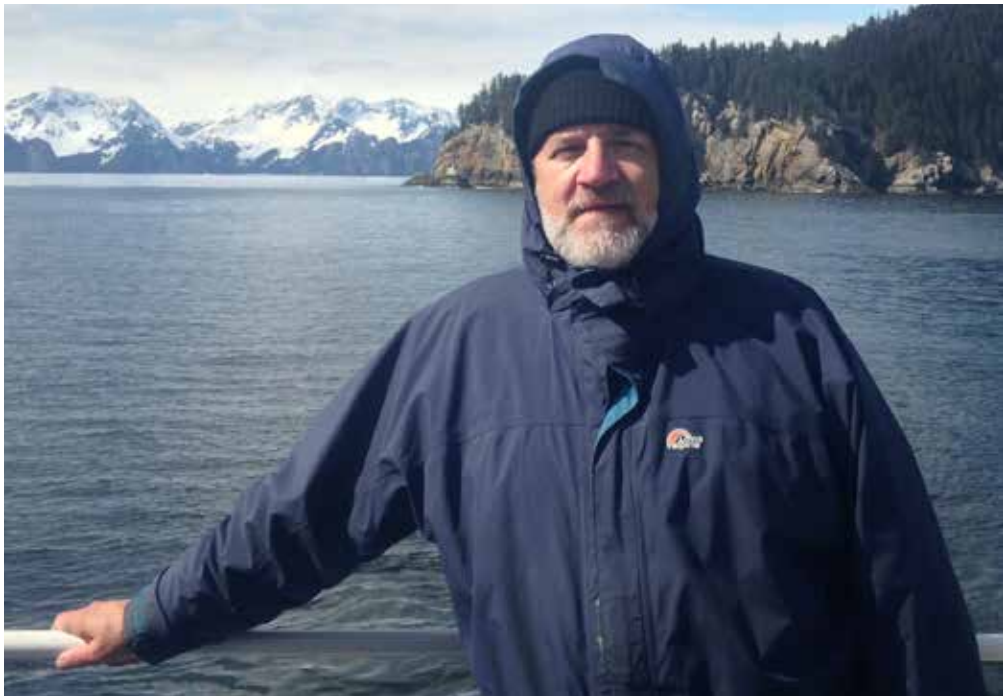
I came to the Service in February of 2001 as a contractor from the Naval Surface Warfare Center, Panama City Division. There as the sole hardware technician for 2500 computers, I worked my way to a network technician position.

As an IT Specialist, it is my job to scrutinize, identify and implement hardware and software technologies and streamline server and network administration. I install, troubleshoot and maintain computers, routers, switches, a telecommunication system and mobile devices. Security is vital. It is my responsibility to insure that regulations and policies are followed, improving the effectiveness and efficiency of our equipment and data. I also developed and maintain the PCFO website.

We use computers, laptops and mobile devices to perform many daily duties and activities. My role as an IT Specialist is important because I anticipate equipment malfunctions and make every effort to minimize down time and the stress this causes my co-workers. Our office is subject to inclement weather for several months a year therefore, I have worked to make ours a mobile workforce with 99 percent of staff using laptops. I installed the 'hurricane box', a secure network storage device containing backups of all the office data. I maintain a 14 unit computer lab used by staff and our partners.

*Connie Bowman brings her technological expertise to the Panama City Field Office.*

# Project Leader Dr. Donald Imm Graduates from Esteemed Leadership Program



*Dr. Imm completed a sixty-day detail in Alaska under the ALDP program.*

Panama City Field Office Project Leader Dr. Don Imm recently graduated from the U.S. Fish and Wildlife Service's Advanced Leadership Development Program (ALDP).

The program offers participants an opportunity to explore leadership in the USFWS and includes three phases: focusing on self, group, and the organization. A major component of ALDP is participation in out-of-town detail assignments, including a 30-day job swap and a 60-day developmental detail. Building relationships and developing personal and professional leaderships are just a few of the program's objectives. During the course, Dr. Imm spent a good part of his time at the Alaska Regional Office in Anchorage. We are proud of Dr. Imm for graduating from this challenging, yet rewarding program.

# A SMART Collaboration for Clean Water

## *The Panhandle Gets WaterSMART*

*By: Nathan A. Johnson*
*Mussel Ecologist - US Geological Survey*
*Southeast Ecological Science Center*

Biologists from the Panama City Field Office teamed up with the United States Geological Survey in a program aimed to protect our water resources. The program is called WaterSMART. WaterSMART (Sustain and Manage America's Resources for Tomorrow) is a program of the Department of the Interior that focuses on improving water conservation and helping water-resource managers make sound decisions about water use. The overarching purpose of WaterSMART is to develop data and tools needed by water resource managers to meet challenges imposed by aging infrastructure, population growth, groundwater depletion, impaired water quality, water needs for human and environmental uses, and climate variability and change.

*photos: USGS*

*Members of Team WaterSMART quantitative sampling freshwater mussels by excavating substrate within quadrats and sorting sediments using sieves.*

*Caroline George is a biological technician with the Panama City Field Office.*

The USGS Southeast Ecological Science Center (SESC) team is working collaboratively to associate ecological transitional stages (recruitment, colonization, extirpation), based on spatially replicated occupancy models, with hydrologic flows under different conditions and in different physiographic regions or across a geographical gradient. Focus is on headwater tributaries extending upstream (Chattahoochee River and Chestatee River) to downstream (Chipola River and Spring Creek), that are areas susceptible to dewatering from withdrawals, consumptive use, and drought. Concurrent with the ecological study, USGS hydrologists are develping surface-water and ground-water models to assess flows throughout the basin. These hydrologic models will interface with the ecological models to explicitly examine hydrologic-environmental flows relationships.

# South Atlantic Landscape Conservation Cooperatives and the "S" Word

*By: Dr. Catherine Phillips, Deputy Project Leader, Fish and Wildlife Conservation Office*

So a few months have passed and things may have appeared to have quieted down since the surrogate species rollout of last fall. However, things are rolling along in the landscape-level, biological planning realm at a quick pace. As one of the regional trainers, I still get so many questions about surrogate species - what they really are, and especially what is currently being done with them throughout the southeast? Although I have described surrogate species using the Caro (2010) definition "species that are used to represent other species or aspects of the environment," I often find it easier to think of them as a landscape-scale metric that provides information in regards to change in a given environment. Right now the Landscape Conservation Cooperatives (LCCs) are moving along, each at a slightly different pace, in the development of a process to determine and then test these landscape scale metrics. The South Atlantic LCC is the furthest along in the Southeast, and has already chosen "natural resource indicators" that represent 11 designated habitat types within the geography. Ecological criteria, practical criteria (i.e. ease of monitoring), and social criteria (ability to resonate with the public) were all considered as part of the selection process. The first round of natural resource indicators, approved by the steering committee in March, includes species, collections of species (guild) and some other habitat metrics (abiotic or biotic). Additionally, no more than three indicators were selected per habitat. Some examples of indicators now undergoing testing of assumptions include: an index of biotic integrity and the percent of riparian cover for freshwater aquatic habitat, or miles of altered beach and an index of shore birds for beaches and dune habitat. Currently, the SALCC is entering the testing phase, determining whether or not the chosen indicators really represent what they are intended to represent. Short term testing is expected to take one year, and then long term testing will continue for 2-5 years. For more information about the SALCC and its natural resource indicators please feel free to visit the web site http://www.southatlanticlcc.org/page/indicators or give me a call to discuss specifics.

photo: USFWS

*In order to conduct field work, many biologists complete an ATV safety course.*

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*These two Perdido Key beach mice are the newest residents of the Panama City Field Office. They come from a captive breeding program, and are now used for outreach and education.*