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# News from the Coastal North Carolina National Wildlife Refuges Complex

Alligator River, Pea Island, Pocosin Lakes,  
Roanoke River, Mackay Island, Currituck,  
Mattamuskeet, Swanquarter and Cedar Island

## Saying Goodbye to Miss Cindy

*At her retirement party in August 2019, friends and co-workers of Visitor Services Specialist Cindy Heffley, celebrated her 20 years of service with the U.S. Fish and Wildlife Service, 11 of those years on the refuges in North Carolina.*



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Cindy arrived at a momentous time in the evolution of the refuges. She was instrumental in re-establishing wildlife education in the local classrooms and developing good relationships with the teachers in the Dare County school system. She also developed programs for Alligator River National Wildlife Refuge that served to draw more visitors to the refuge.

The refuge bought a tram during Cindy's tenure. She developed a tram tour for Alligator River that has been offered weekly during the summer and monthly during the rest of the year. The refuge also built the Gateway Visitor Center and Cindy developed a preschool program that she conducted every Friday and other programs for visiting children. Both the tram tour and visitor center programs not only educated, but attracted new audiences to the refuges.

Cindy was an excellent trainer, mentor, and supervisor to the interns that work on the refuge every summer. She organized the tours and programs that they led and monitored their progress as they became proficient.

She's always been willing to assist all of the refuges in the area as they developed their own programs. Her dedication and enthusiasm towards her work has inspired everyone with whom she worked.

*In retirement, Cindy will spend more time with her family and continue to work in wildlife education and interpretation.*



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## **Pea Island Refuge Biology Notes – Looking Back at 2019**

To protect sea turtle nests, refuge staff, interns, and volunteers participate in daily monitoring of nesting activities on Pea Island daily beginning in late May. Hatchlings begin to emerge from nests early to mid-July, when volunteers monitor active nests nightly through the Turtle Watch program. If there is no activity observed at nests they are excavated approximately 80 days after they are discovered. In North Carolina, the refuge participates in the state network of turtle monitoring organizations coordinated by the North Carolina Wildlife Resources Commission (NCWRC). We compile and report data through [seaturtle.org](http://seaturtle.org).

### ***It was a busy turtle season everywhere!***

Nesting activities began early with Refuge staff observing the first nest on May 20. In total, we observed 75 nesting sea turtle activities including 40 nests (three greens, 37 loggerheads) and 35 false crawls (seven greens, 28 loggerheads). We were just one nest short of tying our all-time record of nests observed on the Refuge (41 in 2016)!



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In 2019 we deployed data loggers in the nests to track nest temperatures during incubation. Partners at NCWRC and Network for Endangered Sea Turtles (NEST) provided field and configuration protocols and assisted with data management and analysis. NCWRC developed two different prediction models which use the day of first observed activity to predict the nest emergence day. Both models performed well, predicting nest emergence events within an average of one to three days of observed emergences using temperature readings. Overall, these data significantly helped with nest emergence prediction

and coordination of volunteer efforts of the Turtle Watch program. Historically, volunteers began monitoring nests on Day 50 until nest emerged (typically between Days 55-65). Using these models, we limited the nest watching window to approximately three days for each nest. Data loggers can be reconfigured and deployed repeatedly so we will be continuing to use the equipment in future seasons. Special thanks to John Cece and Margaret Janes with NEST and Karen Clark at NCWRC for all their assistance!

Turtle Watch efforts began July 15 and ended October 9. Beginning in the end of August, beaches were impacted by nearly back-to-back storms including several nor'easters and Hurricane Dorian. Many turtle nests experienced overwash and inundation due to storm surge/tides/wind events. We lost four nests and were unable to inventory eggs. Of the nests inventoried, we estimated 3979 eggs hatched. We observed an average clutch size of ~110 eggs (range 81-157). Observed mean incubation duration of nests was ~56 days (range 46-71). Total observed mean egg hatching success was approximately 82% and mean emergence success was approximately 76%.

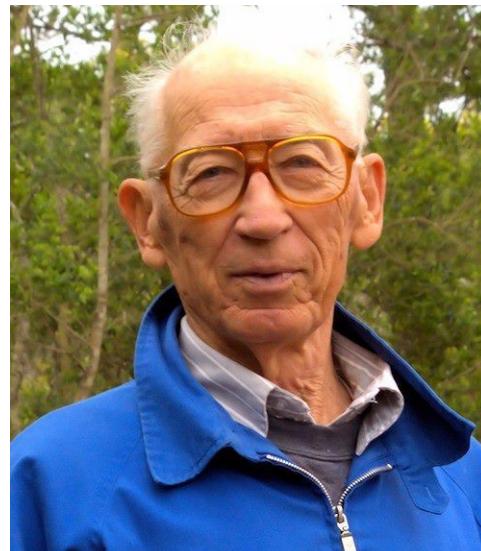
***Special thanks to all our  
Turtle Patrol and Turtle  
Watch volunteers —  
thank you for a great and  
busy 2019 season!***



USFWS / Harrison

### **Thank you Elizabeth!**

Elizabeth Piña joined our Biology team for the second summer in a row. It was so great that she was able to be a Bio intern again. Elizabeth returned on very short notice after we became unexpectedly short-staffed in the middle of the field season. Elizabeth was such an asset to our team, helping with everything from Turtle Patrol coordination, Turtle Watch, shorebird banding and monitoring, trail maintenance, to assisting with Wings Over Water. We are grateful for all her efforts and eagerly await to learn about her next adventure.



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### **In Memoriam**

The refuge community lost a valued volunteer in March when Neal Moore passed away. Neal and his wife Pat led bird walks and worked in the Pea Island National Wildlife Refuge Visitor Center for over 15 years. Neal contributed more than 5,000 hours of service to the refuge. Neal was a very user-friendly birder who made visitors feel at ease and was very patient as they tried to identify birds.

## Two Education/Red Wolf Caretaker Interns

### Lillian Turner

I graduated from Salisbury University in May of 2019. I've been trying to explore different entry level fields of environmental jobs to see what type of research and topic I'm passionate about. This job is exciting for me because I've been visiting the area since I was little, but never got the chance to deeply understand the environment here. Long-term, my goals include graduate school and joining the Peace Corps. For now, I'm incredibly happy to be working so closely with the red wolves and promoting environmental education.



Lillian Turner / L. Turner

### Morgan Paige Lewis

I have always known that my life and career would revolve around the outdoors. When I graduated Rutgers, The State University of New Jersey with a B.S. in Environmental Policy and Institutions I had goals, but they weren't fully developed. I knew I wanted to contribute to something meaningful, motivating, and challenging, but I wasn't sure how. In my uncertainty, I went out on a whim, took an interning position banding birds in the heart of Alaska, and found myself bewitched by the wildlife field.



Morgan Paige Lewis / Raptor Trust

Since then I've travelled around the country to work with birds, assisted with bobcat research in my own back yard, and have now come to the wetlands of North Carolina to help contribute to the management of Alligator River and Pea Island National Wildlife Refuges and the conservation of a species I am very passionate about—red wolves.

I consider myself very lucky, not only because I've found a field of work I love but also because I know that my efforts can make a positive and lasting impact for our planet and the wildlife that inhabits it. While working outdoors, I've found that my passions lie heavily in the study of anthropogenic (human-made) factors, such as climate change or habitat degradation, and the impacts they may have on a species population dynamics. I am looking to pursue these interests with research in related fields and completing a master's program in wildlife biology and conservation management.

At Alligator River and Pea Island National Wildlife Refuges, I look forward to bringing engaging wildlife programs to the youth, maintaining the refuge so that people such as myself can enjoy it, assisting Service biologists with the management of red wolves, and building connections with the community surrounding the refuge.

## A BIG Thank You to Refuge Supporters!

We greatly appreciate donations in honor or in memory of those who loved wildlife and wild places.

In 2019 the following people were remembered by a variety of caring folks including friends, colleagues and family, all supporting Alligator River and Pea Island National Wildlife Refuges.

**Alan M. Klude, VMD**

**Earl Moore**

**Neal Moore**

**Larry Muzik**

**Robert R. Rose**

**Barry Trusel**

**C.E. Woodruff**

We thank the dozens of people who contributed.

Sometimes, donations are the only way to get national wildlife refuges projects completed. Giving in honor and memory of loved ones is a special way to give your support.

Donate to Northeast North Carolina National Wildlife Refuges in honor, in memory, or as a supporter by going online and clicking DONATE button to see your payment options.

<https://www.coastalwildliferefuge.com/>

## Wings

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North Carolina

## Partners Assist Pea Island National Wildlife Refuge on Habitat Restoration for Migratory Birds Near Oregon Inlet Terminal Groin

*Habitat restoration activities began the week of January 27, on Pea Island National Wildlife Refuge.*

Partners at the North Carolina Department of Transportation (NCDOT) and contractors with Barnhill Construction will excavate sand behind the Oregon Inlet Terminal Groin in order to improve habitats for migratory birds. Sections within a three-acre area will be dug out to create open water intertidal pool areas for multiple shorebird species. Approximately 25,000 cubic yards of sand will be excavated and deposited on the upper beach adjacent to the work area. It is estimated the work will take one to three weeks to complete (weather permitting).

As part of the ongoing planning efforts with the NC 12 Transportation Management Plan, NCDOT requested a new permit from Pea Island National Wildlife Refuge to retain the Oregon Inlet Terminal Groin. When the



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USFWS/ Harrison

Terminal Groin permit was updated in 2012, it required several monitoring and management conditions, including moving sand to create suitable habitat conditions for migratory birds or other federal trust species within 0.5 miles of the terminal groin. It was anticipated that habitat management would be necessary for approximately two to five years, depending upon storm frequency and intensity, and habitat monitoring results.

Moving sand to create better habitat has occurred several times in the past 10 years, in the winters of 2008, 2011, and 2014. This work creates moist sand and inter-tidal pool habitats with non-vegetated shoreline. The coarse shell substrate improves habitat quality for nesting shorebirds and waterbirds.

These habitats are important areas for foraging, breeding, and nesting activities

of many different shorebirds - Piping Plovers, Black Skimmers, American Oystercatchers, and Least Terns. All activities will be completed by the end of February to minimize disturbance to early arriving migrant and breeding birds.

*Construction areas, especially those using heavy equipment, are inherently dangerous for people.*

Please avoid visiting this site during most of March until the work is complete. The area immediately adjacent to the terminal groin will remain accessible to the public.

### If you need additional information

Please contact  
Art Beyer  
Assistant Refuge Manager  
252/475 9517  
or  
Becky Harrison  
Refuge Biologist  
252/473 1132 x 231

## 2019 Wings Over Water Wildlife Festival

*The 2019 Wings Over Water Wildlife Festival (WOW) was a mixture of weather and wonder.*

There were great birding, paddling, photography, art and natural history trips and programs. And there were programs cancelled due to wind, rain or both. Wings Over Water leaders and attendees are an intrepid lot and understand the fickleness of Outer Banks weather. One day can be a wash and the next gorgeous. The next day! What are we saying? On the Outer Banks, weather can vary from hour to hour and even from one side of an island to the other. Keeping that in mind, Wings Over Water leaders and attendees bring a variety of outdoor gear and basically roll with whatever punch the weather throws.

A recent story in the *Ocracoke Observer* pointed out much more long-term weather-created issues. To the southern portion of Outer Banks, Hurricane Dorian sent seven feet of water across portions of Portsmouth and Ocracoke Islands, causing the loss of power, homes, vehicles, property, but fortunately no lives. WOW programs on those two islands were cancelled. Hatteras Island also had flooding and wind damage, but no Hatteras Island programs required cancellation.

Our 2019 WOW keynote speaker, Julie Zickefoose, is a speaker, author, artist and naturalist. She was enjoyed by those who were on trips she co-lead and by those who heard her keynote dinner presentation. Julie is a wonderful, caring, intelligent and energetic person. Her latest book, *Saving Jemima: The Story of a Hard Luck Jay*, is entertaining and educational; *Saving Jemima*, deals with the intricacies of rehabilitating a variety of wildlife and specifically the namesake of her book, Jemima the blue jay.

Mary Grindlay, refuges gift shop manager, organized a gorgeous Wildlife Art Expo reception, held on Friday in the auditorium of National Wildlife Refuges Visitor Center on Roanoke Island. Dozens of people took time to view the artwork by Robert Daniels, Cindy Harrison, Cecily Mitchell and Kathleen Redman. The artists' work varied in style and use of watercolor, oil and acrylic. One artist displayed small three-dimensional bird wall hangings. The show was hung through December. Sales of the artwork helped support Wings Over Water and the artists.

In December, WOW Encore, the annual three-day weekend for just birders and bird photographers, was close to being fully booked. Attendees saw a wide variety of birds and the trips were well received.



A. Karnes



J. Orsulak

## 2020 Wings Over Water Wildlife Festival

Dates for this year's festival are Tuesday, October 20 – Sunday, October 25 (Main Session) and Friday, December 4 – Sunday, December 6 (WOW Encore). On-line registration opens the first week of May.

For the 2020 Wings Over Water Wildlife Festival, Mary once again plans to host another Art Expo. The opening reception will be Friday, October 23, 6-8 pm. It's free and refreshments will be served. The Expo provides an opportunity to see local and regional artwork of talented artists. National Wildlife Refuges Visitor Center is located at 100 Conservation Way, Manteo. The Art Expo is open to everyone. Support regional refuges. Support wildlife artists.



Olfenbuttel

Colleen Olfenbuttel, is the 2020 WOW keynote speaker. She is the Black Bear and Furbearer Biologist for the NC Wildlife Resources Commission, the state agency responsible for conserving, restoring, and managing the state's wildlife resources and their habitats. She received her bachelor's degree in wildlife biology from Ohio University ('97) and her master's in wildlife management from Virginia Tech ('05). Colleen is a Certified Wildlife Biologist® and has over 20 years of experience in the wildlife profession. She was the lead author for the state's Black Bear Management Plan and the Coyote Management Plan. Currently, she has several on-going research projects concerning bears and furbearers, including a collaborative study with North Carolina State University on urban-suburban black bears in Asheville, NC.

## Swan Days Festival



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*Swan Days Festival  
December 7, 2019,  
celebrated the return  
of tundra swans from  
northern Alaska to  
Lake Mattamuskeet.*

The festival offered a variety of events spread out over the Mattamuskeet National Wildlife Refuge and the Mattamuskeet schools. A big attraction were the tram tours of the impoundments on the refuge, where the swans and other waterfowl rest and feed to prepare for



Chip Gentry / USFWS

their return to their breeding grounds. All of the tours were full and the waterfowl did not disappoint the refuge visitors.

*There was also an open air tram bird watching and photography tour and a wildlife photography workshop held around the refuge. Biologists from the North Carolina Wildlife Commission held a program on alligators and a demonstration of waterfowl decoy carving.*

At the schools, twenty vendors sold their wares including many with wildlife-themed photographs, paintings, drawings, wood carvings, wood burning, and jewelry. Five presenters shared their knowledge with the audience in the multi-purpose room. Chip Gentry attracted an enthusiastic group to his presentation on raptors – complete with live birds. Michael Flynn of the North Carolina Coastal Federation and Randall Ethridge of East Carolina University gave an informative program on the water quality in Lake Mattamuskeet and the restoration plan being implemented to improve the lake.