

# NEMOURS GAZETTE

A publication of the Nemours Wildlife Foundation

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FALL – WINTER 2017

## Putting South Carolina's Rice Fields on the Map

By Dr. Ernie Wiggers

The Nemours Wildlife Foundation has partnered with several organizations to develop the first ever complete map of the historic rice fields in South Carolina. The history of rice production has been written about extensively and some have speculated up to 170,000 acres of the state's coastal landscape were converted into rice fields, but a complete map of where these fields existed has never been developed. Because of their historic, cultural, and now wildlife conservation values, there is a need to document both the extent and location of these old, human altered, wetlands. Detecting all the old fields, especially the more inland fields which may have been abandoned decades ago and have been reclaimed by forest, has proven to be a challenge. Recently, with much help from the geospatial lab at Clemson University, investigators discovered a new tool that is helping pull back the layers of vegetation and reveal the old dikes and canals. This tool is called LIDAR.

LIDAR (*Light Detection and Ranging*) is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. These light pulses — combined with other data recorded by the airborne system — generate precise, three-dimensional information about the shape of the Earth and its surface characteristics. What makes LIDAR so important to our project is that it can detect and show very small (< 1 foot) differences in ground elevation making the remnant dikes and canals of the historic rice fields easy to detect and map.

The student working on this project will still need to go into the woods to verify a random sample of dikes detected from the LIDAR imagery to confirm that these truly are dikes so that we have a greater degree of confidence in our interpretation of these images. We call this ground-truthing.

We will continue to map the historic rice fields through the spring of 2018 and complete the ground-truthing segment in the summer of 2018.

We want to thank our many partners including: Folk Land Management, Green Pond, SC; The SC Department of Natural Resources; The U.S. Fish & Wildlife Service; Ducks Unlimited; The Audubon Society; Lowcountry Open Land Trust; Dr. Robert Baldwin, Department of Forestry and Natural Resources, Clemson University; and the Clemson University GIS Laboratory.

We especially want to acknowledge the tremendous work, passion, and leadership given to this project by Richard Coen, an undergraduate student at Clemson University. Seldom are undergraduate students asked to undertake projects with this complexity but Richard is doing an outstanding job.

*Please see Page 2 for an example of LIDAR images compared to traditional aerial photos.*

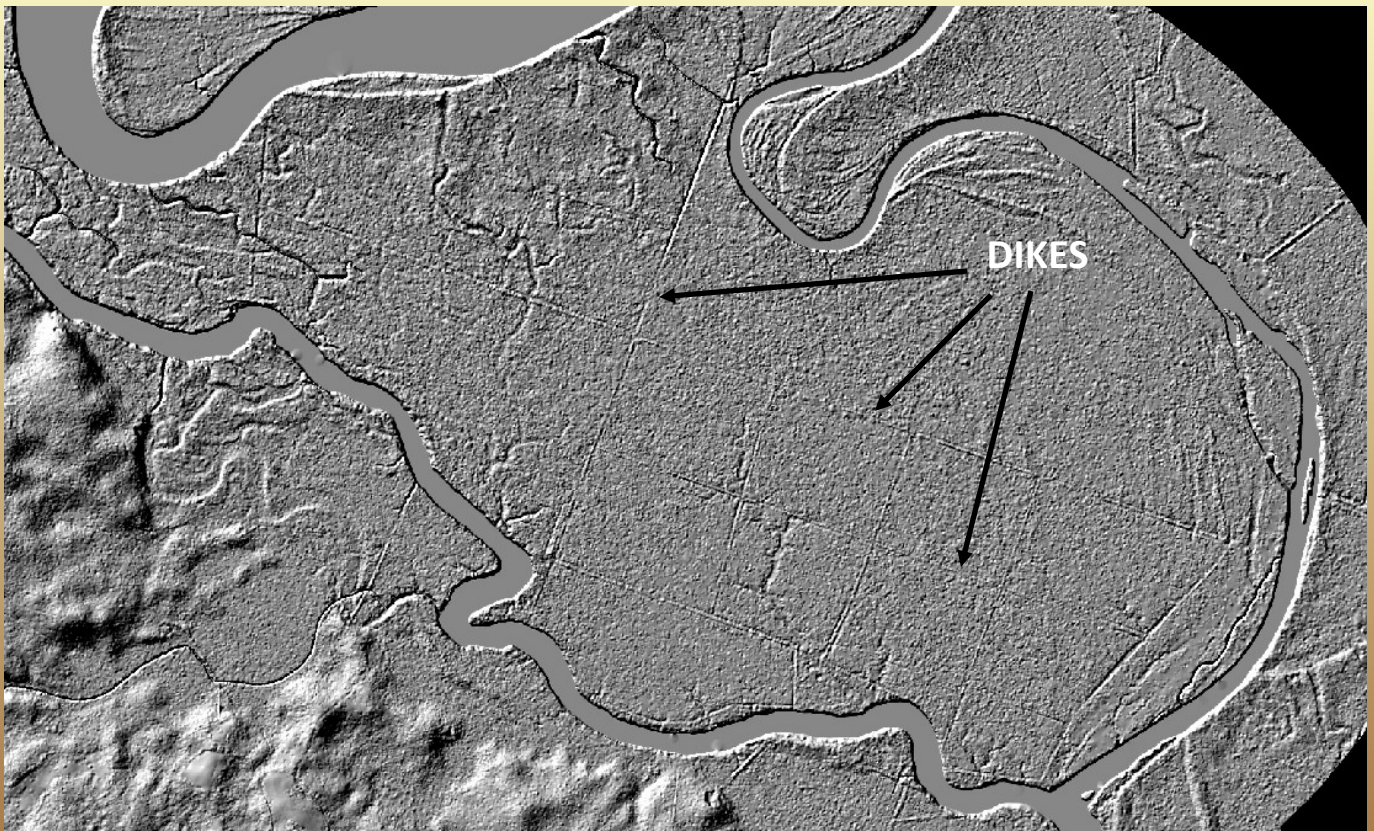


Meetings began this summer among local and statewide experts to identify rice fields that have not previously been mapped.





*The image above is a false-color aerial image of a river, creek, and the floodplains between them. It is very difficult to detect, much less plot and measure the dikes of the historic inland rice fields because of the tree canopy cover. When viewed using LIDAR, below, the tree canopy is 'peeled back' revealing the subtle differences in elevation between dikes and the floodplain floor.*





# From the President:

By Dr. Ernie Wiggers

We had another wonderful Friends event in October! Nature was kind, granting us a beautiful fall day to celebrate the support of the Friends of Nemours Wildlife Foundation, our partners and neighbors! Guest speaker Grainger McKoy, renowned wildlife sculptor, spoke about the importance of encouraging the efforts and passions of others as first his mother, and later a mentor, encouraged him. It was a great pleasure to listen to Grainger speak about the people who inspired him - I have never had so many people comment on how moved they were by one of our presenters.

But for me, one of the most rewarding moment of the day was when Foundation Board Chairman Colden Battey announced the establishment of the Nemours Wildlife Foundation's Scholarship at Clemson University in the name of the late Laura and Eugene duPont. In the audience were the Provost for Clemson University, Dr. Bob Jones; Chair of the Department of Forestry and Environmental Conservation, Dr. Greg Yarrow, and Senior Director for Development for the College of Agriculture, Forestry, and Life Sciences, Margaret Owens. They were very pleased to accept this offer on behalf of Clemson and dedicate it to supporting graduate students studying wildlife conservation issues. Representing the family that day were Eugene duPont's daughter, Gigi McShane, her husband Mike, Laura duPont's son, Jim Johnston, and his wife Nan.

What an absolutely spectacular honor for Laura and Eugene! This scholarship will ensure the long-term recognition of the legacy they established and left for all of us. I believe they would be very pleased to know this gift in their name will be used to support the research work of graduate students for years to come. Both Eugene and Laura were committed to helping young people succeed and this scholarship certainly fulfills their wishes. Dr. Yarrow told me scholarships like this help his department attract and recruit the very best and brightest students. Knowing the quality of students we already are recruiting makes me wonder just what amazing science might be achieved by students supported through this scholarship. These new discoveries will lead to milestones in conservation and further grow the legacy begun by Laura and Eugene.

Without a doubt the best years of the Foundation are ahead of us.  
Thank you Board Members for this remarkable recognition and thank you  
Laura and Eugene!



ABOVE, left to right, Mike and Gigi McShane, Dr. Greg Yarrow, Grainger McKoy, and Bob Jones. TOP RIGHT, Laura and Eugene duPont. BELOW RIGHT, Jim and Nan Johnston.

("From the President" Continued on next page)

("From the President..." Continued)

## Happy Retirement to Some Longtime Friends!

Just as the turning leaves signal the coming end of another year, the retirement of four colleagues and friends signals the coming end of a generation of professionals. While Al Segars, Bob Perry, Dean Harrigal, and Derrell Shipes are not directly connected to the Nemours Wildlife Foundation, they all have been wonderful partners and supporters. Their support was often behind the scenes but was so critical to our success. For example: connecting us with veterinarians to do surgical implants of transmitters on waterfowl, being an integral part of working with the Corps of Engineering to develop a general permit for managed impoundments or taking our students into the marsh at night in an airboat to capture water birds. Each of these men has made many significant contributions. Their comradery, championing of our proposals for grants and, most importantly, their mentoring of our students, cannot be overstated. For some in this group, we cut our professional teeth together way back in graduate school in the 70s and we have remained friends ever since. Now our profession is losing four great individuals who will be difficult to replace. Their retirement is a reminder of why the Foundation's role in developing the next generation of professional biologists is so important. To Al, Bob, Dean, and Derrell, I say have a wonderful, long run at retirement. Thank you for all you have done for conservation in this state and for being dear friends!



**Dr. Al Segars** is a native of Hartsville, SC, and a 1974 graduate of Clemson University. He received a DVM degree from the University of Georgia Veterinary School in 1983 and owned and operated a mixed animal practice in Hartsville for 14 years before moving to Beaufort in 1996. Three years later, Al began working for the SC Department of Natural Resources. Most of his early work centered on shrimp diseases and sea turtles. Eventually he became stewardship coordinator of the ACE Basin National Estuarine Research Reserve. As a veterinarian for SCDNR, Al managed the SC Marine Mammal Stranding Network. He and wife, Mary Grayson, live on St Helena island.



**Dean E. Harrigal** is originally from Aiken, SC, but now resides with his wife Jean in Green Pond. He received his bachelor's degree with honors in Economic Biology from Clemson University in 1979 and his master's degree in Wildlife Biology, from Clemson in 1982. Dean came to the Lowcountry in 1983 to manage Poco Sabo Plantation. He then joined SCDNR in 1990 as a small game biologist for the Division of Wildlife & Freshwater Fisheries, then served as the ACE Basin Project Coordinator/Regional Wildlife Biologist/Waterfowl Program Leader for that division until 2015 when he became Regional Coordinator, Wildlife Region IV .



**Bob Perry** earned his Bachelor of Science in Biology from the University of South Carolina in 1976 and his master's degree in Wildlife Biology from Clemson University in 1979. From 1978 to 2004, he was Project Supervisor of Waterfowl and Wetlands Management Projects for SCDNR after which he served as Director of SCDNR's Office of Environmental Programs. Following his recent retirement from SCDNR, he joined the Palustrine Group, LLC as a Mitigation Specialist. He and his wife, Patty, live in Columbia, SC.



**Derrell Shipes** earned his bachelors degree from the University of South Carolina in 1975 and his master's degree in Wildlife Biology from Clemson University in 1978. For the past 16 years, he has been Chief of Statewide Programs, Research and Monitoring for the Wildlife Section of SCDNR. During his 42 years with SCDNR, Derrell also has served as Furbearer Project Supervisor—Wildlife Section (1978-1984), Deer Project Supervisor—Wildlife Section (1984-1995) and Assistant Chief—Wildlife Section (1995-2001). He and his wife, Susan, live in Lexington County.



# What have our interns been up to?

*These internships were made possible by a generous grant from the Stanley B. Farbstein Endowment through the Coastal Community Foundation of South Carolina (Castles and Christine) and a newly formed partnership with the University of South Carolina Beaufort (David) and the Friends of Nemours Wildlife Foundation.*

## **David Barnes, Islandton, SC, University of South Carolina Beaufort Spring of 2017 graduate with a Bachelor's Degree in Biology.**

"Working here has been a great experience for many reasons, but mostly because previously my focus had been on graduation and getting out into the "real world". It didn't take me long to realize I wasn't ready for that because I had spent all my time being a student and none of it experiencing research and field work. Nemours has shown me what wildlife students and professionals truly experience. I actually got to interact with people who were in different phases of their academic careers, from students still working on their Bachelor's Degree to those finishing their Master's Degree and preparing for the next step."



Castles helped our graduate student trap Black Bellied Whistling Ducks .



David, right, assists Dr. Bill Sammons with implanting a transmitter into a Black Bellied Whistling Duck.

## **Castles Leland, Wadmalaw Island, SC, Clemson University Junior majoring in Wildlife & Fisheries Biology**

"In my brief time at Nemours I worked with other interns and several graduate students on research such as processing submerged aquatic vegetation and invertebrates samples, checking wood duck boxes, trapping Black Bellied Whistling Ducks for banding and transmitter implanting, helping build and place feeding stations for trapping Southern Fox Squirrels and helping track the movements of Eastern Diamond-back Rattlesnakes. I also got to assist plantation management in the building and installation of rice trunks."

## **Christine O'Connell, Spartanburg, SC, Clemson University Senior majoring in Wildlife & Fisheries Biology**

"The Nemours Wildlife Foundation provided my first hands-on experience in the field. I was able to work with an animal (Southern Fox Squirrel) I did not even know existed until earlier this year and that I would never have been able to see in my hometown or Clemson.

As my brother said when I told him this was going to be my job for the summer, this was a "character-building experience" and I would not trade it for anything!"



Christine with a Southern Fox Squirrel awaiting its radio collar.

# News & Notes...



**LEFT:** During our Fall Friends Event, Grainger McKoy delighted the crowd by bringing the very first bird he ever carved. He carved this bird as a boy from a piece of wood his mother let him saw off of their log cabin home in Sumter, SC.



**ABOVE:** A trailer for the Outdoor Dream Foundation, made possible by a grant from the Beaufort Fund of the Coastal Community Foundation to Nemours and outfitted by our president and CEO, Dr. Ernie Wiggers, made its debut.



**ABOVE:** Guests prepare to take a tour of the property guided by Nemours Wildlife Foundation biologist Beau Bauer.

**RIGHT:** Dr. Ernie Wiggers and Dr. Travis Folk (Folk Land Management) were invited to speak about the cultural and conservational importance of historic rice fields at a meeting of the Association of African American Museums held at the Smithsonian's National Museum of African American History and Culture in Washington, DC in July.







Our graduate students did not have an idle summer. **LEFT:** Gillie Croft of Clemson University had an assistant helping him check duck boxes on Rose Hill Plantation - Harry Morrison, grandson of Nemours Wildlife Foundation board member and owner of Rose Hill, Lane Morrison. **ABOVE:** Marshall University's Mike Jungen releases one of his charges back into the wilds of Nemours Plantation. This one is named Gwen!

**RIGHT:** The Nemours Wildlife Foundation family has grown by leaps and bounds! At our recent Friends of Nemours fall event, foundation staff member Peachie Washington was surrounded by her "children" and her children's children. Peachie recently celebrated her 70th birthday and has been with Nemours for more than 37 years. Left to right: Jess Bauer, wife of Nemours biologist Beau Bauer, with their son Jimmy; Peachie with Levi Rickenbaker, son of plantation manager Justin Rickenbaker and wife Emily; Bailey Barrineau, wife of former Nemours intern Daniel Barrineau, with their son Chandler, and last but certainly not least, in front are Charlotte Bauer, Beau and Jess' daughter, and Trace Kitler, son of plantation manager Robert Kitler and wife Allison.



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