



# Living with Wildlife: Wood Storks & Other Wading Birds

Kacy Cook, Coastal Waterbird Biologist  
Wildlife Diversity Program, Wildlife Management Division



# NC Wildlife Resources Commission:

---

## Your State Wildlife Agency

Inland Fisheries



Law Enforcement



Wildlife Management



Wildlife Education



Habitat Conservation



Operations



Wildlife Diversity



Game & Furbearers



Waterbird  
Investigations &  
Management  
Project





# Wildlife Diversity Program

- **NC Wildlife Action Plan**
- **Species of Greatest Conservation Need, Species of Concern, State- and Federally-listed Threatened & Endangered Species**
- **State & Tribal Wildlife Grant program**
- **Wildlife & Sportfish Restoration program (WSFR)**
  - **Pittman-Robinson**
  - **Dingle-Johnson**
- **Non-federal matching funds**
  - **License sales (fishing, hunting, trapping)**
  - **Tax check-off**
  - **Purchase of license plates**







# Waterbird Project

---

Long-legged  
Wading Birds



Shorebirds



Seabirds



Marsh Birds



Christy Hand





# Waterbird Project Goals

---

**Maintain viable populations of native waterbirds & quality, dispersed habitats for them.**

- **Population & habitat goals set by the NC Waterbird Management Committee (2000)**
  - Protection of populations & habitats
  - Creating new habitats
  - Controlling predators
  - Educating the public & developing community scientist groups
- **Management**
- **Collaborate with others along the Atlantic Flyway**



- *Mycteria americana*
- The only stork native to North America
- Wood ibis, ironhead, flinthead, gannet, preacher bird
- Wing-span is about 60-85 inches
- Bald head and neck, slightly decurved bill







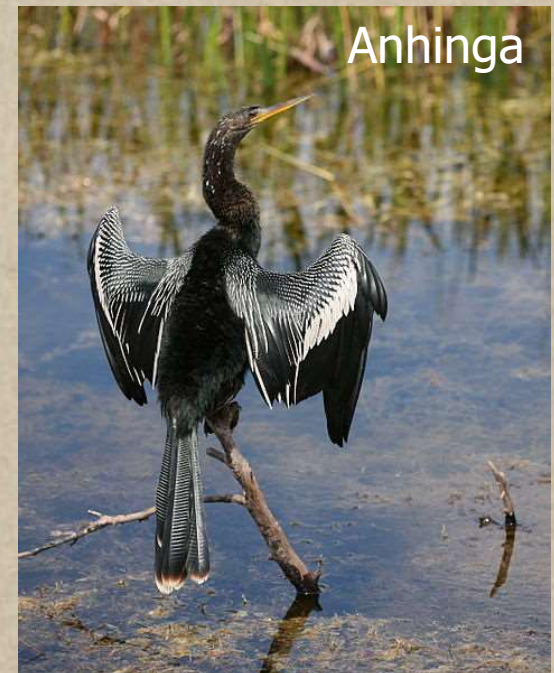
# Other Wading Birds







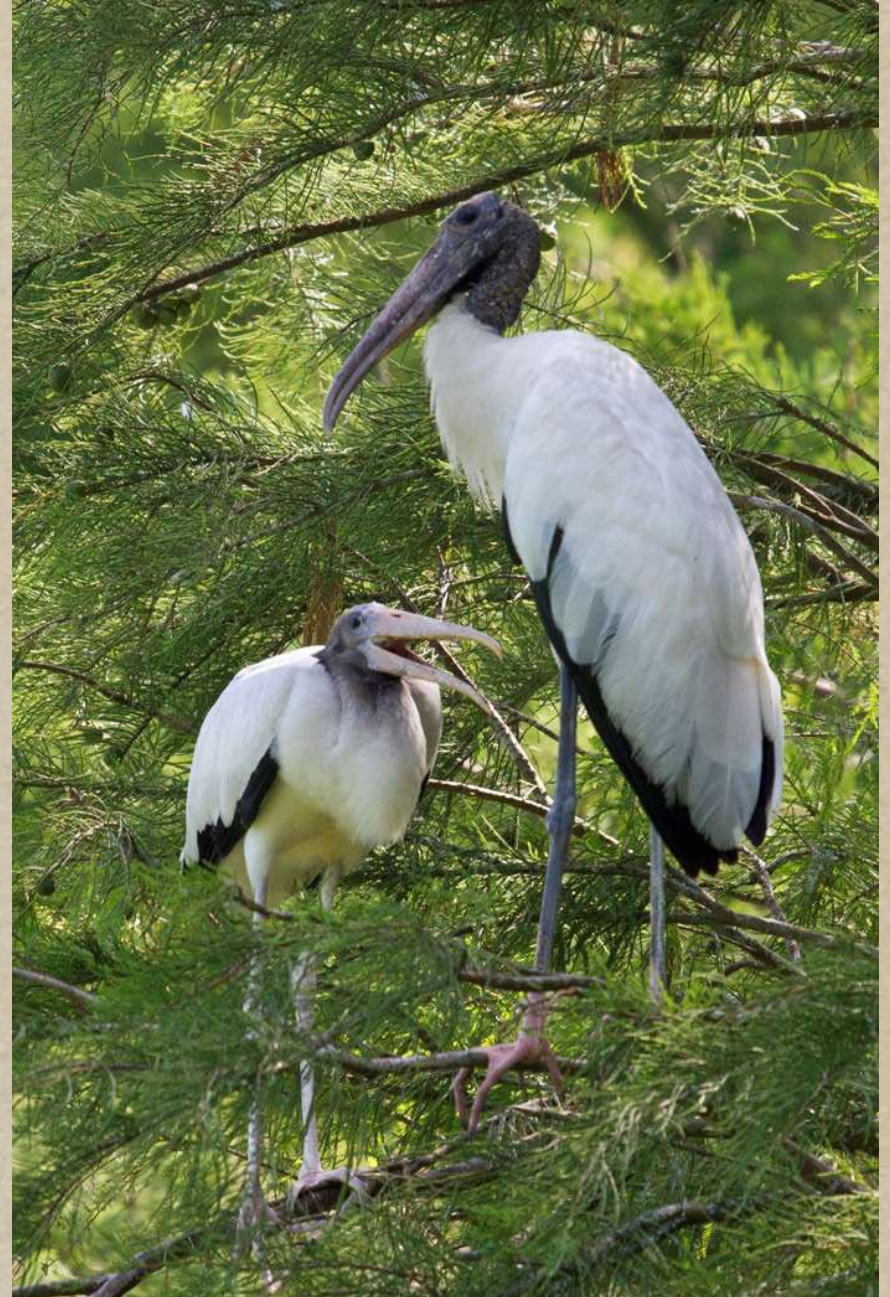
# Other Wading Birds







# Wood Stork Nesting







# Nesting Habitat



South Carolina DNR



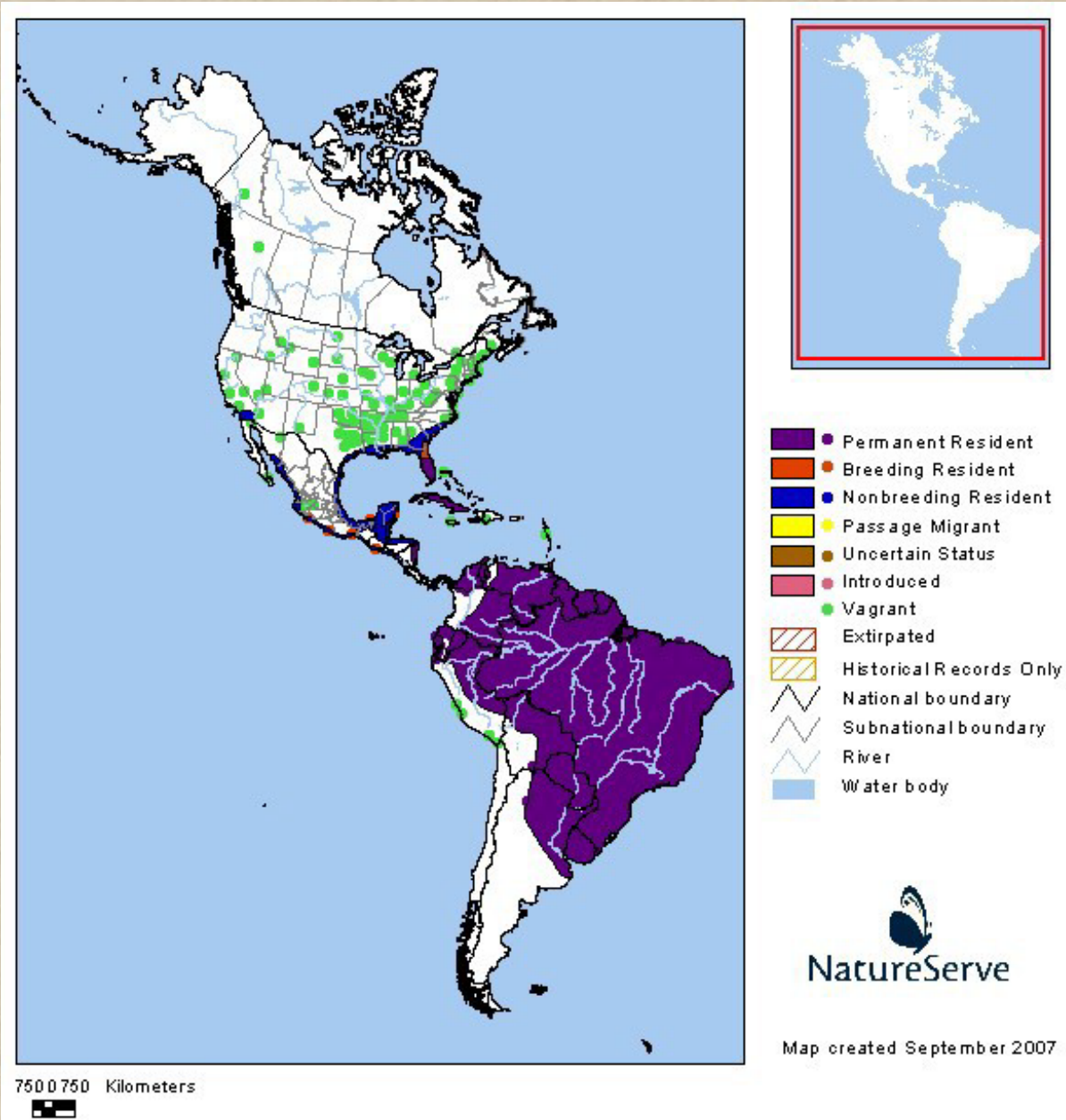
Photo: David Hooper/Audubon Photography Awards





# History

- Federally listed as Endangered in 1984
- Historical range in the U.S., from South Carolina to Texas
- Next closest nesting population is in Mexico, extending south to northern Argentina – the Southern population; is not Federally listed

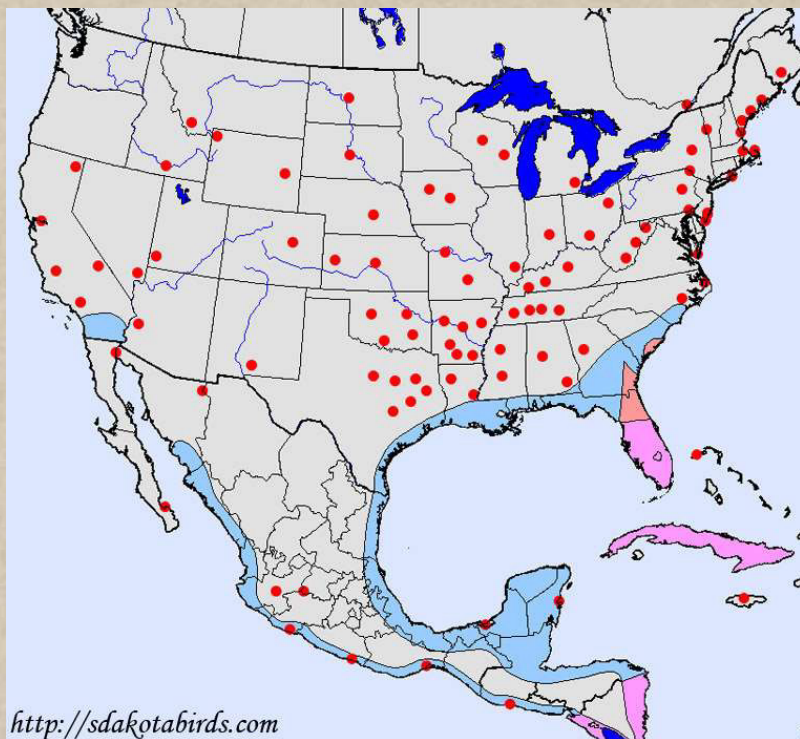




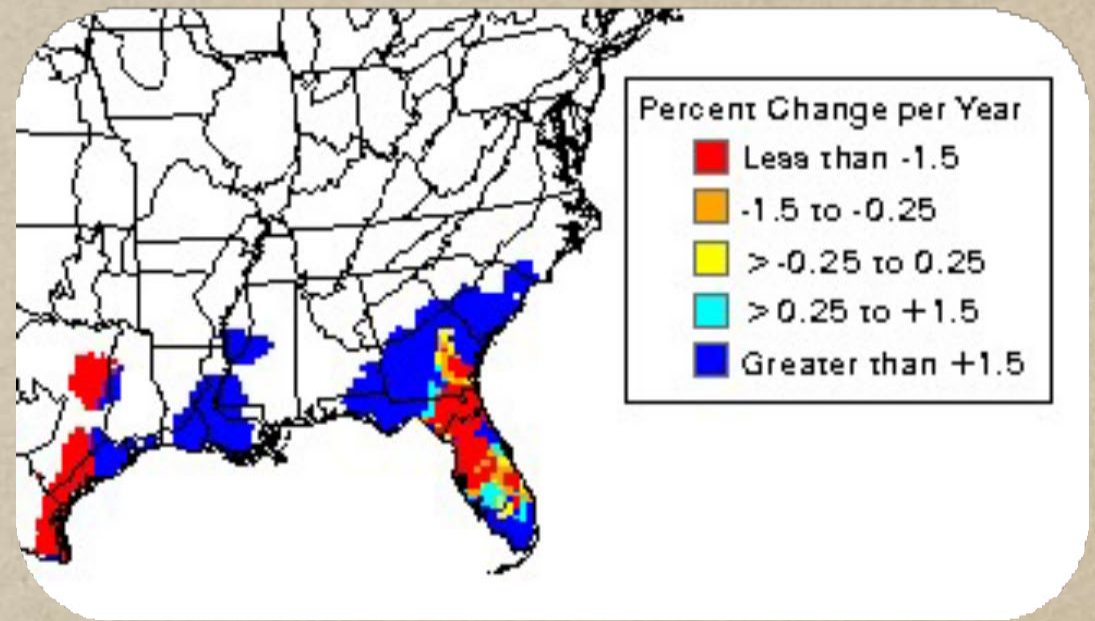


# History

**Within the U.S., population expansion has continued since increased protection began**



<http://sdaqotabirds.com>



Population trend (1966-2011) from BBS data (USGS)





# Wood Storks in NC

- **Recovery Plan for the Wood Stork was completed in 1989 by the USFWS and partners from state agencies and NGOs**
- **Actions which successfully increased the population included:**
  - **Restoring hydrology and use of impoundments**
  - **Replanting cypress**
  - **Use of nest structures**
  - **Supplementing fish in ponds near nesting areas**
- **The Wood Stork was successfully down-listed to Federally Threatened in 2014**

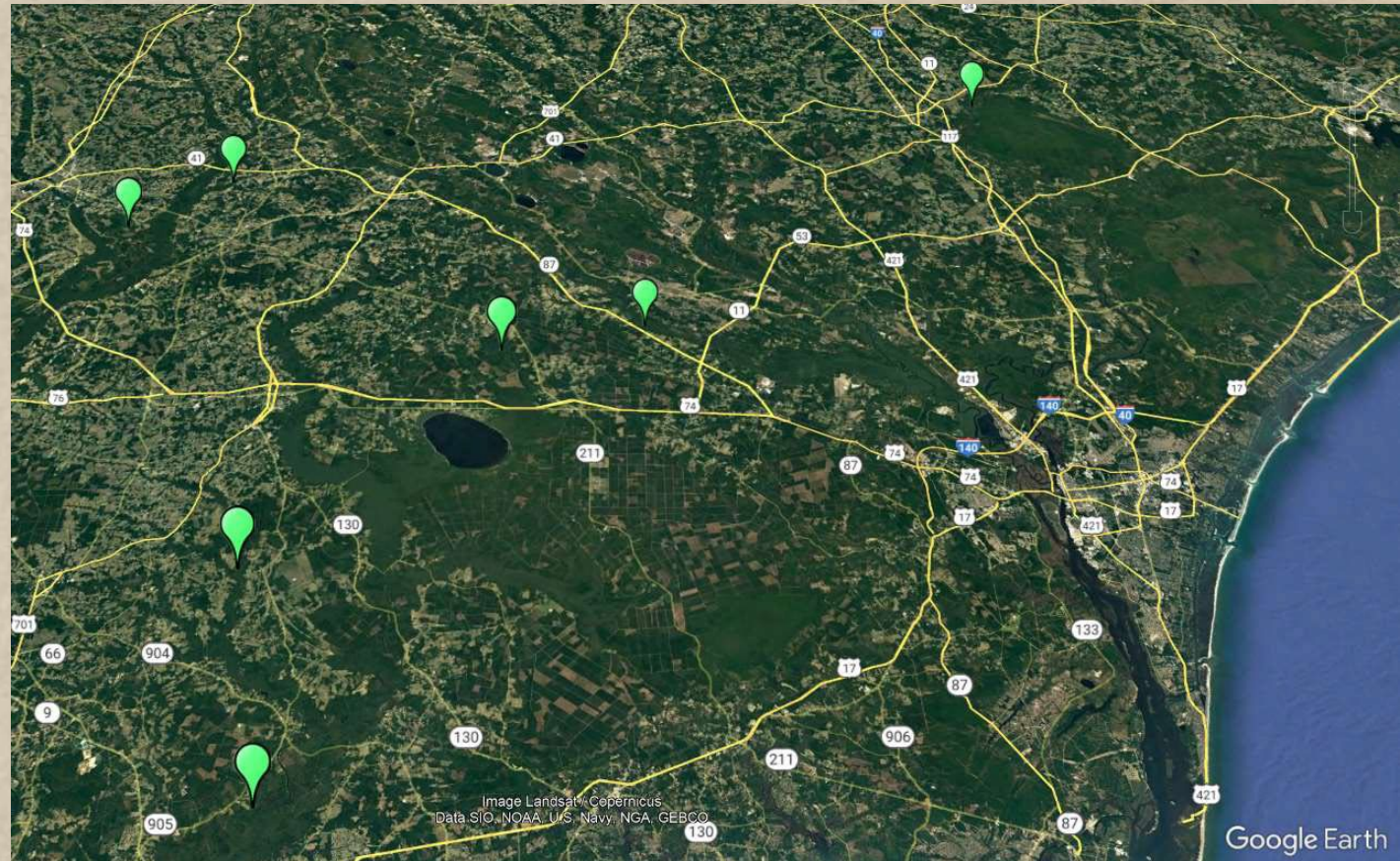
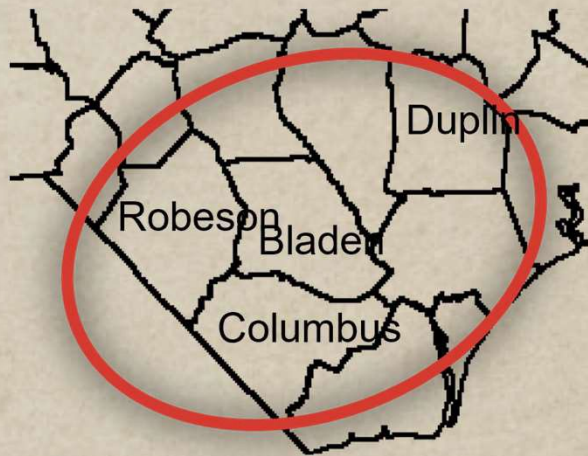


Wistakuliner.xyz





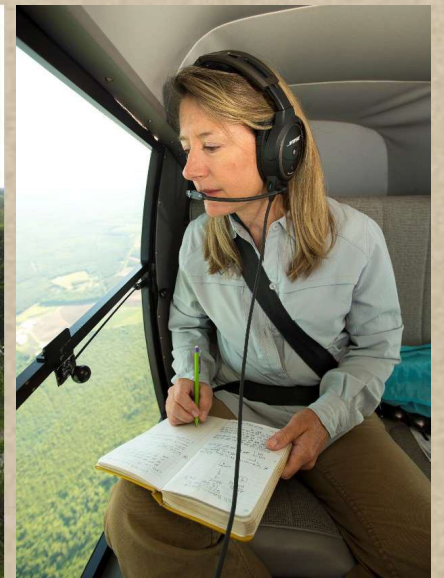
# Active Colonies







# Surveys







# Un-manned Aerial Vehicle Surveys







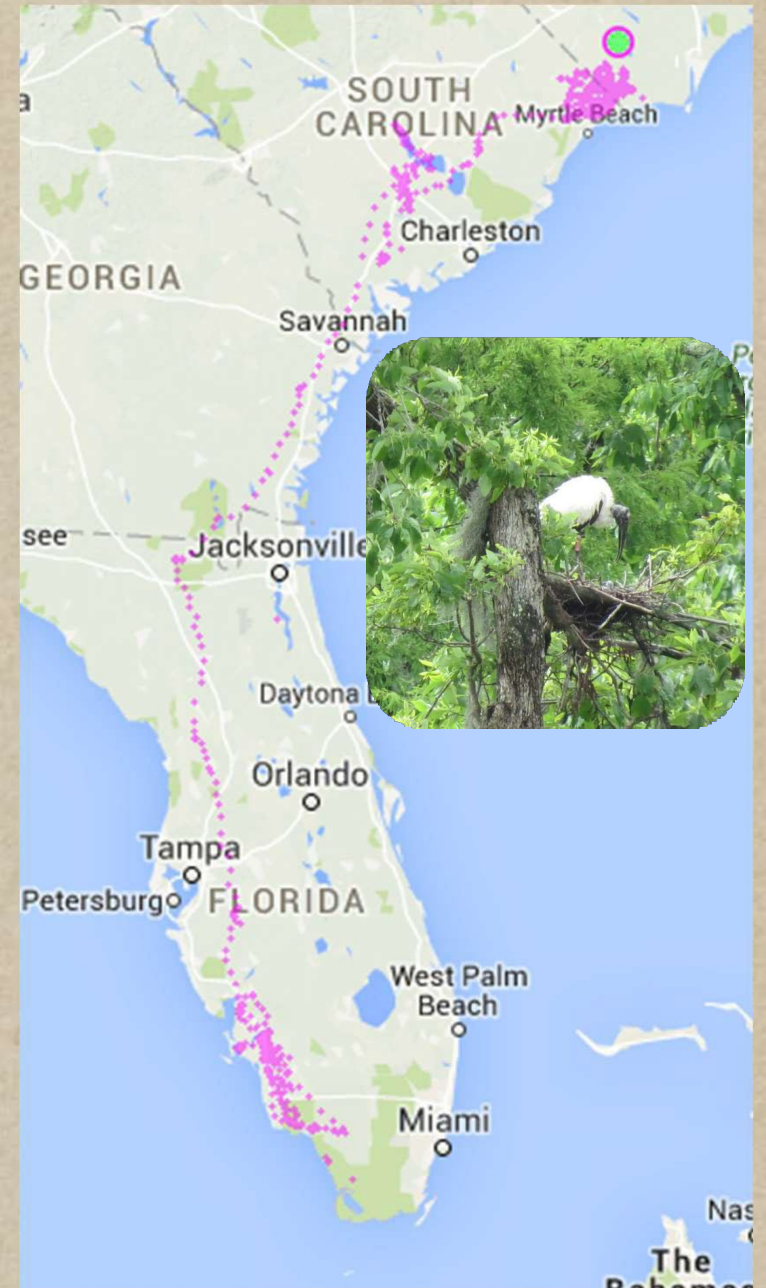
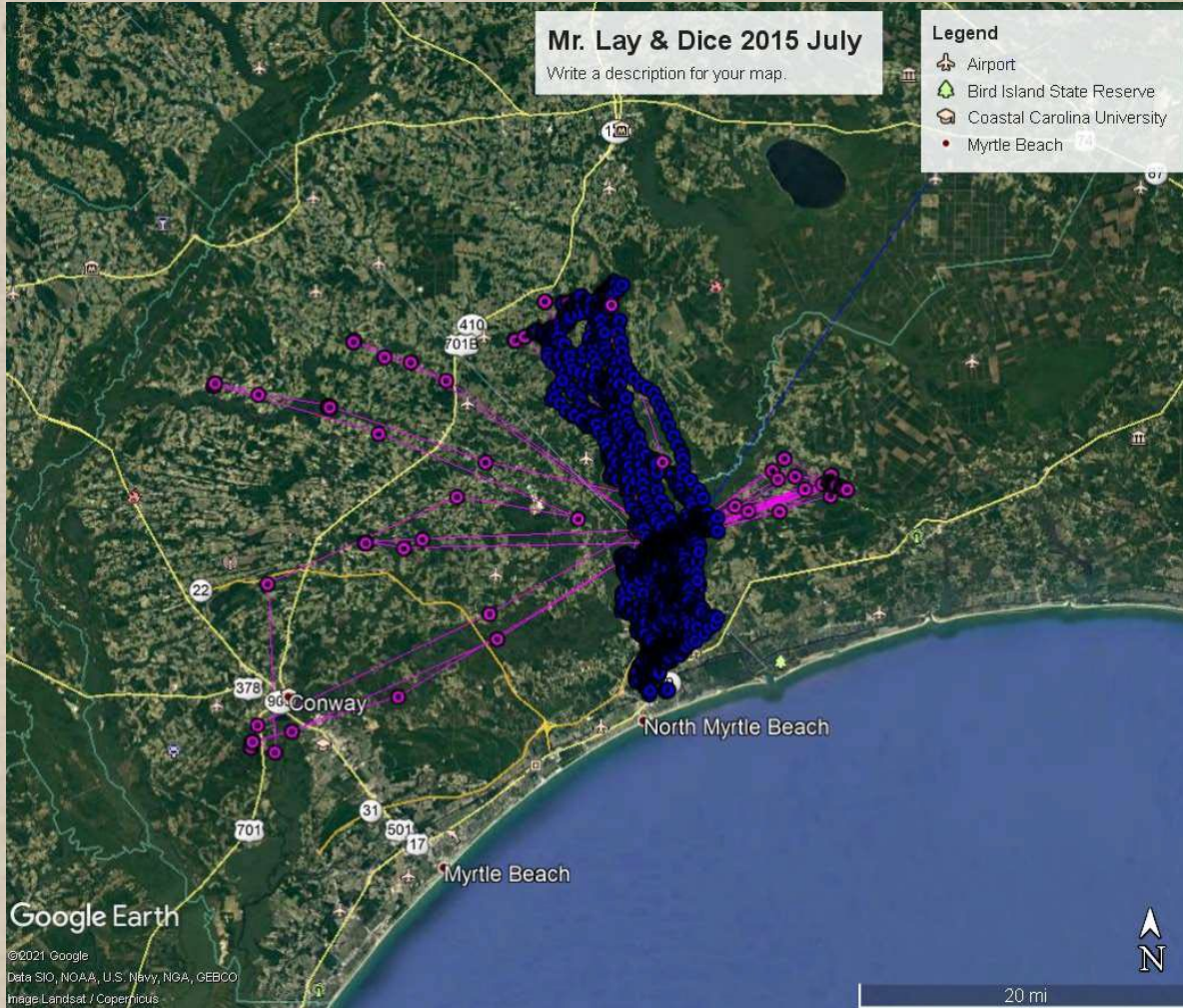
# Telemetry







# Telemetry







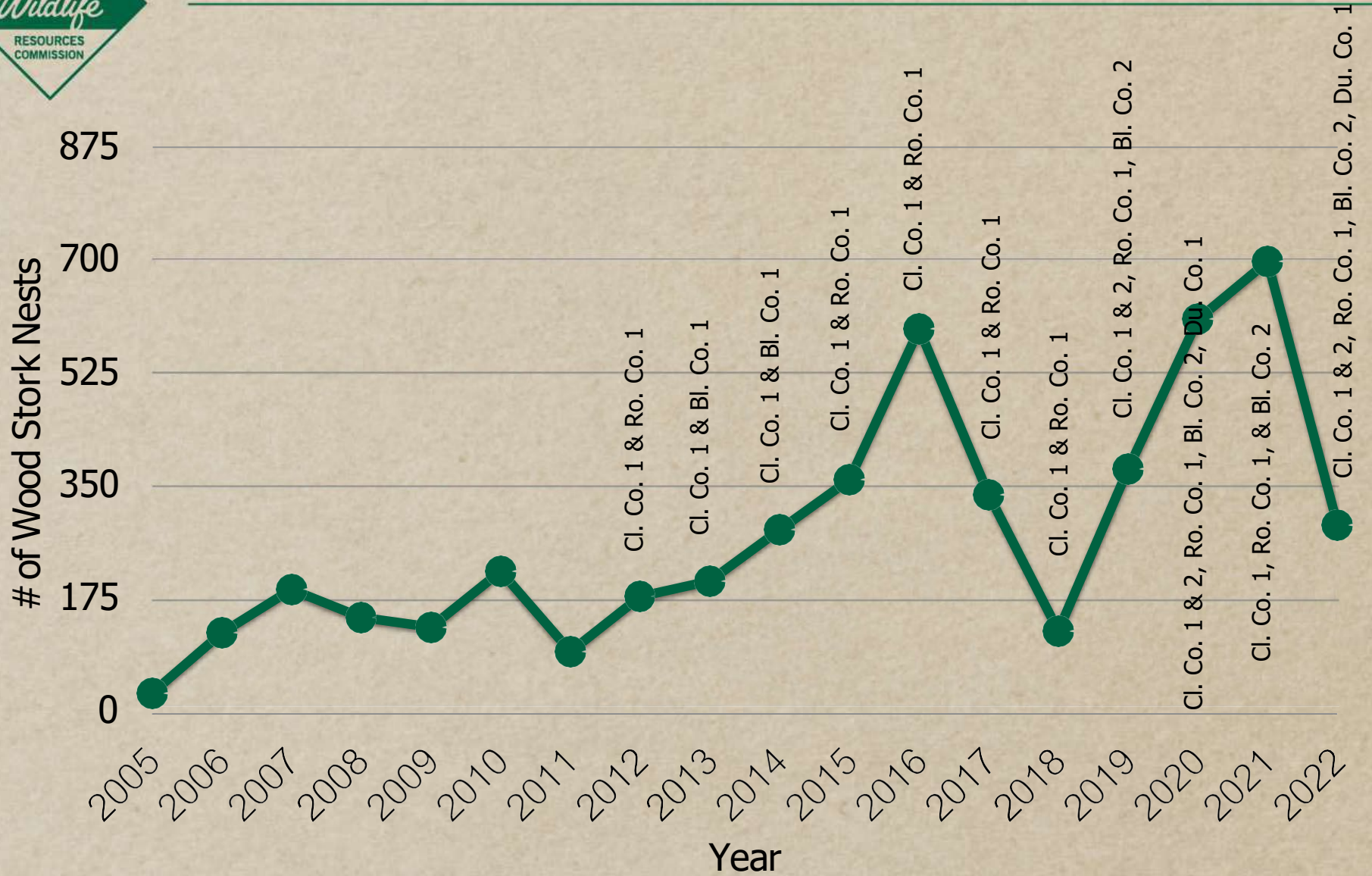
# 2022 Population

<b>Colony</b>	<b>2022 #Nests</b>	<b>Change since 2021 (#)</b>
Columbus Co. 1	147	-296
Robeson Co. 1	10	-100
Duplin Co. 1	75	75
Bladen Co. 1	52	-93
Bladen Co. 2	8	-
Columbus Co. 2	0	0
<b>Total</b>	<b>292</b>	<b>-406</b>





# Nesting Population Trend







# What Causes These Highs & Lows in Wood Stork Numbers?



- May not return to nest here
- Health / Disease
- Mortality
- Foraging success depends on
  - Food abundance
  - Human-caused Disturbance





# Wood Storks need to eat 1/5 of their body weight per day, & much more when feeding young

---



- Imagine if we had to eat that amount? 20 – 40 pounds of food per day???



Flight is energy expensive. When storks are disturbed, it causes them to need even more food.



- Great Egret (similar size) spends 26% of its energy on flying.

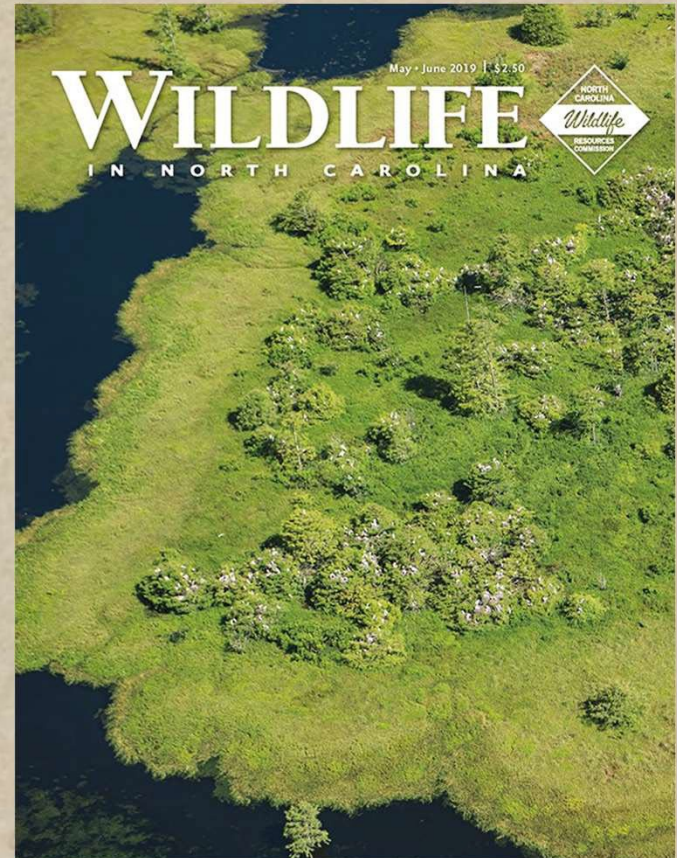




# Good News!

---

- **Publicity for Wood Storks**
- **Enthusiasm by private landowners**
- **Conservation of foraging habitat**
- **Several colonies have been conserved by NC Parks, Audubon NC, the NC Coastal Land Trust, and NCWRC**
- **USWFS has proposed delisting**







# How you can help

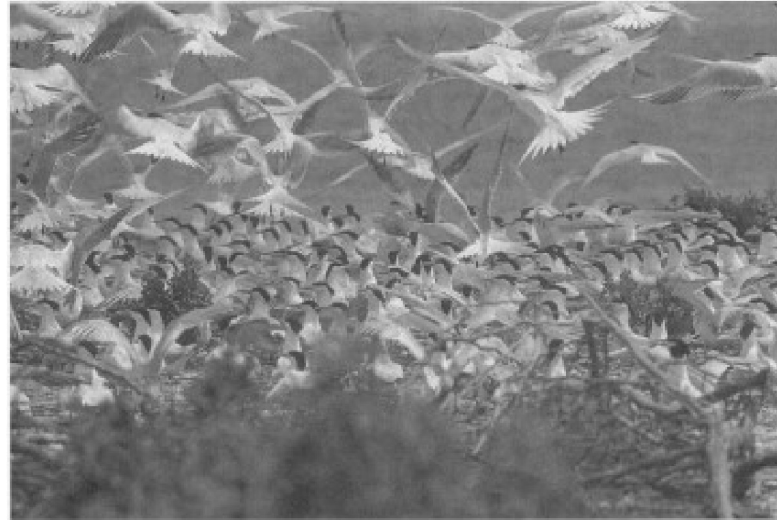
---



- Report sightings of nesting Wood Storks to NCWRC
- Land Conservation
- Remove marine debris, including fishing line.

Keep your distance: Stay more than 350 feet away from foraging Woods Storks & other wading birds - About the length of a football field or more.





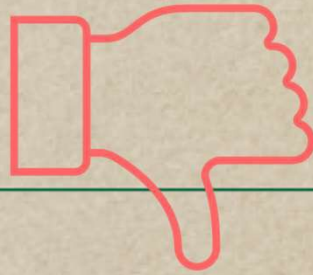
Royal terns; III, 1500 from a loafing area on a Florida beach. Photo by S. A. N. Smith

## Buffer zone distance, to protect foraging and loafing waterbirds from human disturbance in Florida

*James A. Rodgers Jr. and Henry T. Smith*

**Abstract** Sixteen species of waterbirds (Pelecaniformes, Ciconiiformes, Charadriiformes) in north and central Florida were exposed to 4 types of human disturbances (walking, all-terrain vehicle, automobile, boat) to determine buffer zones that minimize flushing of foraging or loafing birds. Both intraspecific and interspecific variation were observed in flushing response distances to the same type of disturbance. Buffer zones were estimated using a formula based on the mean plus 1.6495 standard deviations of the observed flushing distance plus 40 m (buffer distance =  $\mu + 1.6495\sigma + 40$ ). A buffer of about 100 m should minimize disturbance to most species of waterbirds in Florida. We recommend follow-up studies to test our buffer distance for other species and disturbance situations.









# Ideas on Reducing Disturbance of Wading Birds

---

- Wood Storks use areas of short grass. Therefore the peninsula and everywhere Wood Storks are desired should be mowed.
- The Board has the idea to allow fishing when Wood Storks are not present in the area which is approximately from December to June (or when Wood Storks arrive in the neighborhood and when they are not seen for some time). Science supports this potential decision.
- Signage with Wood Stork and other photos can describe something like the following.
  - Wading Bird Foraging Pond – Wood Storks and other wading birds need to eat too.
    - Wood storks and many other wading birds need to eat 1/5 of their body weight per day to survive. That's like us eating 10 – 40 pounds of food per day!
    - Short distance flying likely takes 25% or more of their energy per day. So, the more flying and less eating these birds do because people are disturbing them, the greater their chance of starving.
    - Wood Storks and other wading birds will usually fly off if people are 350 feet or less from them. They may startle and fly off even if people are further than 350 feet away.





# Thank You!



The UNCW Coastal & Estuarine Studies Lab, Audubon NC, NC Parks, the NC Coastal Land Trust, Chris Smith, the private landowners, and numerous Waterbird Project technicians.

**Based on a presentation & work by Sara H. Schweitzer and Carmen M. Johnson**