North Carolina 2020 Update



LINDSAY ADDISON COASTAL BIOLOGIST



Partners



AMOY: 2019 statewide breeding census





Statewide Census Results 2004-2019



- State divided into survey plots
- Each visited at least once at high tide; sites with productivity monitoring use those results
- Apparent increase in pairs
- Plots will better quantify effort in future

Management Under Covid

Public Use

- Closures, especially in spring decreased access and use at many sites
- Sites saw increased use as summer went on and closures expired
- Varying responses by the public in attitude and use patterns
- Lack of volunteers across the board

Management and Monitoring
Overall, posting accomplished on schedule

 Delays in monitoring, fewer staff, or decrease in frequency of monitoring at some sites

Productivity Monitoring



- Pea Island National Wildlife Refuge
- Cape Hatteras and Cape Lookout National Seashores
- Hammocks Beach State Park (Bear Island)
- Onslow Beach
- Lea-Hutaff Island, Inlets and Wrightsville Beach
- Masonboro Island
- Fort Fisher State Recreation Area
- Cape Fear River Islands



Productivity 2011-2020



mean barrier productivity = 0.43 mean other productivity = 0.36

mean barrier pairs monitored = 151 mean other pairs monitored = 64



Productivity 2011-2020



mean pairs monitored = 215 / mean productivity = 0.41

Threats

- Predation: coyotes continue to be a primary problem at many sites where productivity is low
 - Red fox and raccoons problematic, as well as gulls at dredge and natural sites
- Overwash: becoming more common on barrier islands, continuing to be a major issue on natural islands
 - Driven not only by tropical cyclones, but wind events, low-pressure systems, and king tides
- Disturbance/off-leash dogs: may have been exacerbated by pandemic and increased outdoor recreation
 - Acute issues at a handful of sites

Hurricanes

Florence (2018)



Dorian (2019)

Cape Lookout island breaches



Isaias (2020)



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2021 and Projects

- Statewide banding
- CALO, NC Coastal Reserve, NC State Parks & ANC: AMOY roost surveys
- ANC, U of OK, PINWR, NC Coastal Reserve: dataloggers
- NC Coastal Reserve: ongoing camera work for predator control; potentially participating in development of a NFWF grant to develop tools to support wildlife camera use in predation management efforts
- CALO: sediment and bivalve sampling for contamination (not AMOY-specific)



Questions about this or the American Oystercatcher Band Database:

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NC 2020 State Update Slide Text

- 1. Hello everyone. I'm Lindsay Addison and I work for Audubon NC. I'm here to bring you the North Carolina 2020 state update on behalf of...
- 2. ...these partners. Together we work in some capacity at the majority of sites in the state where AMOY are found.
- 3. We haven't presented in detail previously, but in 2019 we did complete our tri-annual breeding census. It found 393 pairs of AMOY, which as you can see on the map are concentrated in the southern half of the state. The landscape types that the pairs were found on reflects the typical distribution of pairs in the state, with a slim majority on barrier islands and about a quarter on natural islands. Most of the rest are on dredged-material islands.
- 4. We've been doing these statewide censuses since 2004. We've standardized survey plots which will help us to better quantify effort in the future, and we have found an increase in pairs in the past 15 years.
- 5. In North Carolina, beaches began closing in late March. Some OBX counties closed entirely to non-residents. These closures resulted in lower overall use of most beaches and other coastal areas. However, reopening began in May, and usage went back up. Some sites noticed a bird response to the fluctuations, even with postings in place. At one high-use area on CAHA, there was a noticeable decline in AMOY interest soon after the public/ORV access was restored. When people were back on site, higher than normal use made enforcement a challenge at some sites, and at some sites, people just behaved badly. Patterns of use also changed. Some people hadn't been to site before and didn't know the rules, and weekday use increased in some cases.

Management fortunately was mostly the same, though, as essentially all sites were posted on schedule. However, many sites reported changes to intensity of work related to staff availability or new pandemic-related logistical hurdles. Virtually all sites lost the use of volunteers, which are an important source of labor for posting and outreach, but in NC volunteers generally aren't relied on for monitoring. So...

- 6. ...the sites with 2020 productivity are the same sites that would be reporting productivity in a typical year.
- 7. We typically monitor about 40% of the state's total pairs, and monitoring is skewed somewhat to barrier islands vs. natural or dredge islands. The uptick in barrier pairs monitored in 2013 was due to Masonboro Island beginning its monitoring program. Success on barrier islands and other landscapes is often divergent, reflecting some different challenges across landscapes.
- 8. Overall, productivity averaged 0.41 f/p across the last 10 years at monitored sites, and NC hasn't reliably reached the 0.5 f/p target established in the original AMOY Business Plan, either on particular landscapes or overall.
- 9. Overwhelmingly, predation was the biggest threat directly causing nesting failures, and coyotes are the biggest problem at most of the sites that cited predation as an issue. Overwash is an increasing problem on barrier islands like Hatteras, and continues to be a major problem on natural islands, such as on the CFR in the southern part of the state and on marsh islands in and around CALO. Disturbance may have had an uptick because of the pandemic and it appears to be increasingly acute at a handful of sites, including some dredge islands.
- 10. We've had three years of hurricanes, each with their own impacts. Florence caused the near total die-off of oysters on the CFR (100 pairs) and in 2019 many pairs didn't even attempt to

nest, they just held territories. Dorian impacted CALO the most severely, opening over 50 new inlets, making access in some areas difficult to this day. There was no post-storm productivity bump, perhaps it was cancelled out by coyotes, because the habitat looks great. Isaias struck in early August, and nesting was completed, but it contributed to ongoing erosion, which the OBX noted in particular.

- 11. Coming up in 2021, we are continuing our coordinated statewide banding efforts and our nonbreeding roost surveys. This fall we were able to expand the roost surveys to include one of the main non-breeding concentrations, which is marked by the green star on the map. This spring Kate Goodenough from the University of OK will be working with multiple partners to start a project to deploy 24 dataloggers and study fine-scale movements and habitat use. We also have AMOY-related projects on Cape Lookout NS and Masonboro Island.
- 12. Partners around the state have various research questions about habitat use, sites' carrying capacity, and more so we'll post a document on the website following the meeting in the hopes that some of these questions might strike a common chord or inspire someone looking for a student project. Meanwhile, follow-up questions or questions about the database can go to my email address here. Thanks!

Research and Management Questions

Pea Island NWR (Becky Harrison and Brian Van Druten)

- Are there additional pairs in hard to access parts of the Refuge?
- Improved understanding of habitat use patterns and individual movements.
- Habitat suitability modeling based on nest site/territory metrics to estimate carrying capacity.
- How rich are our invertebrate communities for AMOY diets, and do storms affect them?

Cape Hatteras NS (Will Thompson, Paul Doshkov, Amy Thompson)

- Spatial study to look at nest loss occurrence in different habitats (on narrow sections of beach vs wide sections, distance to inlets, east-facing beach vs south-facing beach, etc.)
- Nest success, fledge success, and chick foraging behavior in ORV-use areas vs Vehicle Free Areas.

Cape Lookout NS (Jon Altman and Chelsey Stephenson)

• Why didn't the post-storm productivity bump come to be? The habitat looks great, but maybe the coyotes are keeping them down.

NC Coastal Reserve – Masonboro Island (Hope Sutton and Elizabeth Colhoun)

- Better understand how much impact disturbance and dogs are actually having on our birds and whether posting is effective at our site (or what posting strategy would be most effective)
- Better understand foraging activity: what areas of the site are most important to the AMOY, what the condition of the shellfish beds is and what we can do to enhance habitat to benefit shorebirds

Audubon North Carolina (Lindsay Addison and Anna Parot)

- Is Lea-Hutaff Island sediment-starved due to adjacent dredge projects
- Patterns and extent of habitat use by individual AMOY in across landscape types and breeding vs. winter
- Rates of nest attendance at different kinds of nesting habitat
- Can roost surveys be used to estimate wintering population at Masonboro Island and on Cape Fear River, and is the CFR wintering population declining
- How best to protect and enhance nesting rakes on natural islands