

AMOYWG Day 1- November 7, 2023

Lyra Brennan – First-year monitoring results at Norton Point, MA

Monitoring and management at Norton Point, Edgartown. It is a critical location for oystercatchers, plovers, and terns. To put it in perspective, nearly the entire ROST population occurred here this 2023 season. This site is very popular for recreation, including vehicular activity. It is a very passionate community that views driving as a favorite pastime. Various access points and closures during the season protect oystercatchers, plovers, and terns. The closures are established based on the required buffer distances for plovers and terns. In this way, the oystercatchers receive protection because of their spatial overlap with those species. Oystercatchers don't have the same state protections. Nesting and brood-rearing patterns for oystercatchers at the site overlap well with the chronology of vehicle access openings. This benefit, however, relies on early breeding activity for oystercatchers. Compared 2023 nesting outcomes to 2018, a year with similar productivity. However, the patterns of early nesting did not hold up for 2018. Instead, 2018 nests occurred throughout the season. The 2023 success didn't just happen because of the early nesting but also due to proactive intensive management. Close coordination with the town, proactive fencing, flexible beach cross-overs to provide a buffer for breeders, and frequent communication with landowners and partner agencies. Lyra would like to look into variations in management, weather, predators, etc., and how they may have impacted oystercatchers from year to year. Lyra is interested in strategies for oystercatcher management at locations not protected via state or federal status beyond the MBTA.

Questions/Responses:

Shiloh- Does driving occur at night? Lyra- No, the gates close, and nighttime driving is prohibited. They work closely with trustees to enforce. Todd- How were predators managed? Predation management did occur to benefit plovers. Enclosures were used, but they immediately saw the loss of breeding adult due to a merlin. Skunk predation was an issue for plovers, and the USDA had an unsuccessful year capturing them. Sarah Tolve- When the beach is closed for driving, is it open to boats/watercraft/people/pets? Lyra- -boats were limited to specific landing areas, but no pedestrian limitations existed. Dogs are not permitted. Great efforts by law enforcement, but the site is remote and challenging to access. Q- why wasn't predation management unsuccessful, and when did they manage? The town contracts the USDA. USDA did proactive, early management this season. The skunks may not be as active when predation management occurs.

From Carolyn Mostello- MA plover/tern Guidelines require all suitable habitat to be fenced on ORV beaches, except a narrow corridor parallel to the shoreline. Technically, this excludes vehicle "access corridors" to the shoreline corridor. In practice, MassWildlife provides a balanced approach and allows access corridors with 50 yd buffer from PIPL/Tern nests as a starting point, with appropriate monitoring; if monitoring shows no negative impacts (take), this may be reduced under consultation with the agency and continued monitoring.

2023 Range-wide breeding season overview – Shiloh Schulte

Thanks to everyone for putting their state data into the productivity spreadsheet. The data goes back to around 2006. Shiloh provided a brief history of the AMOYWG- how it came to be and each step. See the

WG history timeline screenshot for more details. The AMOY population has increased by 45% growth in the past 15 years.

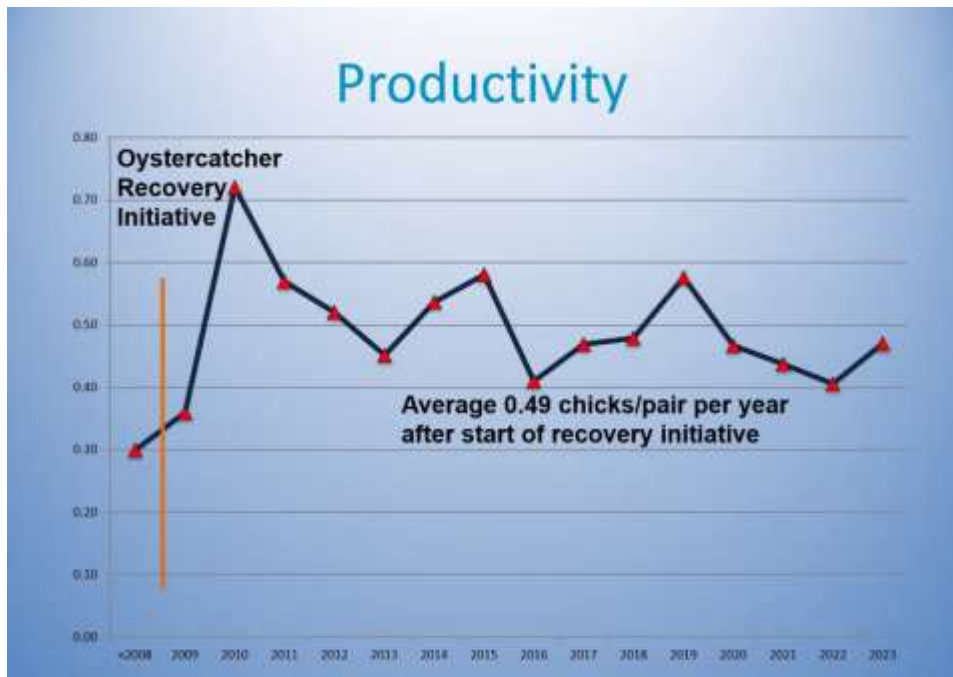


Productivity varied by state. The NE tends to have fewer pairs but relatively high and consistent productivity. The mid-Atlantic, down to Florida, is the core of the breeding population. The low productivity in this area may need to be looked at, particularly if these patterns remain consistent. What does this mean for population resiliency? The consistent management implemented yearly has increased the range-wide average to 0.49, contributing to AMOY population gains. Before 2008, the range-wide average was closer to 0.30, which long-term viability led to a population decline. Interestingly, we are seeing growth without reaching the 0.5-0.6 productivity we identified as needed for growth. This could be that survival is higher than expected or unmanaged/unmonitored pairs are doing better than expected. AMOY are very long-lived birds, and we often see multiple bad years, and then



you have one year where everything lines out perfectly, and you have a boom year. For AMOY, as long as they have an occasional year where they do well, the population will persist, and we will reach our goals long-term. This pattern also suggests the need for recurring

coordination and monitoring to assess long-term trends.



Questions/Responses:

Do we have a grasp of # of unmonitored pairs not captured in the productivity graph? Shiloh- we haven't been able to get funding for a complete breeding survey. However, some states do surveys every 5-years in hard-to-reach areas, but it hasn't been accomplished annually. Todd- In NJ, they tend only to monitor the Atlantic shore habitat, but they

know that ~50% of the population is in marsh habitat, and those are monitored. Alex Wilke suggests breaking down habitats in the productivity overview. Shiloh- this might give us a better understanding of how habitat influences productivity. We hope to do this with a database for annual productivity data vs. the current spreadsheet tracking method.

Brad: Are AMOY creating public awareness of their conservation needs, especially at beaches? Is there any sense of that happening, or is anyone measuring attitudes? Shiloh- The closest approximation he is aware of is the social science work by Virginia Tech. Outreach efforts are occurring throughout the range, but nothing is standardized yet. Alex W. commented on the high NE productivity in AMOY and PIPL. How do we replicate this?

State Updates

Alabama- Supported few breeding oystercatchers but experienced high productivity, near 1.2 fledglings per pair. They continue to band pre-fledge chicks and are seeing some return in addition to juvenile dispersal from Florida.

Connecticut had a record year this year with increased breeding pairs and productivity. The islands have an incredibly high productivity, with 0.94 compared to 0.59 on mainland beaches. They captured many coyote and fox via game camera- contributing to high predation by these two species. They will be using social science-based strategies to reduce disturbance and will be setting up training with land managers and municipalities for the same purpose. They will be starting a restoration project soon.

Florida- More than 200 pairs (including 9 on rooftops) bred in Florida this 2023 season, with a total of 53 fledglings produced (49 from ground sites and 4 on rooftops). Statewide productivity was 0.26, which is

lower than the 5-year average of 0.42. They were disappointed not to see another record year but recognized that boom and bust years are not unexpected for oystercatchers. They successfully identified site-specific threats that can inform future management, including increased predation of breeding adults, young, and chicks, impacts to oystercatchers from fire ants, and increased fishing line entanglement. Despite the lower productivity in 2023, there were locations of success. They highlighted Lake Worth Lagoon, where high productivity has been achieved annually since 2005, when restoration activities began. Similarly, a combination and management actions were implemented at Fort DeSoto, contributing to a full 3-brood fledge success for one nesting pair.

Delaware- Survey inland bays once per month by boat and looking to expand the area they survey to increase coverage. They also surveyed five managed beaches on foot. It was not a great year for oystercatchers. 6 confirmed pairs, 8 nests, but no chicks or fledglings were produced. The low success was likely due to predation and storm events.

Georgia- Lowest year on record for oystercatcher productivity. This year, they used shells to enhance foraging potential- these were successful with live oysters found. The shell restoration project is finally permitted, and Tim hopes to report on that success next year.

Massachusetts- 238 pairs in 2023. Martha's Vinyard and Nantucket accounted for ~50% of the state breeding effort. Oystercatchers are primarily in areas with islands. This 2023 season had the highest number of breeding pairs on record, and they experienced the highest productivity they've recorded- near 1.0 fledgling/pair.

North Carolina- A large number of organizations monitored 19 sites. NC experienced low productivity again, with 0.23 fledglings/pair. NC is seeing a bit of a reversal where the barrier islands are no longer experiencing the highest productivity. Good news- 20% increase in breeding pairs on Cape Lookout. Hurricanes improved the habitat for oystercatchers in this area. Coyote was the primary source of loss at Cape Hatteras. Mesomammals, cats, and ghost crabs have also been an issue this year. They've also noted an increase in fishing line entanglement. There may also be a location on Ocracoke where vehicle strikes may be an issue. Lindsay is looking for management recommendations associated with the vehicles. National Park Service on Pea Island is collaborating with NCSU to understand coyote movement. They will deploy radio collars and use eDNA for capture-mark-recapture at all sites. The oldest banded AMOY in NC is 21 this year, and he successfully fledged 1 chick.

Rhode Island- Only have data for the southern section of the state. They had 23 pair this season, with 13 fledged chicks and a productivity rate of 0.57. This is better than last year with 0.27. The area is experiencing a steady increase, with 5 in 2009 to 23 pairs this year. The south section typically supports 50-60% of the state population. Piping plovers also occur in the area and are also experiencing an increase. They do not see a correlation between success in oystercatchers and piping plovers and would like to understand the nuances impacting the 2 species. They did have a mainland oystercatcher nest hatch for the 1st time in known history. The chicks did not fledge, but it was still a notable success. R02 banded as a breeder in 2021 in RI. Despite fledging 2 chicks in 2021, he abandoned the state and was observed breeding in Nantucket.

South Carolina- The Crab Bank Seabird restoration area- 14 pair and 22 nests were documented with only 1 fledgling. GHOW predation limited productivity, with the owl targeting eggs just before they hatched. Lighthouse did better with 3 fledglings. Outreach and stewardship occurred, and

staff/volunteers were out every weekend. This year was the first shorebird festival. The event was organized to highlight the importance of REKN and other shorebirds/seabirds. More than 500 people attended!! They continue to resight fall/winter band resights. They had a hatch-year bird from Florida- this was interesting as it indicated northward movement. This spring, they will be working with Clemson on a contaminant study. They will collect eggs and tag oystercatchers to look at bioaccumulation associated with foraging locations.

Texas- The first nest this year was found Feb 13, with the first fledge on April 26. 2023 was a mild weather year with no major storm events and low overwash rates. Most of the nest loss was likely predation by LAGU. Fewer pairs this year due to habitat erosion, but 2023 experienced the highest productivity on record. Upcoming restoration projects are planned and should begin in 2024. Work will occur in an area that historically supported 5 pair and is down to 1.

Virginia- 60% of oystercatchers are within the barrier island lagoon system. The islands are the focus with a snapshot survey of all islands. This survey is in conjunction with an annual piping plover survey. In addition to the snapshot survey, a handful of islands are monitored more frequently for productivity. The state is experiencing a yearly and steep increase in breeding pair. The state is hovering around 560 breeding pair during the last 5 years. Based on the productivity monitoring, the state did see a bump and increased to 0.25. While low, this is better than the 0.12 observed in 2022. Overwash did impact oystercatchers in 2023, but storms were not as big of an issue this year. Avian predators were a bigger issue this year on Assateague. Fox and weather are more of a problem at Assawoman. TNC sites experienced a high hatch rate, but chicks disappeared quickly for unknown reasons. Continued this year with ghost crab management- and added 15 Fripp traps at AMOY and PIPL nests. GHOW are becoming a greater issue, and they are considering future management.

New Jersey- The state started experiencing an increase in 2013. This was in part due to an increase in monitoring. In the last 3 or 4 years, they increased the monitoring of marsh breeders. Starting in 2023, they were able to add the Delaware Bay shore. These changes led to an increase in the number of monitored pairs. 199 pairs were reported this year. The highest number was at Holgate, with repeated and steady increases in the local population. Productivity varied amongst sites. Holgate was responsible for the most fledglings in the state. NJ tested 4 different types of non-lethal management this year. Two are highlighted in the presentation. Fladry- bright flagging that hangs low and is constantly moving. This did seem promising to avert coyote. The drawbacks are that animals can become desensitized or jump over. Another technique was the application of a urine perimeter. Urine was added to AMOY and PIPL with mixed results. They succeeded with a new method to capture oystercatcher chicks using a corral.

Coordinated monitoring protocol: Reports from pilot sites, app, and output demos, and discussion of group database – Lindsay Addison, Shiloh Schulte, Zak Poulton

Pam piloted the productivity database, but she is retiring and will be missed!! This was the 2nd pilot year of using the database. Data could be entered with field maps or manually via an associated spreadsheet. They are getting feedback from those testing it out and are starting to develop output. Pilot data collection was expanded this year with the addition of Rhode Island. Anyone interested in participating, reach out to Lindsay. States currently represented include TX, GA, NC, VA, and RI. Zac Poulton will be assisting with troubleshooting/developing app functionality. Using Field Maps or Collector will require

ESRI access. Reach out to Zac if you want to use the ESRI apps. Zac can also modify/customize the app if there are other fields you need to collect in your area. The AMOYWG will send a survey to the WG to understand if partners will be interested in using the protocol. Zac did a walkthrough of the Field Maps App and associated productivity fields using 2023 AMOY data in Virginia. Virginia TNC monitors use old refurbished phones and collect data offline but sync data at the end of the day when they have wifi access. One issue with Field Maps is that it allows users to enter nestIDs with duplicate names.

Results of 2023 winter AMOY survey – Shiloh Schulte

The winter survey occurred this year in 2023. With the original in 2003, it was repeated every 5 years. The coverage in 2023 was from NY to TX. Over 9000 miles and 100 hours over 8 weeks. 22 partner organizations coordinated the surveys. Flights are 400 ft up. Spotting AMOY on beach habitat from this height is doable even with the naked eye. Shell rakes are more complex, and photos are needed to confirm. Sources of error include missing flocks completely or only photographing parts of a flock. This is

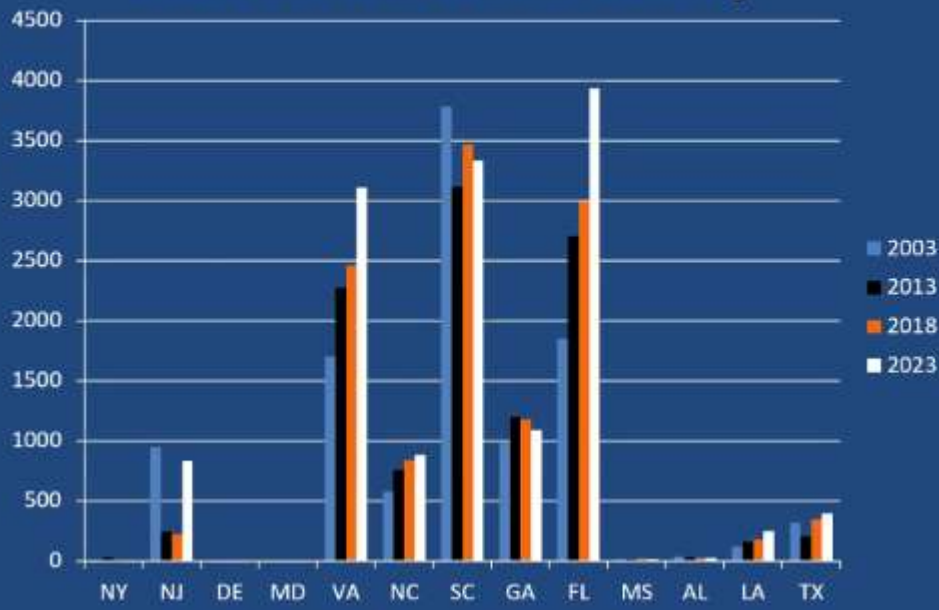
Previous aerial surveys

- 2003 (Atlantic/Gulf)
- 2008 (GA/Florida)
- 2013 (Atlantic/Gulf)
- 2018 (Atlantic/Gulf)
- 2003 was the first comprehensive survey of the US Oystercatcher population
- Coverage from NY to TX
- Survey period Nov to Feb (2003) Jan/Feb (2013 and 2018)
- Paired air/ground surveys
- Benchmark for tracking Oystercatcher population change

why the ground counts are so important; this allows a comparison and the development of a correction factor if needed. Detection rates for large flocks = 0.97 compared to small flocks = 0.83. Shiloh also calculates an estimation error within flocks (real-time vs. photos)—more oystercatchers documented in Florida, particularly in Cedar Key. Shiloh initially thought maybe individuals were being pulled from other locations, but that didn't turn out. There wasn't evidence of widespread movement. This is likely a true population increase. These are very encouraging results. Shiloh is working on publishing this data, and if states need detailed data, to reach out.



2023 AMOY aerial survey



AMOY Population change

45% increase since 2008

- 2003: 10,971 +/- 298
- 2008: 10,150 +/- 385 8% ↓
- 2013: 11,284 +/- 313 11% ↑
- 2018: 12,453 +/- 245 10.3% ↑
- 2023: 14,735 +/- 320 18.5% ↑



AMOY population resilience – Discussion

Tim Keyes- AMOY are moving off barrier islands in GA, possibly in response to coyotes, so this exacerbates the risk when more are nesting on the lowest marshes/rakes. Shiloh- wondered about banded individuals vs population changes. Unfortunately, they didn't have enough of the front beach breeders banded to document the move. Tim doesn't have banded birds to support that hypothesis directly, but Beth (CT) has documented movement to islands from beaches.

Janell Brush- We have had several years of high productivity in Florida but haven't documented substantial recruitment into the breeding population. This is to the extent that we have so many young birds, not breeding, and we have had to work with partners to distinguish between these two groups. Habitat loss has reduced habitat availability for young birds entering the breeding population. Of interest, the winter population conducted that noted an increase in Florida may be capturing the young birds but not necessarily reflecting a concurrent growth in the FL breeding population. The breeding habitat availability may be at capacity.

Shea Fee- One threat I've noted in the areas where I work (Southeast MA) is growing public opposition to the protection of breeding AMOYs in states where they are not listed.

William Thompson- At Cape Hatteras, continued development of the island and higher visitation/recreational use have continued to reduce habitat availability or lessened the habitat's quality on our barrier island beaches. This, coupled with weather changes, has led to AMOY pairs beginning to nest closer to one another in what habitat is best. This has led to more competition in recent years, making it easier for predators to depredate groups of nests more frequently.

Lindsay Addison- On the Cape Fear River in NC, chick banding has occurred since 2010, but very few have recruited into the breeding population (2 or 3).

Caleb Spiegel- Population increases result from extensive (particularly breeding population) management, which will need to continue to maintain populations. Given the many years of increases, is coordinated messaging needed to ensure funders and managers don't shift interest/priorities?

Ezra Thompson- the notable increase of GHOW predation on AMOY adults, chicks, and eggs and how these high-impact predators pose a lot of management and conservation challenges

Emma LeClerc- On LiDAR: it loses some utility when you have to generalize the scale to match the scale of the nest coordinates you're collecting with a handheld unit. Unless you're using a submeter unit connected to RTK, you're usually working with a ~3m spatial accuracy for your nest locations. Lindsay- Emma, yes, I think this was a challenge. It was basically 3m +/- best case. There wasn't a special field effort to go out with RTK.

Robyn: Long Island, NY, had catastrophic loss due to cats. Will, have you had any luck with cat removal? Shea Fee- they are currently trapping Cats on Nantucket as we speak. I've had fair success so far. Lindsay- Where do you take the cats, Shea? Shea- There is an org called Cat Trap Nantucket. They spay them and try to adopt them out. They do not re-release on our property. Lindsay- That is a great resource for Nantucket. It's important to find groups that don't re-release them. William Thompson- Lindsay, yes, we have had luck with feral cat removal in select areas on the Seashore. Generally, cats caught are taken to the SPCA, spayed/neutered, and released. The heightened coyote presence on the island has knocked the feral cat issues down considerably in some areas; this has been noted in village areas where humans have harbored the cats for many years. Changing times for sure.

Banding: best practices and coordination

Every bander uses slightly different approaches to capture, band placement, and sealing. Some of these changes are good, but not all. Shiloh hopes to create a sub-team to develop a collaborative protocol to capture current knowledge.

The protocol would include banding methods and best practices, methods for chick capture, adult capture breeding vs non-breeding, etc.

6-8 hands up in the room and 3 virtual- will need to follow up and get the list of folks

Species at-risk update – Caleb Spiegel

Proactive conservation to avoid listing and coordination of USFWS to influence species conservation

Three species were added in 2021 based on the Atlantic Beach and Shorebird team. These are AMOY, RUTU, and WHIM. The FWS plans to engage with shorebird groups and local initiatives. The program would like to address three threats: habitat, predation, and disturbance. Multiple potential actions will address these. One priority is identifying the importance of marsh habitat for AMOY to prioritize the acquisition, restoration, and management of marsh habitat. Refuge funding is often limited, without biological staff to monitor species like AMOY. The ACJV is focused on salt marsh habitat, and when the Saltmarsh Bird Conservation Plan was developed, there was interest in shorebirds. SHARP- Saltmarsh Habitat and Avian Research Program have datasets that could help us explore the overlap between AMOY and other saltmarsh species. This data could then be analyzed to improve understanding of marsh use by AMOY. They applied for funding with NFWF, but it wasn't a good fit. They have since explored funding through the Delaware Watershed Conservation Fund and were funded for FY24 for a 2-year

project. Deliverables include updating vegetation community layers and identifying the probability of AMOY vs SALS occupancy. One of the planned next steps is to evaluate a survey of FWS employees to understand what is driving priorities at refuges and what might be limiting AMOY surveys and management. The survey was conducted in December 2022 via Survey123, and a report will come soon. The survey can be customized if others have an interest in using it.

Questions/Responses- Shiloh- for the modeling of salt marsh and AMOY, will it be restricted to refuges?
Caleb- no, interested in anywhere the two species overlap and available data

Lindsay- Perhaps some of the fine-scale movement data that has been or will be collected could assist with the mapping. Caleb- It's probably too early for that type of data now, but it could help fine-tune our understanding of marsh use.