

2024 AMOY Working Group Meeting Notes

Day 2: December 4th

Intro to Habitat Restoration/Creation-Tim Keyes

- Creation of a database to document projects – Amanada Hackney

Hurricane Helene: Cedar Key update – Janell Brush

The Nature Coast / Big Bend of Florida has the most extensive remaining stretch of undeveloped coastline in the contiguous US. The region hosts the largest concentration of wintering AMOY in their range and it also has a large concentration of breeding AMOY. Three recent hurricanes impacted this important area for AMOY – Idalia (Category 3, 2023); Debby (Category 1, 2024); Helene (Category 4, 2024). In addition to these storms. Recent hurricanes, nor'easters, and severe storms have also contributed to significant erosion to AMOY nesting and roosting sites along the Nature Coast. Pat and Doris Leary conduct surveys at the largest high-tide roost locations along the Nature Coast – pre-storm these were located around Cedar Key. Post-Idalia they documented some birds shifting back to historical roosting sites near Horseshoe Beach. Conducting band resights and counts has becoming increasingly challenging due to crowdedness (e.g., shorebirds, waterbirds) present at the roosts due to erosion of the few high-tide roosts that remain in the area, and limited options to land the vessel at a location close enough to count birds / read bands but far enough away to avoid disturbing the flocks. Thanks to Pat's efforts we are working with the landowner of Cotton Island, an important roosting site, to acquire the island to manage it to benefit the AMOY. There is a house on the island, but once the house is removed then it may also be a suitable breeding site for AMOY. Some historic roost sites have not been surveyed in recent years and FWC hopes to partner with Pat and Doris in the next year to cover all sites to document habitat use and resight AMOY. McClamory Key has become more important for roosting AMOY post Helene. Corrigan's Reef and the Cedar Point rakes are still one of the most important roosting locations for large numbers of AMOY.

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Eastern panhandle Oystercatcher habitat availability and cumulative hurricane impacts - *Caity Reiland-Smith and Ezra Thompson*

- Discussed the loss of breeding habitat overtime as multiple hurricanes and storms influenced habitat elevation and availability.

- Individual oystercatchers that previously bred in the area continue to maintain territories but haven't bred. This is concerning and indicates that restoration actions are necessary to maintain the breeding population.

Restoration prioritization and planning - Alex Wilke

- Oyster rakes getting pushed back/taken over by marsh habitat
- Move from nesting in oyster shell to storm wrackline
- Availability of roosting habitat is critical in addition to breeding birds
- Highest rates of SLR in this area
- Planning:
 - Identifies potential habitat restoration and management actions in coastal marshes to reduce the impacts of SLR on AMOY nesting success and increase resilience of nesting/roosting habitat
 - Evaluate challenges and opportunities (cost
- Evaluated 6 different potential management actions
 - Floating platforms
 - Island creation
 - Oyster reef restoration
 - Shell Rake restoration
 - Shell rake augmentation with platforms
 - Thin layer deposition
- Variables
 - Site
 - County
 - Ownership status
 - Number of breeding AMOY pairs
 - Other breeding shorebirds/seabirds
 - AMOY non-breeding roost info
 - Isolation from predators
 - Shoreline orientation
 - etc
- Initial concept designs by Dewberry engineering firm (Low energy vs high energy)
- Next steps and recommendations:
 - Develop interactive spatial component
 - Incorporate partner feedback
 - Establish process with VMRC (already building oyster reefs to add more shells to the system to be available for shell rakes) to incorporate shorebird priorities into shell plant plans
 - Funding for full-scale shell rake restoration
 - Test artificial platform
 - Maximize limited potential for use of dredge material
- Test the use of artificial nesting platforms to minimize nest flooding by raising elevation
 - Artificial substrate-sandbar

- Cost-effective near-term strategy
- Not new strategy (but substrate in tires), Sandbar Oyster Company
- Deploy 30 small platforms (jute) raising the elevation about a foot
- Evaluate tolerance to nest-level management
- Measure nesting success relative to elevation
 - Relocate nests?
 - Deploy platforms first?
 - Combination of these? Done gradually like moving AMOY nests up the beach?

USACE Beneficial Use of Dredge Material – Laurel Reichold

- South Atlantic Division (SAD) includes both sides of Florida
- Deep water ports dredged frequently
- Shallow water ports dredged less frequently
- 40 million cubic yard to 70 million cy per year
- Average about 30% per year, 70% beneficial use is lofty goal
- USACE maintains federal navigation waterways for commercial, recreational, and DoD and search and rescue vessels
- Beneficial use (BU) is considered for 20 years into the future
- A Federal Standard (least costly alternative) is identified
- Cost Drivers – ways to keep costs down
- 200 thousand cubic yards or more in order to have dredge equipment used
- Within 5 miles of dredging location
- No permanent confinement (rocks are huge expense)
- 3-4 years pre-project: input identifying site locations (where is optimal habitat?) what habitat needs to be restored, sediment types?
- 1-2 years pre-project" what are the target elevations? How do we want it to perform over time?
- Beneficial Use – regulatory process
 - FWS and other organizations
 - Alternatives Analysis
 - “Bird Islands”
 - Distance to mainland
 - Predation
 - Design considerations (loss of 30% expected)
 - Sediment type and suitability composition and compatibility
 - Elevation and slope: target elevations, slope design (>30 degrees bad for nesting)
 - Island shape and orientation: alignment with hydrodynamics, rounded/oval(back-barrier hammocks), buffer zones
 - Placement and stacking: controlled pumping velocity, pipe movement, heavy equipment (shaping)
 - Habitat considerations: shorebird nesting preferences, foraging zones

- Erosion and overwash protection: wave energy mitigation, Accretion processes
 - Regulatory compliance: protected species, habitats of concern
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- Examples, BU Type: Bird Island, but sand and more silt substrate turned into more of a mudflat habitat due to high energy.

Beneficial Use of Dredge Material for Habitat Restoration on the Atlantic Flyway: Part II – Mike Molnar

- Manomet Conservation Sciences
- SLR: 11 inches since 1928
- High volumes of sand can be reshaped significantly and quickly by storms
- Shorebird Habitat Needs
 - Intertidal
 - Supratidal
 - Saltmarshes
- BUDM work
 - Knowledge
 - Planning
 - Implementation
- AMOY WG Project Database
 - Case study elements
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- State sediment regulations – different types in different parts of a state
- Having the pre-planning for dredge project completed so when dredging comes up the legwork is already in place
- Resilience Urgency (low medium high)
- Ecosystem Goods and Services Urgency (low medium high)
- Ecosystem Goods and Services Benefit (low medium high)
- Community benefit (low medium high)
- Navigation Benefit (low medium high) *really important
- Wildlife Habitat (low medium high)
 - Low represents areas that are supporting fewer biodiversity, lower carrying capacity, areas with 1-2 data layers of importance, and/or expert ranking
 - Medium represents areas that are supporting average biodiversity, averaged rankings, areas with 3-4 data layers of importance, and/or expert ranking
 - High represents areas that have greater diversity, high functionality, greater habitat types, higher regional and global rankings, areas with greatest habitat enhancement value, areas with >4 data layers of importance, and/or expert ranking
- Examples give in NC
- Project workshop opportunities (NC, SC, GA)
- State Planning Teams USACE
- More information sharing

- 5-year Regional Dredge Material Management Plans (DMMPS)
 - Retaubs Federal Standard (FS)

Coastal Bird Projects – Tim Keyes

- Shell Rake Project
 - Project goals: elevate nesting rakes to reduce risk of overwash
 - Landscape type
 - Habitat features
 - Enhanced 5 shell rakes
 - Contracts – marine construction: 45,000
 - Shell: 19000
 - Equipment: 2500
 - Architectural drawings: 4000
 - Total: 70,500 (excluding Tim’s time)
 - Permitting:
 - coastal marshland protection act permit
 - nationwide 18 (Minor Discharges) army corps permit (was difficult figuring out where to classify, future similar projects should be easier)
 - Outcome
 - Monitored 5 platforms
 - 4 out of 5 platforms were used by AMOY
 - 1 platform birds nested adjacent to it and lost to overwash
 - 5-6 foot elevation goal
 - Wooden frame with timbers (duckbill anchors 6 feet into marsh) ~20’x20’
 - More exposed sites used a geoshell fabric (e.g., road at SGI state park) didn’t recommend for this application, didn’t really work
 - While constructing these areas, AMOY flying around wanting to use habitat
 - Last site finished in March
 - AMOY immediately set up and nested.
 - Vegetation after 1 season, needs yearly maintenance (remove veg and add more shell)
 - Using something that doesn’t want to float might be smarter (issues with anchoring depending on how soft the substrate was)
- Minimize heavy equipment on marsh island rakes
- Soil liquefaction and subsequent damage and equipment getting stuck, heavy marsh mats required (plywood didn’t work)
- Offload shell with conveyor – price aerial deployment
- Duck-billed anchor success highly variable based on density of soil/mud at site. Some held very well – others failed
- Criss crossed long bars may hold better
- Geotextile fabric doesn’t help significantly –and becomes exposed – risk to small chicks
- Try support structure that won’t float (Flexamat concrete fabric)

- Would take different permits, put in for another geoS permit this winter, only a few inches tall, less for elevation but good for stability. Put shell down, then drape with Flexamat.
- Examples
 - Cumberland Dividings Bird Island
 - Sand island with marsh system
 - Protected location
 - Area of natural deposition
 - <5 miles from sediment source
 - 1 mile from nesting AMOY
 - Local LETE colonies (rooftop nesting opportunities lost)

The Restoration of Crab Bank 2024 Update – Janet Thibault

- Scope and Capacity was Huge because of the once-in-a-lifetime opportunity of deepening the Charleston Harbor
- Habitat created is closed to public
- The creation – was put on top of an original shoal
- Worked day and night over 7 weeks (660,000 cubic yards of material)
- Drone imagery collected with elevation every month for the first year after creation
- Created some kinds of mounds to have some topography
- Tropical storm Idalia did inundate the island, ~9 ft (3 feet added to high tide)
- What birds nested?
 - AMOY:
 - 2022: 8 pair and 3 fledges
 - 2023: 14 pair and 1 fledge
 - 2024: 17 pair and 8 fledges (long nesting season, lots of the fledging success was late on in the season. GHOW predation early in the season (adult AMOY head
 - BLSK
 - 2022: 283 nests and 174 fledges
 - 2023: 528 nests and 579
 - 2024: 397 nests and started banding chicks
 - LETE
 - 2022: 107 nests and >50 fledglings
 - 2023: 212 nests and 0 fledges
 - 2024: Attempted to nest, but crows were an issue, 0 nests
 - GBTE
 - 2022: 192 nests and 75 fledglings
 - 2023: 152 nests and 15 fledglings
 - 2024: 92 nests
 - LAGU:
 - 2024: 316 nests – first year LAGU have nested here
- After being scoured with saltwater, less vegetation

- Clay-based substrate holds rainwater, where vegetation started to grow (sea purslane)
- Vegetation expanded in subsequent year
- Flora inventory each year by state biologist.
- Leptochloa sp. Native grass
- Lambs quarters (October – late in season)
- Seashore Dropseed (native)
- Saltbush (growing on wrackline, more woody (also dog fennel)
- Crowfoot grass (non-native) keep an eye on (similar issue with managing this on Tompkin Island (burn, disc, etc)
- Not a big issue with Phragmites (been able to dig up completely and has not established).
- 60x60 grid of management areas (in feet?)

Vegetation management at a beneficial placement site in New Jersey – Sam Collins

- Ring Island – renourished march 2018
- Veg management options
 - Herbicide
 - Burning
 - Manual removal
 - Grazing
 - Salt or saltwater
- Used concentrated salt solution 10% concentration
- Vegetation metrics collected – species ID, etc
- 2019 prescribed burn
- Control and salt solution treatment plots (1m squared)
- Salt spray successfully reduced vegetated growth and reduced species richness
- 2021-2023 – no burns
- Manual removal in 2 larger 160m square plots to create a large enough area for birds to nest on
- Repeated salt spray (5 times through
- No treatment in 2023
- Results:
 - Treatment 1 with salt had more vegetation early in the season but less cover late in the season
 - Treatment 2 hand removal
 - control
- No difference between treatment areas
- Differences between control and treatment 1 and control and treatment 2
- Trailing fuzzy bean
- Cover vs. Community of species
- Vegetation Management summary
 - Control burn removed vegetation initially but promoted growth
 - 10% salt worked (24 gallons for 160 sq. Meters.
 - Use of backpack sprayers to apply salt solution can be time-intensive

- Time to prep
- 2-3 people spraying took approximately 1 hour (range: 40-1 hour 15 min)

Tracking Restoration Projects: Introduction to the Habitat Database - Amanda Hackney

- The Habitat Restoration Database
 - Restoration and creation project database with accompanying ArcExperience page
- Funded by GA DNR
- Input from range wide habitat committee
- Obtain relevant datasets (survey123) tied to a project area
 - Multiple emails/interviews with AMOY WG members
- Walk-through of Survey 123 data form

Bird Banding Lab: Myths, misconceptions, dos, don'ts & recent changes - Jennifer McKay and Lauren Walker

- Bander Portal
 - Create a username and password (case sensitive)
 - Be associated with a permit (master, sub-permittee, data organizer)
 - Landing Page with quick-link to areas (e.g., trainings)
- MTAB version 10.1.NEW! New and improved since Summer 2022
- Permits
 - What do you need to get it
 - Banding CV
 - Experience
 - References
 - Scientific purpose/question answered through banding techniques
 - Different/Unique Study
 - What do you need to keep it
 - Report ALL banding records
 - Keep on top of renewals & modifications
 - Match authorizations to field practices
- What do we want? Data! When do we want it? Now!
- We now have the capacity for recapture data
 - Bandings
 - Recaptures
 - Encounters
 - Yours
 - Submitted to you by the public
 - **Auxiliary marker changes** – very important because our database works based on tying each resight back to the original service band number
- Benefits of prompt data submission
 - Reduced work time
 - Fewer emails
 - Prompt notification of resighting

- Tips
 - Submit throughout or immediately after field season
 - Report all marker changes
 - Ask for help
- Template only holds 3000 records
- BBL Definition Recapture
 - Provided by permitted banders
 - Contains Age/Sex/Etc. Fields
 - Does not have to be “in hand”
 - No longer a need to differentiate between yours or a foreign band
- BBL definition encounter *avoid using in favor of above recapture – uses email to show what has been previously reported
 - Provided by General Public
 - Limited Information
 - Offers Certificate of Appreciation
- What is a Foreign Recapture?
 - Not your band or.. *this is an obsolete term for this
 - From a foreign country *now designates this
- Do not change bands on a “foreign” recapture
 - Might affect the outcome of another study’s bird
 - Might remove a bird from another study’s dataset
 - Complicates the birds banding history
 - Complicates future reporting
 - Obtaining original banding data might be complicated or impossible
 - Its not your bird...plain and simple
- When is it OK to change bands/markers?
 - Unreadable bands/markers
 - Inappropriate placement overlap band
 - Injury
 - Taking over a project that is no longer active
- You get data
 - Submit data to local working groups
 - Obligations to partners
 - Differing goals and objectives
 - Submit data to bandedbirds.org
 - Obligation to fellow shorebird banders
 - Differing goals and objectives
 - Submit Data to NABBP
- Permit obligation
- 100+year dataset contribution
- Scientific uses of larger datasets
- Partnerships – small scale
- Partnerships – large scale

- Q: if there is a bird with only a metal band can i add an auxiliary marker? A: **No**, but if you recognize the prefix and are familiar with this, it may be OK to add an auxiliary marker if none are present.

Banded AMOY in North Carolina - Kristen Johnson

- Dispersal – how species adapt and chance, fragmented habitat, how using habitat, population stability
- What drives natal dispersal?
- 1358 banded chicks through 2022, 784 survive to TY, 310 confirmed breeding, 140 successfully fledged chicks
- Females disperse further
- Barrier island birds more likely to stay at natal site

Update on banding/capture guidance (5 min) - Shiloh Schulte

- Best Practices for Banding
- More prevalent use of GPS satellite tagging on AMOY
- Documenting collective knowledge for trapping, banding, etc
- www.tinytag.info temperature logger helps refine hatch date (draft manuscript) very waterproof. Tag not causing failure, repeated visitation correlated with failure.
- 98% accuracy at determining nest fate (hatch vs. Fail)
- \$200 each, but can recharge. 30-40 days if record temp every 2 minutes

AMOY Band Database – Lindsay Addison

- 2024:
 - Banded 7353 individuals
 - Resighted 120415 records
 - Public records 42190 records
- Resights at site with intensive breeding season monitoring (4 records – confirmed breeding with each nest and then last one unconfirmed breeding etc)
- Sites and locations polygons
- BBL and international records
- Adventures in Ebird
- Productivity Database Updates, was working with FWS but they have pulled back, need to look for funding source, good thing is the legwork is fairly well completed
- Tim Keye’s comment: if funding is available next year, hope to combine resight database and productivity database etc.

Phenological Trends of Two Sympatric Shorebird Species in Virginia, U.S.A. - *Trevor MacLaurin*

- Masters student at Trent University
- Thesis research: Migratory propensity and winter movement ecology and home range size
- Chincoteague NWR

- Could there be phenological shifts in AMOY?
- Phenological advancement: range-limits/flowering/migration...have been shifting northward
- Shorebird migration shifted 1-11 days forward in the literature
- Data cleaning:
 - Estimate clutch initiation date (CID)
 - Restricted analyses to only include initial nest attempts
 - Wasn't able to subset the earlier PIPL data
- AMOY
 - 2005-2019, 2021-2022 (17 years of data)
- PIPL
 - 23 years of data
- Environmental cues
 - NASA and NOAA
 - Windspeed
 - Minimum temp
- Analysis
 - Series of linear models over time
 -
- Results:
 - AMOY 6.3 days per decade
 - Only minimum temp was strongly associated with clutch initiation ~1.2 days earlier per 1 degree C
 - PIPL 1.1 days per decade
 - Again only min. Temp was strongly associated with clutch initiation ~0.85 days earlier per 1 degree C
- Why, and so what?
 - Differing cues to initiation initial clutches
 - Differences in interspecific phenotypic plasticity
 - Phenological mismatch
 - Timing of clutch initiation with respect to Storms
 - Photo of AMOY nesting in a small, moored boat (inside a life ring/coiled line)

Diet specialization in American Oystercatchers - Lyn Brown

- Diet specialization consequences on breeding success
 - Generalist
 - only on Assawoman
 - Close access to abundant Atlantic ribbed mussels
 - Mole crab specialist
 - only seen on Assateague
 - Lack of close access to Atlantic ribbed mussels
 - Parental behavior of staying close to chicks while foraging instead of traveling further like a generalist
 - 2x probability compared to a generalist (2022-2023)

- 0.25 higher compared to a generalist (2023-2024) because of no overwash and low predation (1 wave of fox predation 17% predation)
- Publication available on diet overlap between the sexes (new publication)
- Egg stripping mole crabs by oystercatchers and Whimbrel (new publication)
 - Egg stripping occurred on larger mole crabs which makes sense as only larger mole crabs (>10mm long) have eggs
- Feeding commensalism
 - RUTU eat discarded carapace remains
- Visually sexing oystercatchers
 - Longer bills vs. Chisel bills
 - Did not find a difference in bill shape from specialist to generalist.
 - Photos with scale for:
 - Bill length (females longer)
 - Bill color (males more red, females more yellow)
 - Mantle color (females larger, brown mantel)
- Relocating a recreational beach parking lot on nesting and migratory shorebirds
 - Assateague Island, VA
 - High human disturbance
 - 18M to move parking lot 2.5km north (further from shorebird habitat)
 - Great opportunity to do a before/after study on the affect of human disturbance on shorebirds
 - Restore 6km of nesting and foraging habitat
- Study Area
 - Assawoman and Assateague
- Study Period: 2016-2021

Urban AMOY: conservation insights from Birds under intense human pressures – Emilio Tobon

- NYC Bird Alliance protects wild birds and habitat, improving the city for all New Yorkers
 - Conservation
 - Engagement
 - Advocacy
- Over 88 nesting pairs (> 50% of state population) in NYC (largest city in the US leads to intense human pressures)
- Threats come from a changing climate and high density of people
 - Climate induced storm surge
 - Human induced predation
 - Poaching (human removal of eggs)
- How is the largest population in the state responding to pressures?
- Hypothesis:
 - Productivity is declining due to low hatching success
 - Yes, Productivity decline is due to nest failure (yes, highly correlated)
 - Breeding season is getting longer with nests continuing later in the year
 - Yes, data shows the breeding season is getting longer

- Beaches with high human activity has lowest productivity
 - Each site is different with some surprising results:
 - More breeding pairs nest further away from human access
 - Fewer breeding pairs nest at locations with easier access to humans, but have higher productivity (Riis Park – the most human populated site has highest productivity ~1500 people at once)
 - Maybe predators don't have to look for predators
 - Maybe beach cleaning erases evidence predators use to find nest
- Phenotypic plasticity helps AMOY persist despite multiple intense pressures
 - Proposed mechanism:
 - Human activities reduce productivity
 - AMOY compensate by repeat nest attempts
 - Extend the duration of the breeding season
 - Offspring Fledge
 - Enough to offset losses?
- Urban areas can provide a model due to compounded threats/extreme pressures
 - Urban areas are important
 - AMOY habituate/tolerate unexpected conditions
- Don't disregard human protection efforts