

Tracking Migrating Roseate Terns: Using Partners to Find a Needle in a Haystack



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Outline



- Roseate tern background
- Project Objectives
- Partners
- Implementation Phase 1
- Challenges
- Phase 2
- Advice?



P. Paton Photo

Roseate Tern Background



Two subpopulations listed under the ESA in 1987

- *Endangered* Northeast population
- *Threatened* Caribbean population

Recovery lead for Northeast subpopulation

Populations overlap during migration and on wintering grounds



North Atlantic Population



Northeastern subpopulation intensively managed by state, federal and NGO entities

- Management focused on breeding colonies and staging areas



Limited efforts to monitor resident or migrating terns in Caribbean

- Logistic challenges
- Greater T/E workload

Recovery - Northeast



- Recovery goal: 5000 pairs, 6+ sites with 200+ pairs
- Currently: ~ 4000 pairs, 3 sites with 200+ pairs,
- Threats on summer range identified and addressed and/or researched
- Some threats during migration and wintering have been identified, *large knowledge gaps remain*

Northeast Population – Migration



BOEM delineated off-shore wind lease areas could overlap with migratory pathways

Wind energy increasing in PR

Northeast population stops on Caribbean islands, including Puerto Rico, and mixes with Caribbean birds

- Stopover duration unknown
- Importance of stopover areas unknown
- Consistency of stopover areas unknown

Need conservation strategy for migration to increase juvenile (and adult survival)



Image via Shutterstock

Project Evolution



Proposal

USFWS ES + MB (2 PIs)

Erect 4 towers on PR

Tag up to 30 terns in MA

Id migratory and stopover movements

Funding

USFWS State of the Birds Grant

FWS ES funds transferred to MB

Cooperative agreement with URI for logistics, equipment, installation and tagging

Partners

Continental

Puerto Rico

Part of existing roseate workgroup – or recommended by existing partners

Project Objectives



Roseate Tern Recovery Based

- Expand tracking of northeastern roseate tern into migration
- Partner with PR biologists and birders to identify areas critical for migration



Migratory Bird Based

- Build infrastructure and capacity for other tracking studies in Caribbean, with USFWS, NGOs, academics
- Expand Motus network (www.motus.org)

Key concepts:

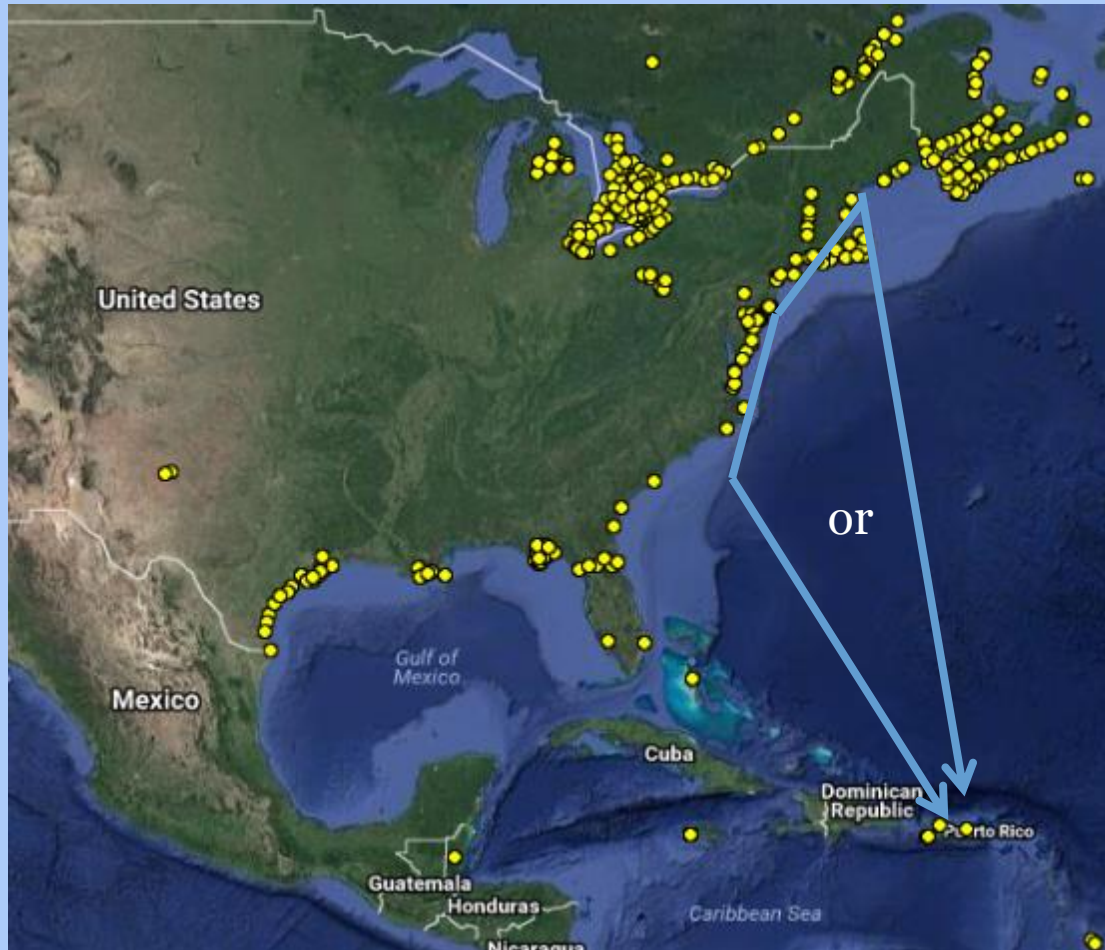
- Coordinated network of receiving stations & tagging projects
- Facilitates landscape scale studies
- Centralized database
- Open source technology
- Data online - outreach
- www.motus-wts.org

2016

- > 150 collaborators
- > 3,000 animals tagged
- > 300 stations



Projected Flight Movement – Motus towers to track movement



Tag ROST (n=30) at
two colonies late in
the breeding season

Detection if passing
towers during
migration or stopping
in PR

Hoped for Outcomes



Attention on roseate tern recovery in Caribbean



Participate in MOTUS network



Document banded roseate terns



Info on migratory routes and critical stopover areas of roseate tern



Track other rare PR species using nanotag technology



Partners in PR



Partner	Role
USFWS Caribbean Field Office	Regulatory, logistics, equipment
Cabo Rojo National Wildlife Refuge	Landowner, tower installation assistance and maintenance, data downloading
Culebra National Wildlife Refuge	Landowner, tower installation assistance and maintenance, data downloading
Universidad de Puerto Rico	Landowner, tower installation assistance and maintenance, data downloading
Para La Naturaleza – La Hacienda de Esperanza	Landowner, tower installation assistance and maintenance, data downloading
Sociedad Ornitológica Puertorriqueña, Inc. (SOPI)	Roseate tern resighting and reporting



Continental Partners



Partner	Role
USFWS Programs – Region 5: Endangered Species Migratory Birds	Project design and implementation, budget management, contractor oversight, regulatory (permitting, consultation, MOUs), logistics, tower installation, nanotagging, data collection and analysis, report
University of RI – Cooperative Grant	Logistics, equipment acquisition, nanotagging
MA Natural Heritage & Endangered Species Program (Phase 2)	Permitting, nanotagging, breeding colony landowner
Canadian Wildlife Service (both phases)	Tower installation, tern resighting coordination, nanotagging
American Museum of Natural History (Phase 2)	nanotagging, breeding colony landowner

Project – Phase 1, Puerto Rico



Logistics – URI, MB and ES worked together to:

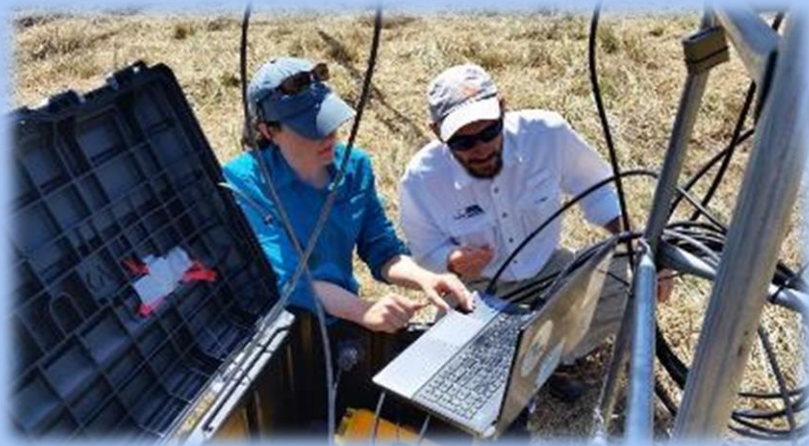
- Plan travel
- Identify tower sites
- Identify and contact landowners
- Coordinate with USFWS Caribbean Field Office staff
- Order equipment



Objectives



- Install 4 towers on Puerto Rico
- Train personnel to maintain towers and download data
- Outreach to PR scientists about new technology



Implementation



Implementation – URI and MB leads for tower installation

Challenges

- Equipment - held up in customs, missing from order, wasn't right
- Tight schedule and travel
- Incomplete paperwork
- Language
- Unclear roles - defined at last minute
- Communication



Partners provided creative assistance!

Accomplishments



- Despite challenges, all 4 towers erected in the time allotted
- Towers operational
- Developed close relations with PR partners
- Presentation to public and island birding society



Lessons learned and still learning...



Language does not
have to be a barrier



Who's in charge?



How to back up a HUGE truck
onto a little ferry



Course skills used?
Hmmm...

Partner Engagement and Communication



Inform



Consult



Involve



Collaborate



Empower



Project Planning focused on **Identifying** and **Informing** partners

More **Consulting** and **Involvement** might have helped anticipate challenges

Cooperation and **Collaboration** were essential to problem solve in the field

Partners were **Empowered** to take advantage of new technology to use for own conservation objectives

Competencies I should have focused on:



Accountability -

- Who is accountable? Divided responsibilities?
- Who maintains PR partnerships? One POC or two?



Collaborative leadership –

- Need to recognize different Program's approach to implementing Project.
- MB considers project a part of a greater effort (for MOTUS), ES considers project stand alone for roseates.
- Both programs' want to accomplish objectives, meet in the middle?

Phase 2: Project



Tagging post-breeding terns

- Capture late nesting roseate terns to apply tags on breeding colonies.
- Develop individual field readable markers to help in resighting in PR
- Reach out to volunteers, other researchers to resight on staging grounds
- Outreach to PR partners with band and tag information, follow up to encourage resighting



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Challenges



- Has not been done with late-breeding birds
- PI roles and responsibilities being identified
- Breeding colonies on islands → access weather dependent, need flexibility
- Will nanotag batteries last through migration?
- Can we individually mark birds for resighting in PR?



Players



MADFW – field
assistance,
authorization,
permitting

Am. Museum of
Natural History -
field assistance,
authorization,

Refuges, NPS,
researchers,
volunteers –
resighting on
staging areas

Taking it to the next level



Role as national lead for species recovery:

- Take the time to maintain the existing partnerships
- Identify recovery priorities, potential partners, develop strategic working groups
- Identify others to lead collaboratively
- Facilitate information exchange between partners
- Seek funds to continue recovery activities

Your Ideas?



What opportunities
or challenges do
you foresee?

How to keep
recovery
momentum going in
Caribbean?

Thank you! And Thanks to my Partners

