

Delaware National Estuarine Research Reserve

**Marsh Bird Monitoring along the
St. Jones River**



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Delaware Coastal Programs**

Delaware National Estuarine Research Reserve (DNERR)

- One of 28 National Estuarine Research Reserves in the US
- Established in 1993
- Comprised of two main components
 - Blackbird Creek Reserve
 - St. Jones Reserve



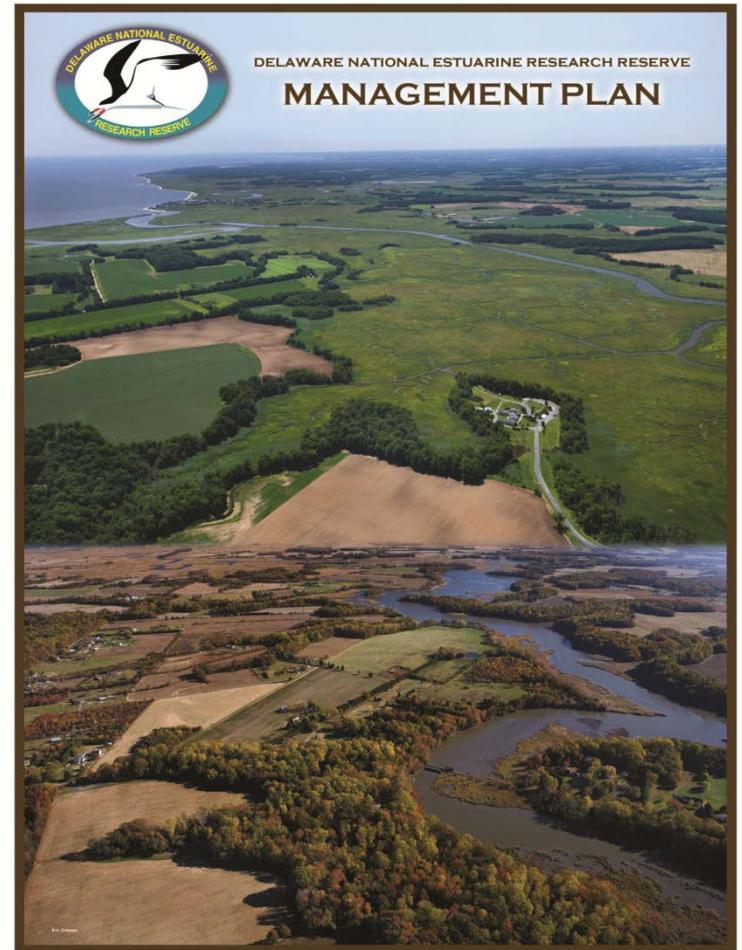
Why monitor marsh birds?

- Declining wetland habitat
- “Indicator species” for assessing wetland ecosystem quality
- Vulnerable to invasive species
- Sensitive to habitat change



Why monitor marsh birds?

- **Fulfills management plan objective**
- **Biotic component of the NERR System Wide Monitoring Program**
- **Sentinel site for climate change**



NERRS Implementing Marsh Bird Programs



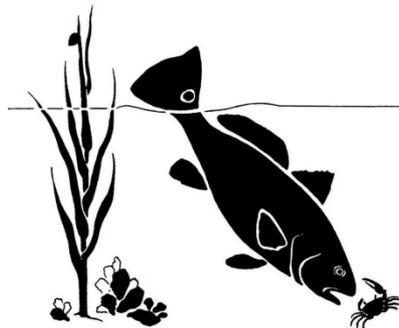
Grand Bay
National Estuarine
Research Reserve



Chesapeake Bay
NERR



South Slough
NERR



North Inlet - Winyah Bay
National Estuarine
Research Reserve

Sapelo Island
NATIONAL ESTUARINE
RESEARCH RESERVE

DNERR Marsh Bird Monitoring

- Monitor population status and breeding distribution
- Examine species habitat associations
 - Factors that influence distribution
- Create a successful citizen science program



Protocols

2012: Established Surveys

ARIZONA COOPERATIVE FISH AND WILDLIFE RESEARCH UNIT May 2009

STANDARDIZED NORTH AMERICAN MARSH BIRD MONITORING PROTOCOLS



by Courtney J. Conway

Wildlife Research Report #2009-02



2012: NERRS Guidance

North American Marsh Bird Monitoring

Technical Report No. 2010-001

*Ecosystem Science Program, Guana Tolomato Matanzas National Estuarine
Research Reserve*

Ponte Vedra Beach, FL

Andrew Thornton

Matt Love

August x, 2010

Database

Marsh Birds

Population Assessment & Monitoring Project 



The official repository for Marshbird surveys on National Wildlife Refuges conducted using the National Marshbird Protocol.



➔ [About this database](#)

➔ [Official Site for the National Marsh Bird Protocol](#)

➔ [Registration](#): How to register and begin using this site

➔ [Contact Us](#): If you still have questions.

 public access to data will be provided once review processes have been completed

Participant sign-in

For coordinators & observers

[LOGIN page](#)

[Register](#) | [Forgot password](#)

More Marshbird

- [N.A. Marsh Bird Monitoring](#)
- background info
- [Google Scholar](#)
search for sci. pubs.
- [Marsh Monitoring Program](#)
- Focused on the Great Lakes Basin
- [All About Birds](#)
- online field guide
- [Bird ID Infocenter](#)
- more ID info
- [Birds of North America](#)
(may require login)

These links will take you to another site.

Based on the



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Protocols

2013: Contacted by Dr. Greg Shriver (University of Delaware)



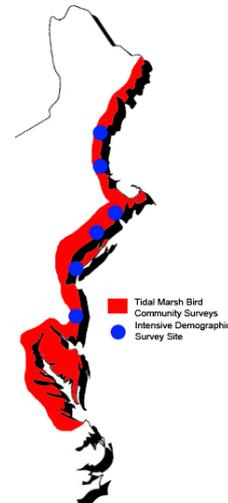
Program Description

Currently taking applications for students and post-doctoral scientists!

The Saltmarsh Habitat & Avian Research Program (SHARP) was founded by a [group of academic, governmental, and non-profit collaborators](#) to provide critical information for the conservation of tidal-marsh birds.

OUR GOAL in the short term is to provide information for all the New England and Mid-Atlantic states (see figure to the right, or see the high resolution spatial data for our [survey locations](#) or [demographic study sites](#)) to protect areas that are important for the long-term conservation of tidal marsh birds. Over the next several years our program will provide a consistent platform for monitoring the health of North America's tidal-marsh bird community in the face of anticipated sea-level rise and upland/watershed development.

THE SPECIFIC OBJECTIVES of the initiative are to: 1) Produce population estimates for tidal marsh birds, 2) Provide estimates of population change in these species over the past two decades, 3) Model geographic variation in the reproduction and survival of our six focal species (listed below), 4) Provide the ten states in the region with a detailed description of their responsibility for conservation, 5) Identify the most critical areas for the long-term preservation of the tidal marsh bird community, 6) Explore tidal marsh community resistance to extreme storm events and other climate change stressors, and 7) Build on an existing working group of local, state, and NGO stakeholders to implement the findings of this project throughout the region.



Contribute

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Pages

- [Collaborators & Contacts](#)
- [Data-Sharing Portal](#)
- [Field Methods](#)
- [Links](#)
- [Program Description](#)
- [Public Downloads](#)

News

SHARP presentations at CT "avian summit"
December 23rd, 2013

UDaily highlights SHARP Hurricane Sandy Project
December 5th, 2013

UMaine to hire 2 SHARP graduate students for 2014
November 13th, 2013

Alison Kocak presents at Waterbird Society meeting in Germany
November 7th, 2013

Mo Correll's work on Hurricane Sandy highlighted on UMaine webpage
September 26th, 2013

[More...](#)

Primary Species

- Clapper rail (*Rallus longirostris*)
- Black rail (*Laterallus jamaicensis*)
- Yellow rail (*Coturnicops noveboracensis*)
- American coot (*Fulica americana*)
- American bittern (*Botaurus lentiginosus*)
- Least bittern (*Ixobrychus exilis*)
- Pied-billed grebe (*Podilymbus podiceps*)
- Common moorhen (*Gallinula galeata*)
- Purple gallinule (*Porphyrio martinicus*)
- King rail (*Rallus elegans*)
- Virginia rail (*Rallus limicola*)
- Sora (*Porzana carolina*)
- Limpkin (*Aramus guarauna*)



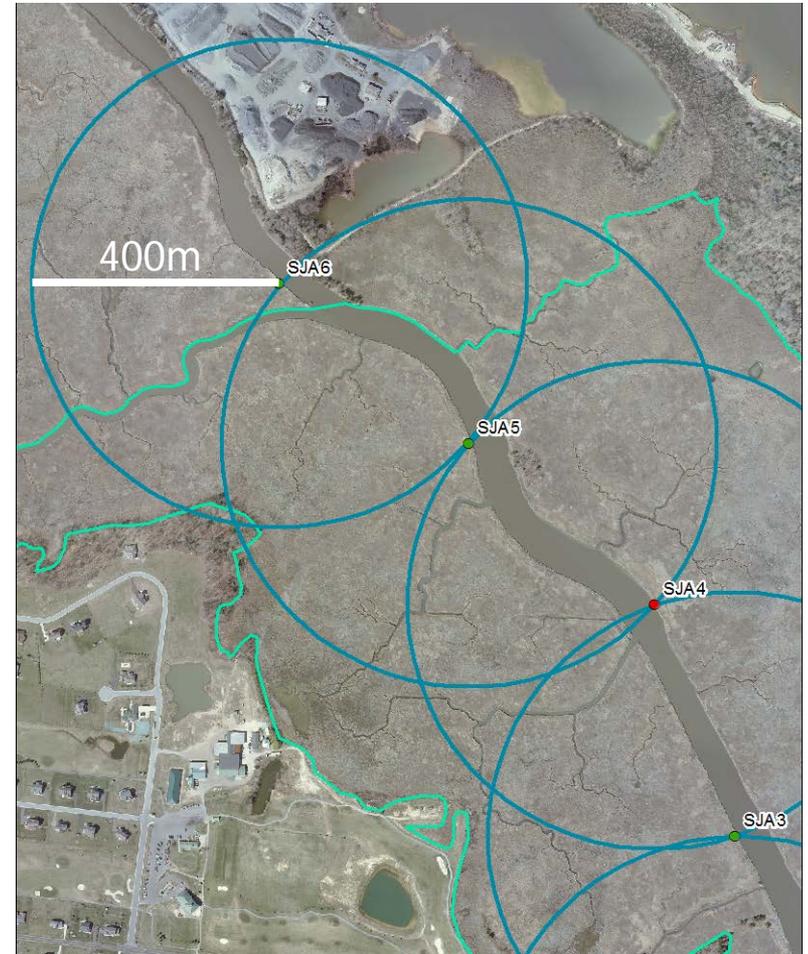
Secondary Species

- All other species directly using the marsh habitat



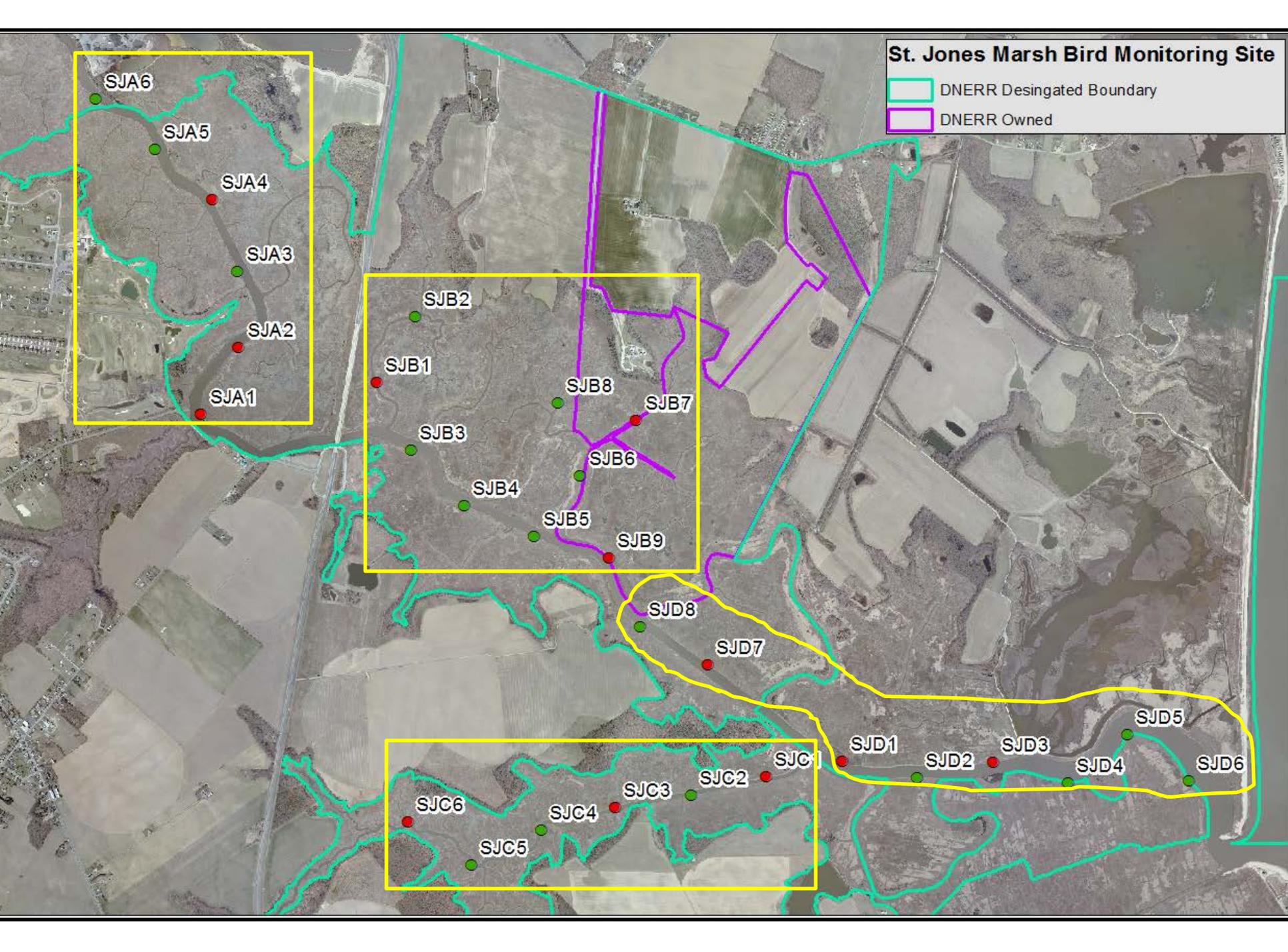
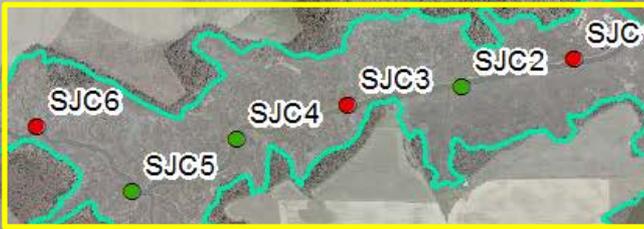
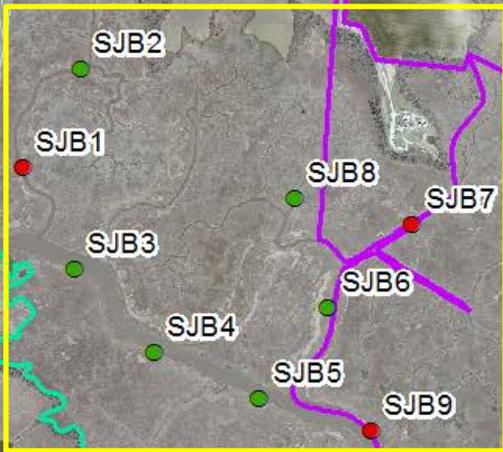
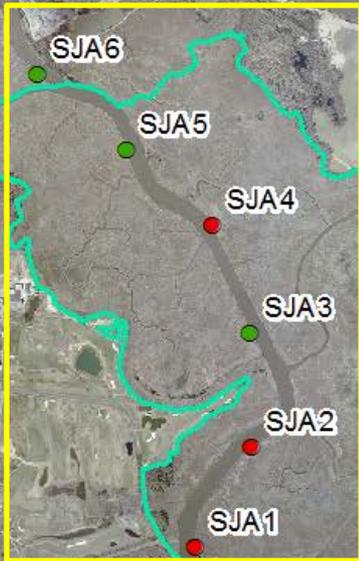
Choosing Field Sites

- 400m radius between points
- Random number generator used to determine point placement
- Total of 29 points
 - All points along marsh edge

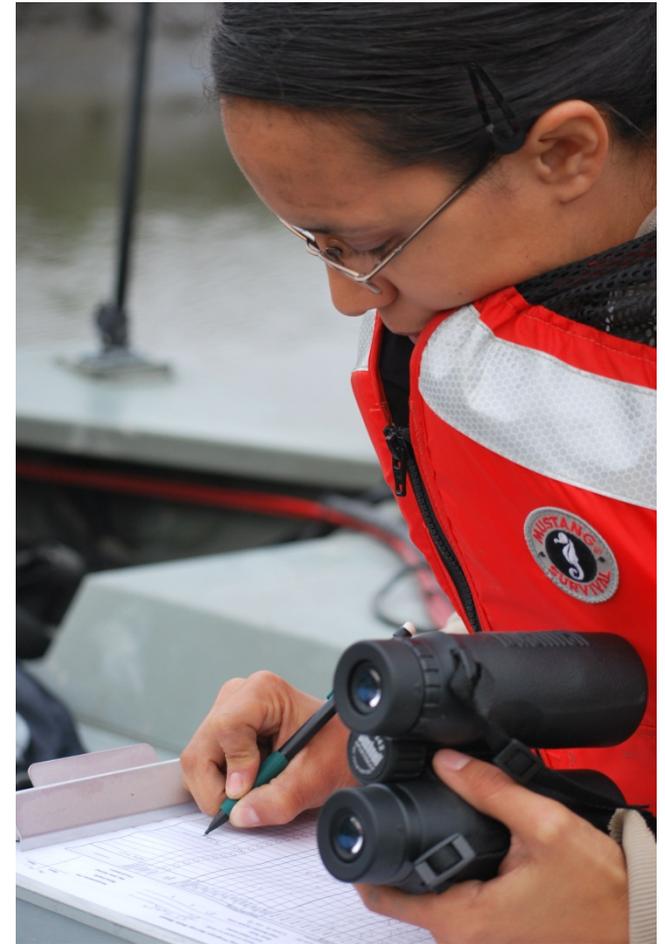


St. Jones Marsh Bird Monitoring Site

- DNERR Designated Boundary
- DNERR Owned



Equipment





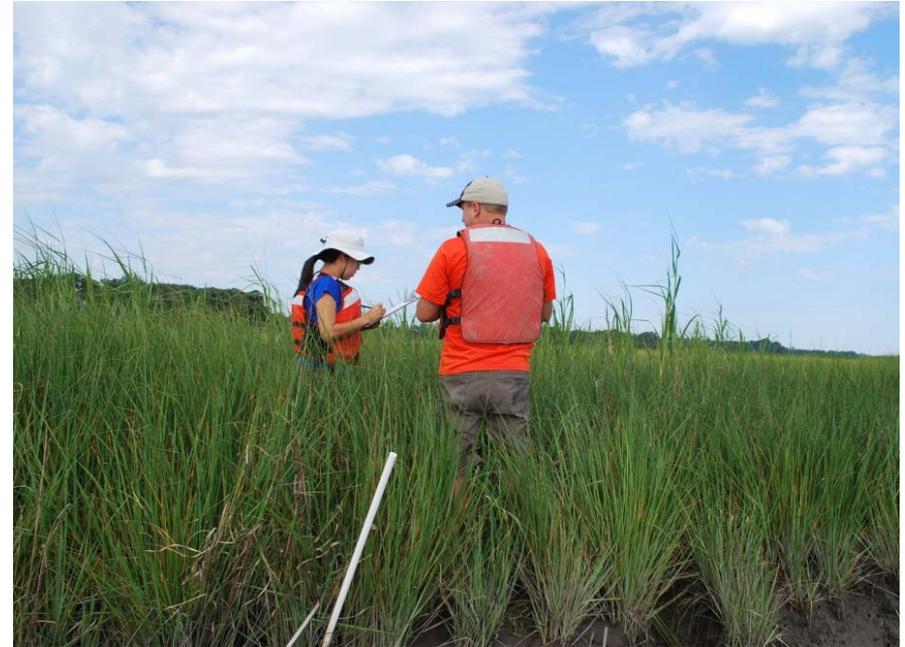
Sampling Schedule

- Divided into four routes:
 - St. Jones A,B,C,D
- 2 day sampling period
- Beginning 30 minutes before sunrise
 - Ending by 10:30 AM
- Sites sampled in the same order to avoid disturbance
- 3 replicates: May-July 15



Vegetation Surveys

- 50 m radius circle around each survey point
- Record percent cover of plant communities and habitats
 - Record dominant vegetation



Lessons Learned

- Survey access is restricted by tides
- Tide moves quickly
 - Important to tightly secure the boat before each survey
- Background noise
 - Dover Air Force Base
 - Points located near the highway



Future

- **Citizen science program**
 - **Include more volunteers**
 - **Training**
- **Long term monitoring**
- **Potentially expand to Blackbird Creek Reserve**



Acknowledgements

- DNERR Volunteers
- Drexel Siok, Kenny Smith, Jennifer Holmes, Mike Mensinger, DCP
- Rich Kazda, DSU
- Mark Wolanski, NCCD
- Dr. Greg Shriver & Whitney West, UD
- Max Henzler & Wendy Eash, GTM NERR

Questions?

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