

# SHARP

## Saltmarsh Habitat & Avian Research Program

Co-PIs: Tom Hodgman, Brian Olsen, Greg Shriver, Adrienne Kovach, Jonathan Cohen

5 Universities

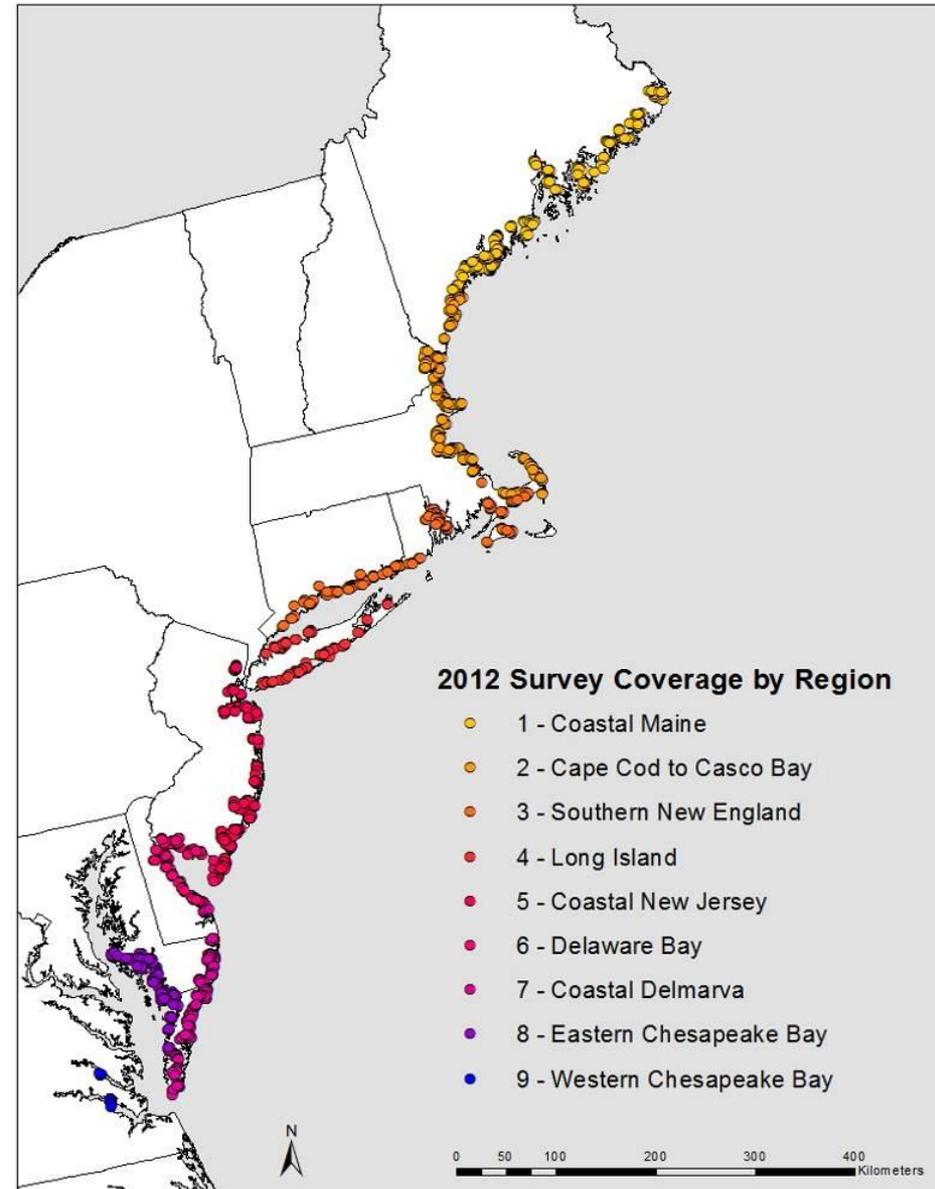
10 States

14 Graduate students

4 Postdocs/Staff



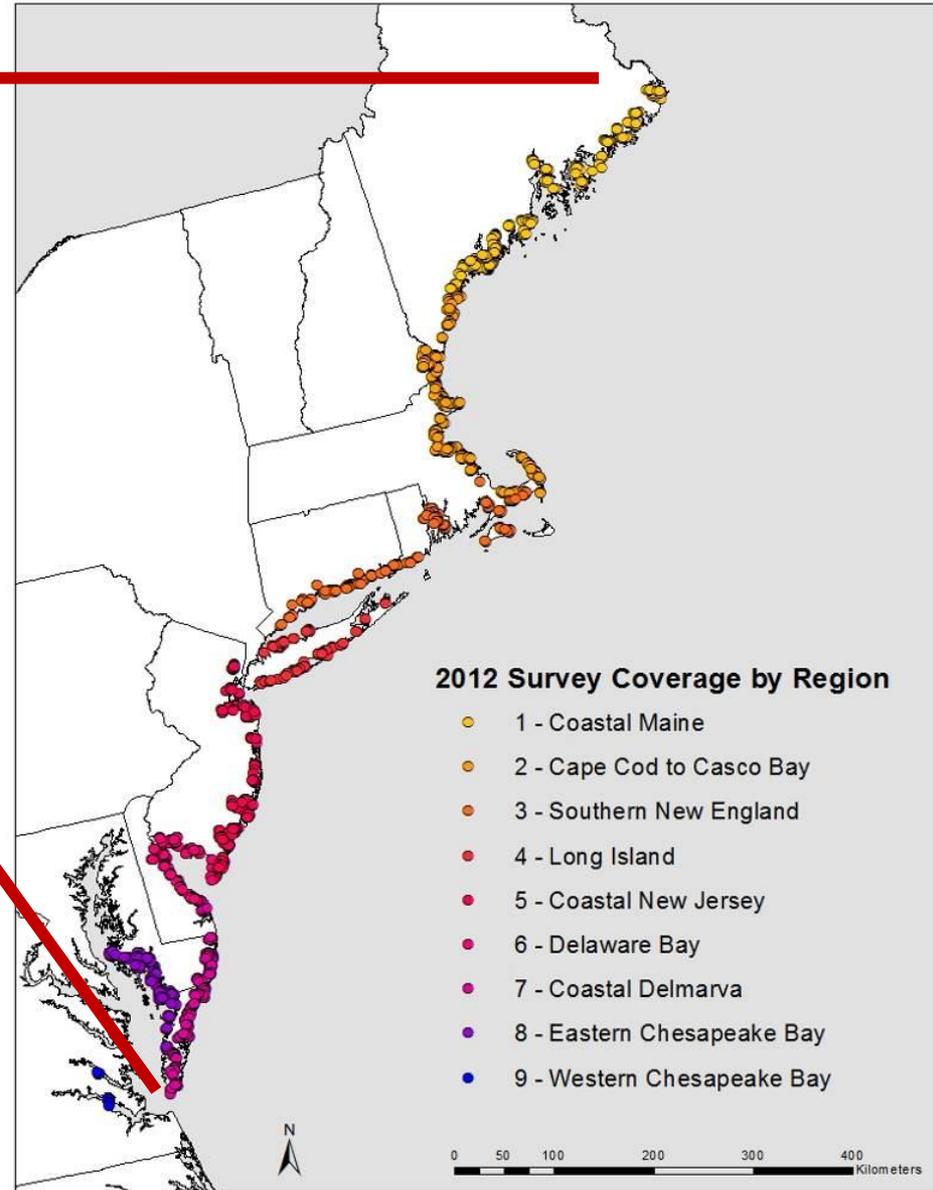
# 2011-12 surveys for competitive State Wildlife Grant



# Storm path

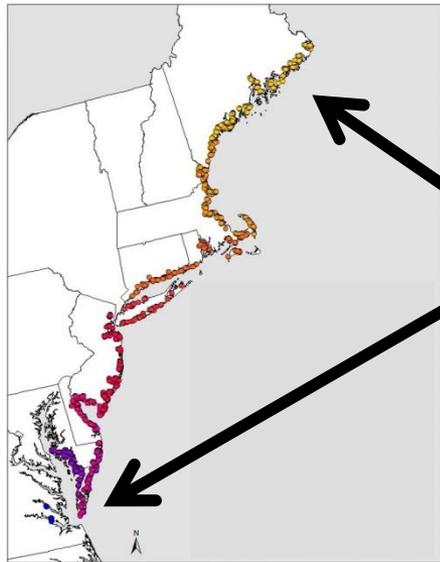


# Our study area



# BACI study design

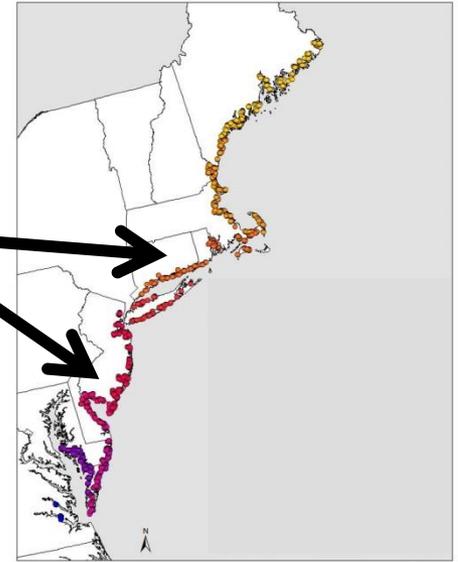
**Before**



**2011-2012**

**Control – Impact**

**After**



**2013-2014**



# QUESTIONS

1. What effects do hurricanes have?
  - bird abundance
  - habitat change
  - demography

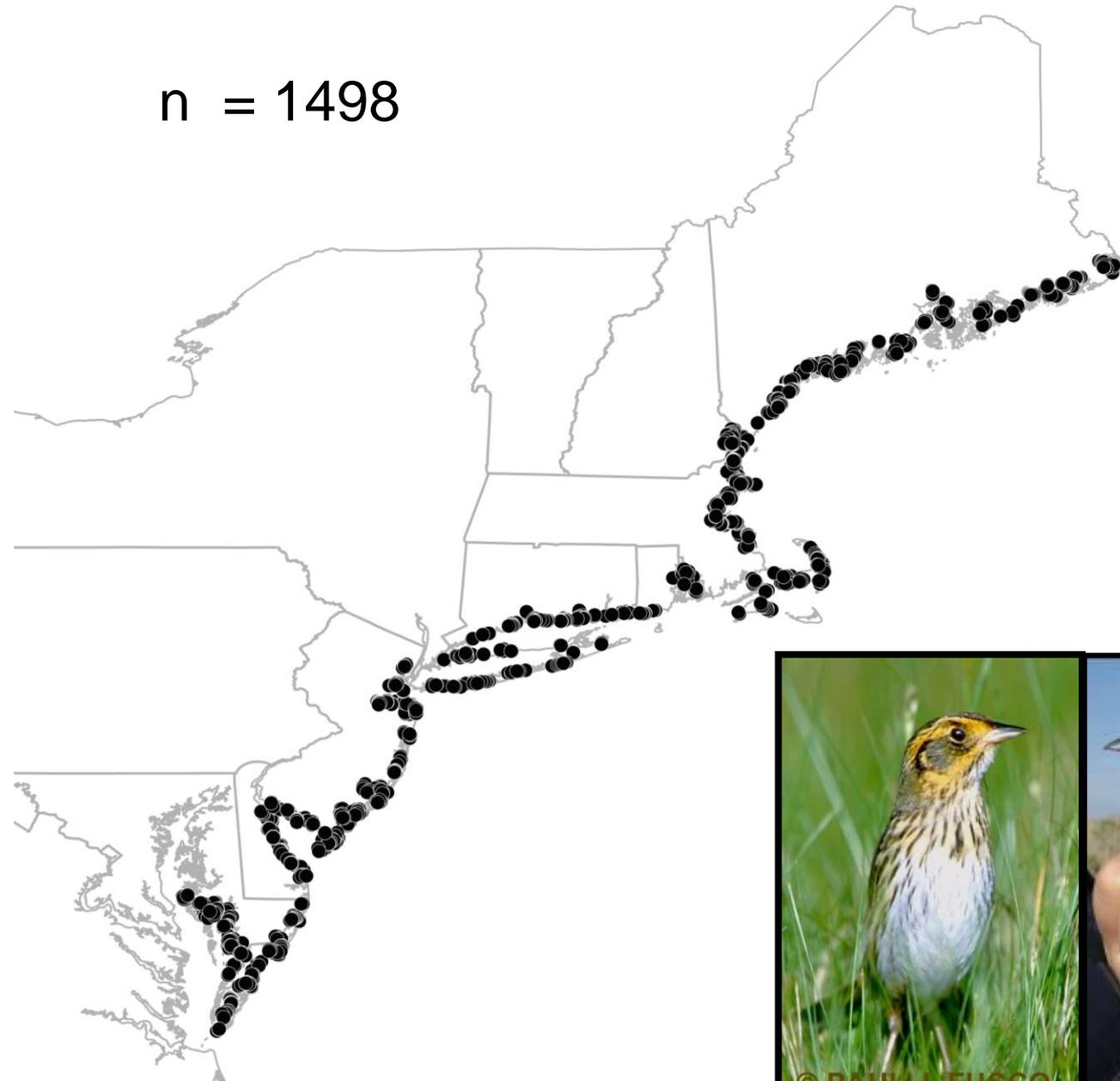


# QUESTIONS

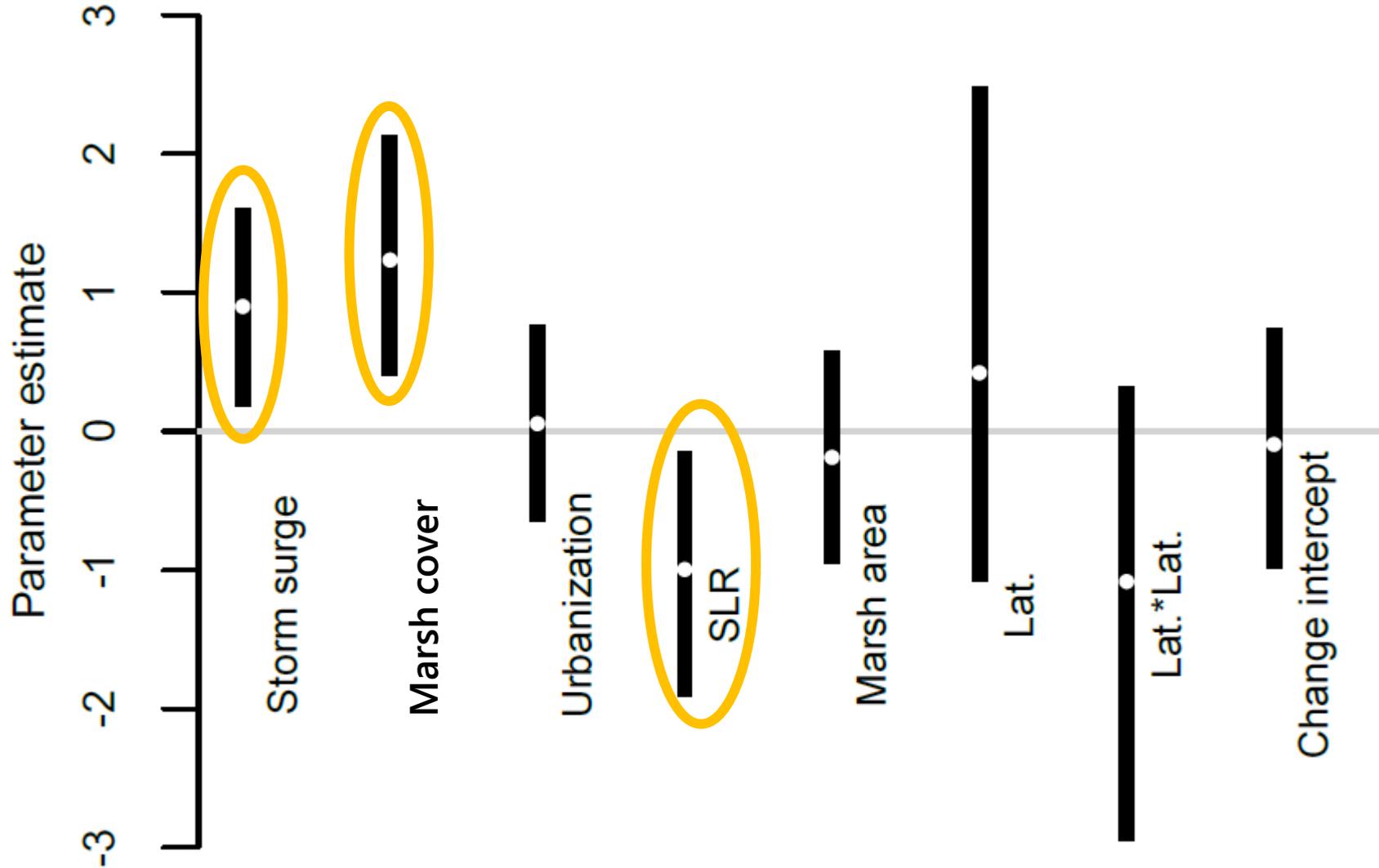
1. What effects do hurricanes have?
  - bird abundance
  - habitat change
  - demography
2. What influences resilience?
  - reduced by chronic stressors?
  - increased by land protection?

# SHARP survey locations

n = 1498



# Saltmarsh sparrows increased with bigger storm surge & more nearby marsh cover



... decreased in areas with more sea level rise

# 2012 vs 2013

## (preliminary)

	Storm surge	Marsh cover (1 km)	Urban (1 km)	Sea-level rise	Marsh size	Latitude	Other change
<b>Willet</b>	.	.	.	+	.	.	.
<b>Clapper rail</b>	+	-	-	.	.	-	.
<b>Seaside sparrow</b>	.	.	.	-	-	.	+
<b>Saltmarsh sparrow</b>	+	+	.	-	.	.	.
<b>Nelson's sparrow</b>	.	.	.	.	.	.	.

# 2012 vs 2013

## (preliminary)

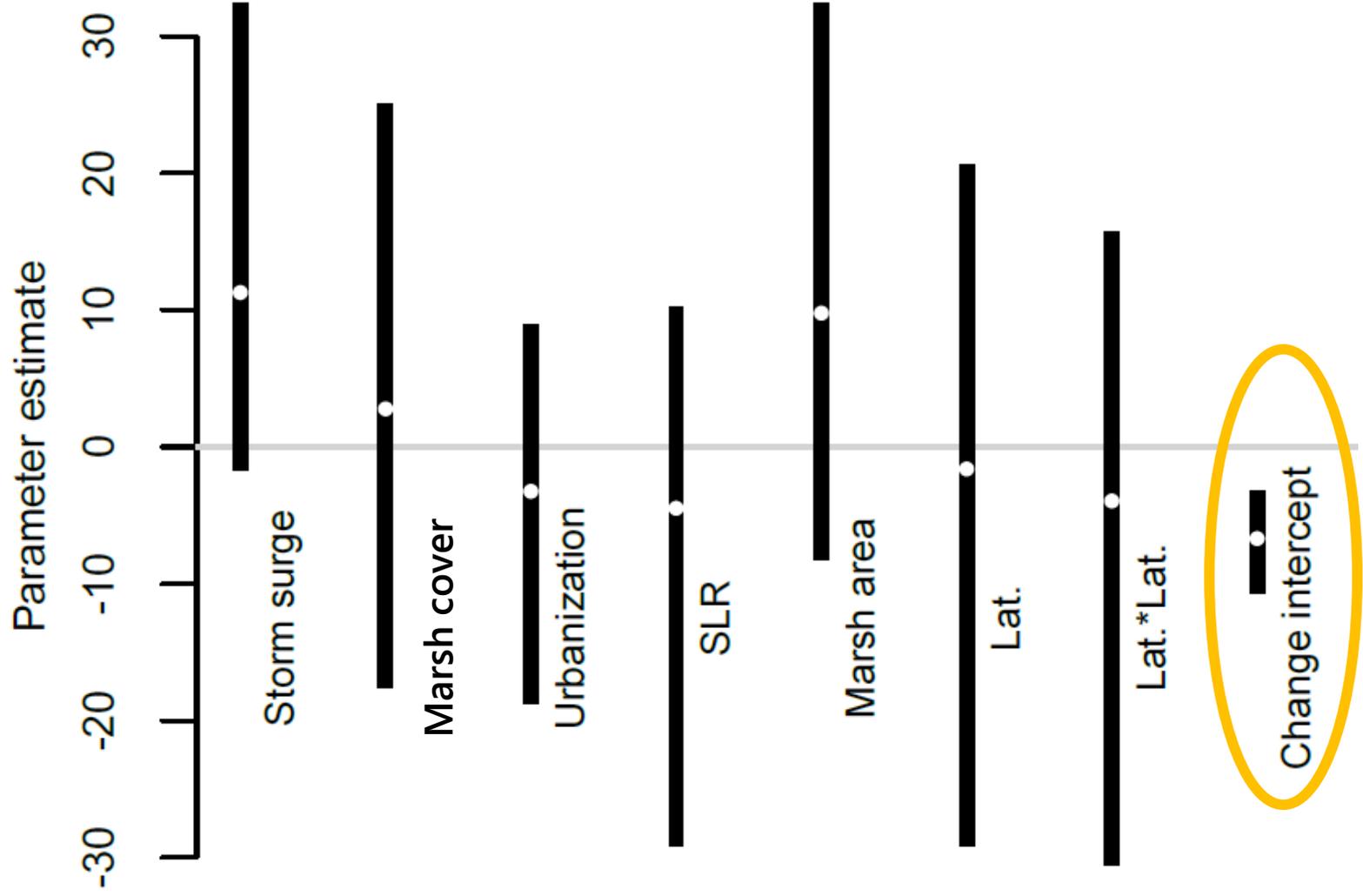
	Storm surge	Marsh cover (1 km)	Urban (1 km)	Sea-level rise	Marsh size	Latitude	Other change
Willet	.	.	.	+	.	.	.
Clapper rail	+	-	-	.	.	-	.
Seaside sparrow	.	.	.	-	-	.	+
Saltmarsh sparrow	+	+	.	-	.	.	.
Nelson's sparrow	.	.	.	.	.	.	.

**No declines linked to bigger storm surge**

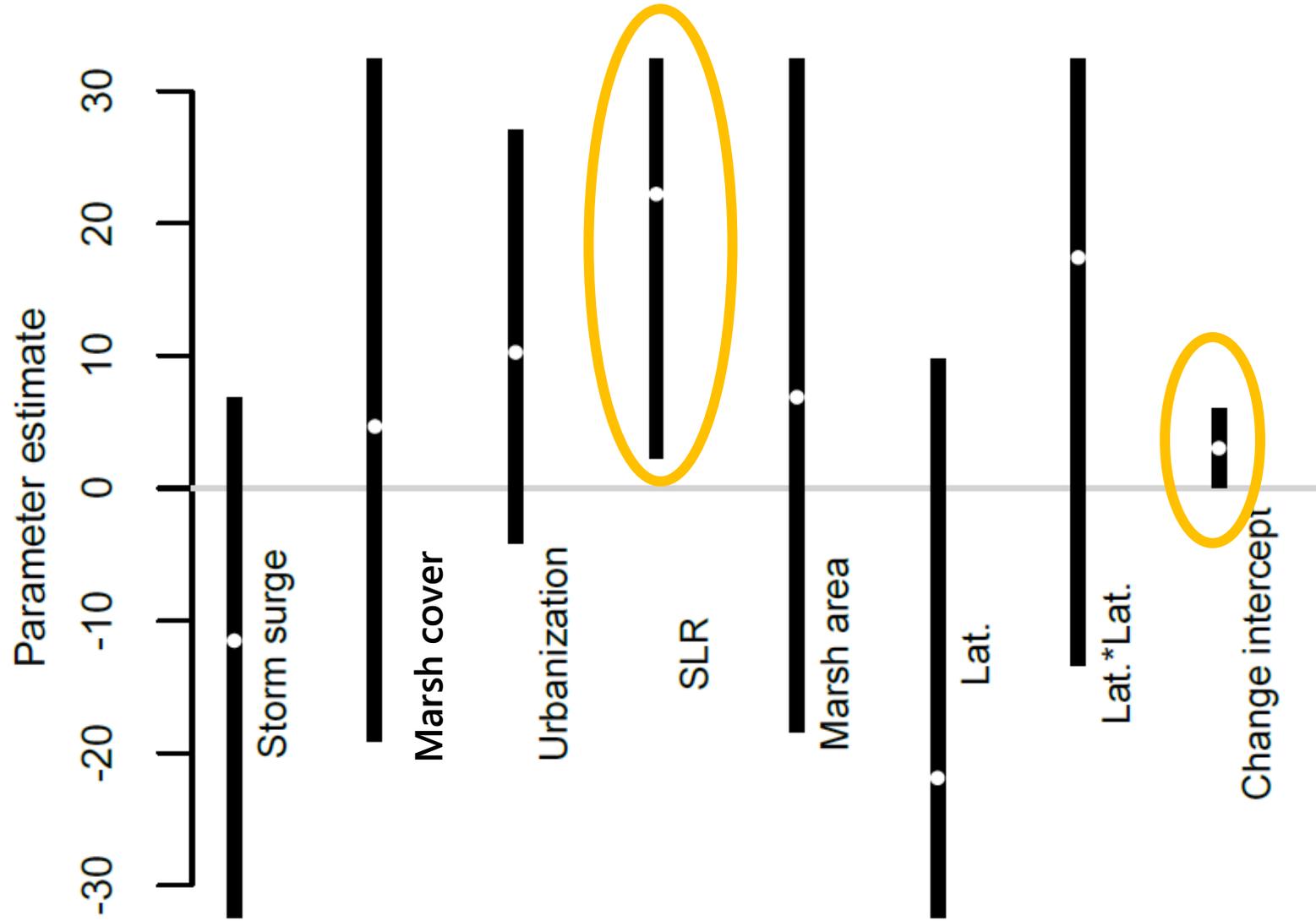
# Vegetation change



# High marsh decreased overall, but not due to storm surge or other factors examined



# Low marsh area not affected by storm surge ...



... but increased with higher rates of sea-level rise



LONG ISLAND SOUND STUDY  
A PARTNERSHIP TO RESTORE AND PROTECT THE SOUND

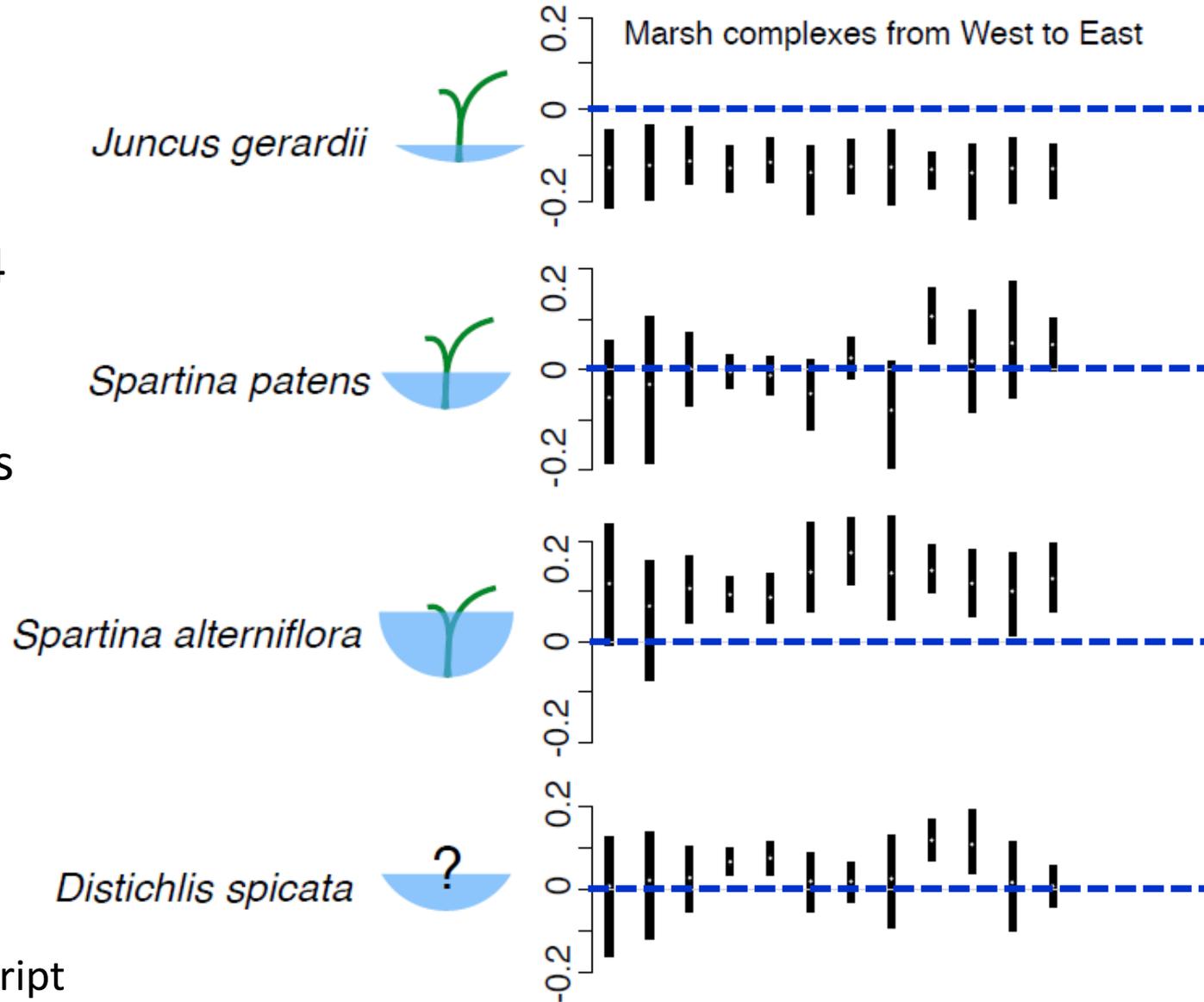


# Sentinels of climate change:

Coastal indicators of wildlife and ecosystem change in LIS  
Chris Elphick, Chris Field, Min Huang

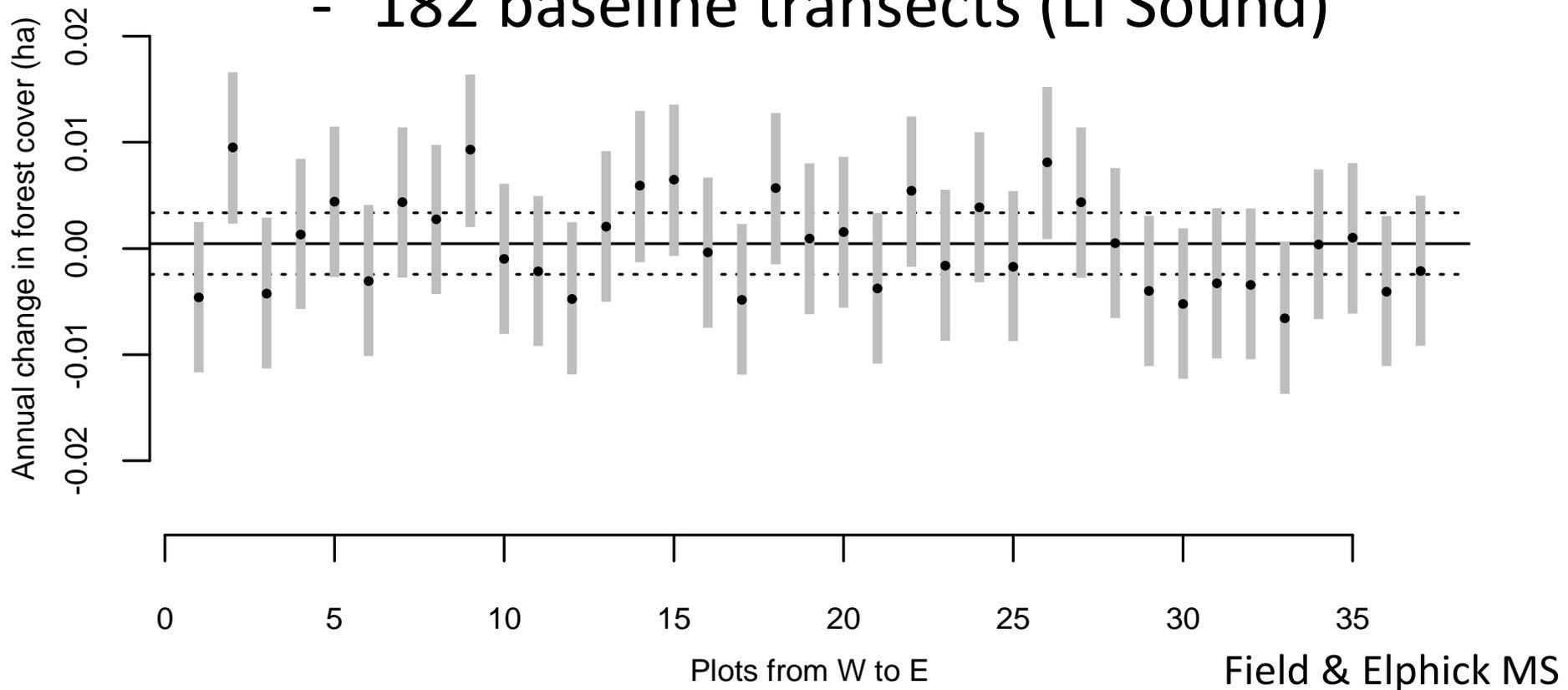
# Vegetation changes suggest that Connecticut marshes are getting wetter:

Initial data: 2002-04  
Re-sample: 2013  
55 1-ha plots  
12 marsh complexes



# No evidence for region-wide transgression into forested uplands:

- Aerial photos
- Tree mortality, growth
- Understory plant surveys
- 182 baseline transects (LI Sound)



## MORE INFORMATION:

<http://www.tidalmarshbirds.org/>

<https://www.facebook.com/TidalMarshBirds>

#SHARPBirds



## CONTACT ME:

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Center for Conservation and Biodiversity  
University of Connecticut



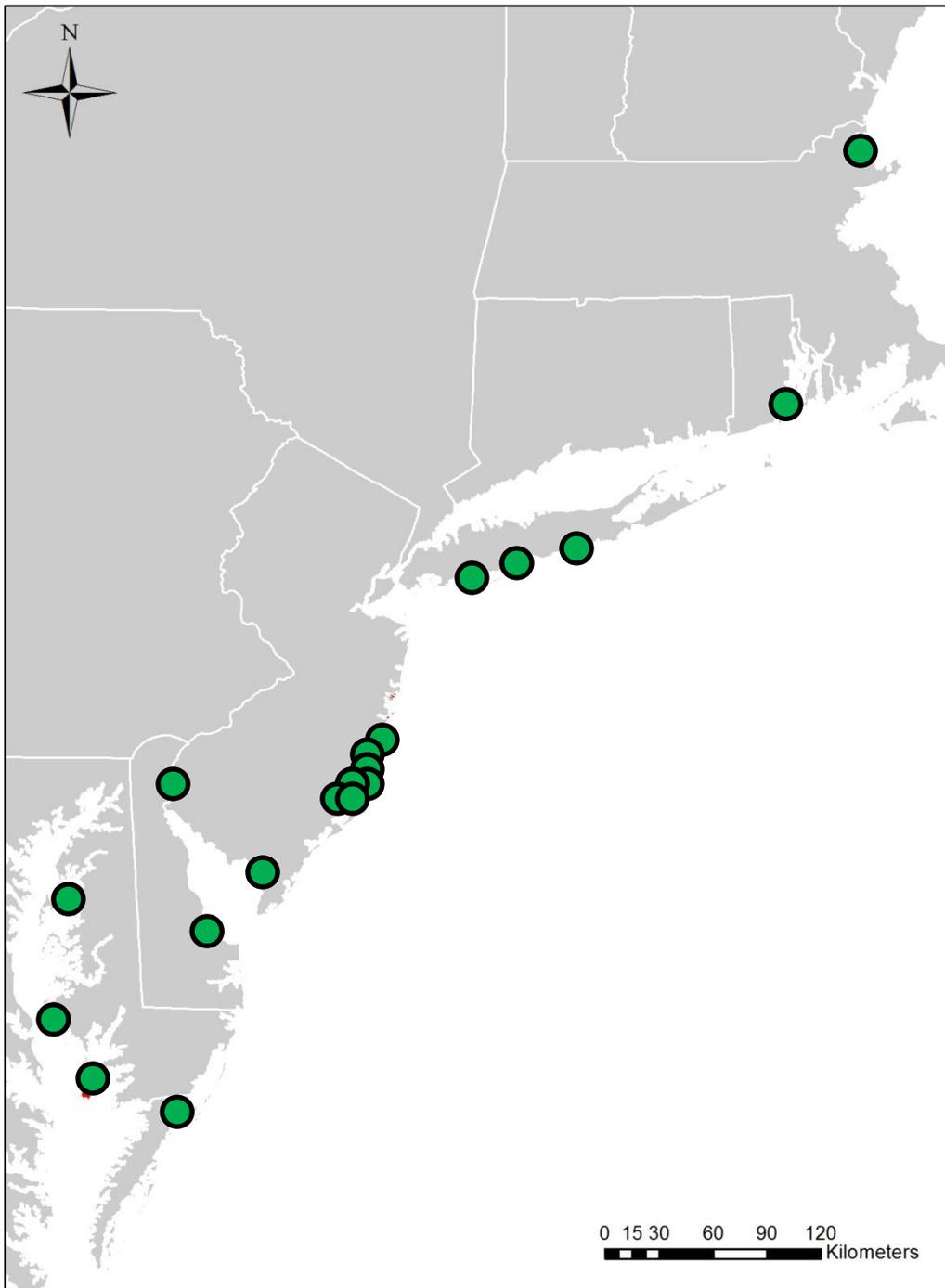
University of Connecticut

**Center for Conservation  
and Biodiversity**



# QUESTIONS

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  - habitat
  - demography
2. What influences resilience?
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  - increased by land protection?
3. Does restoration work?
  - pre/post comparisons
  - control comparisons
  - regional variations



## Restoration activities

- altered hydrology
- sediment additions
- living shorelines
- assisted migration