

SHARP

Saltmarsh Habitat & Avian Research Program

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

5 Universities

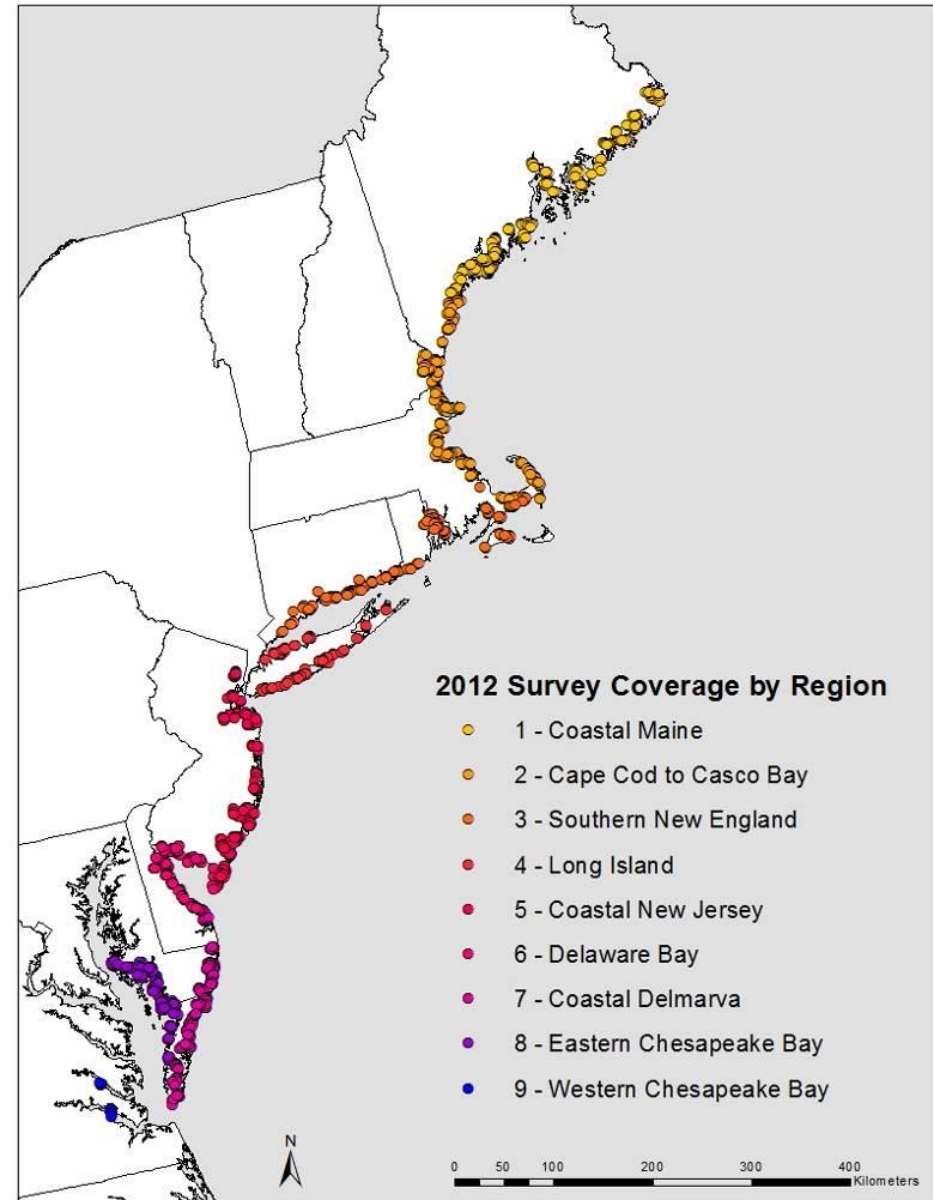
10 States

14 Graduate students

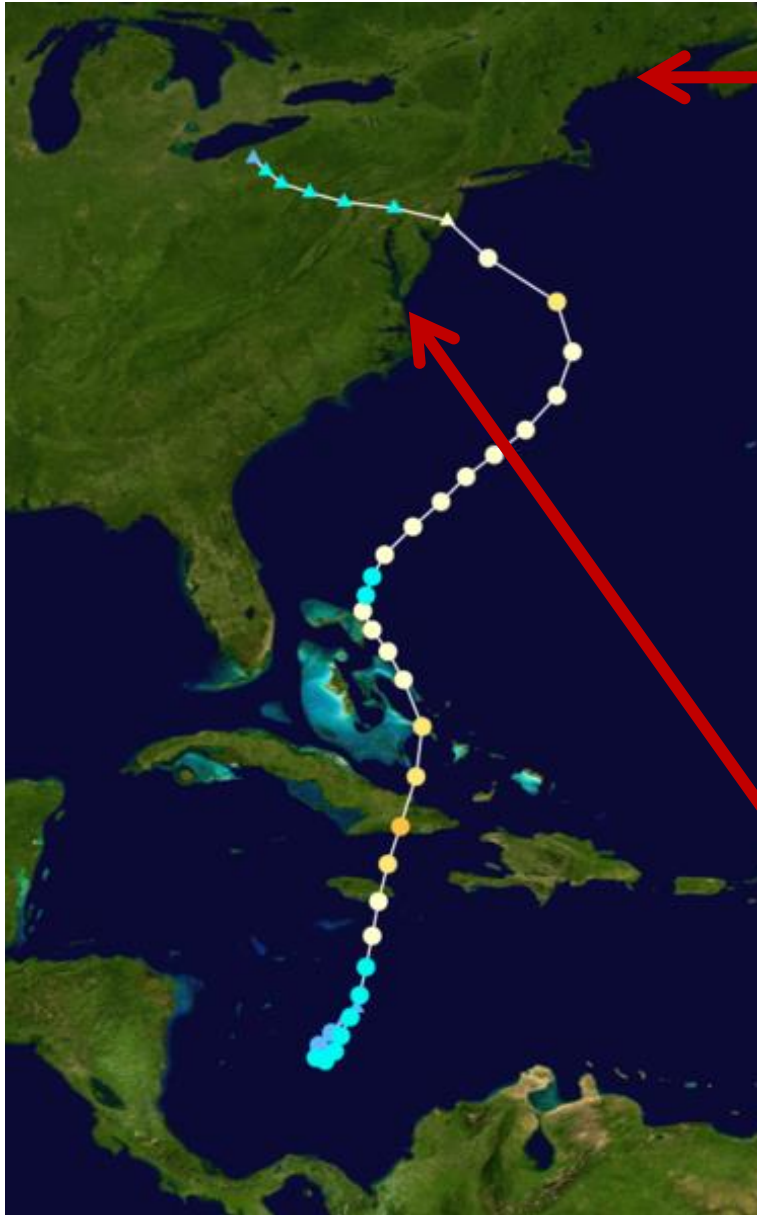
4 Postdocs/Staff



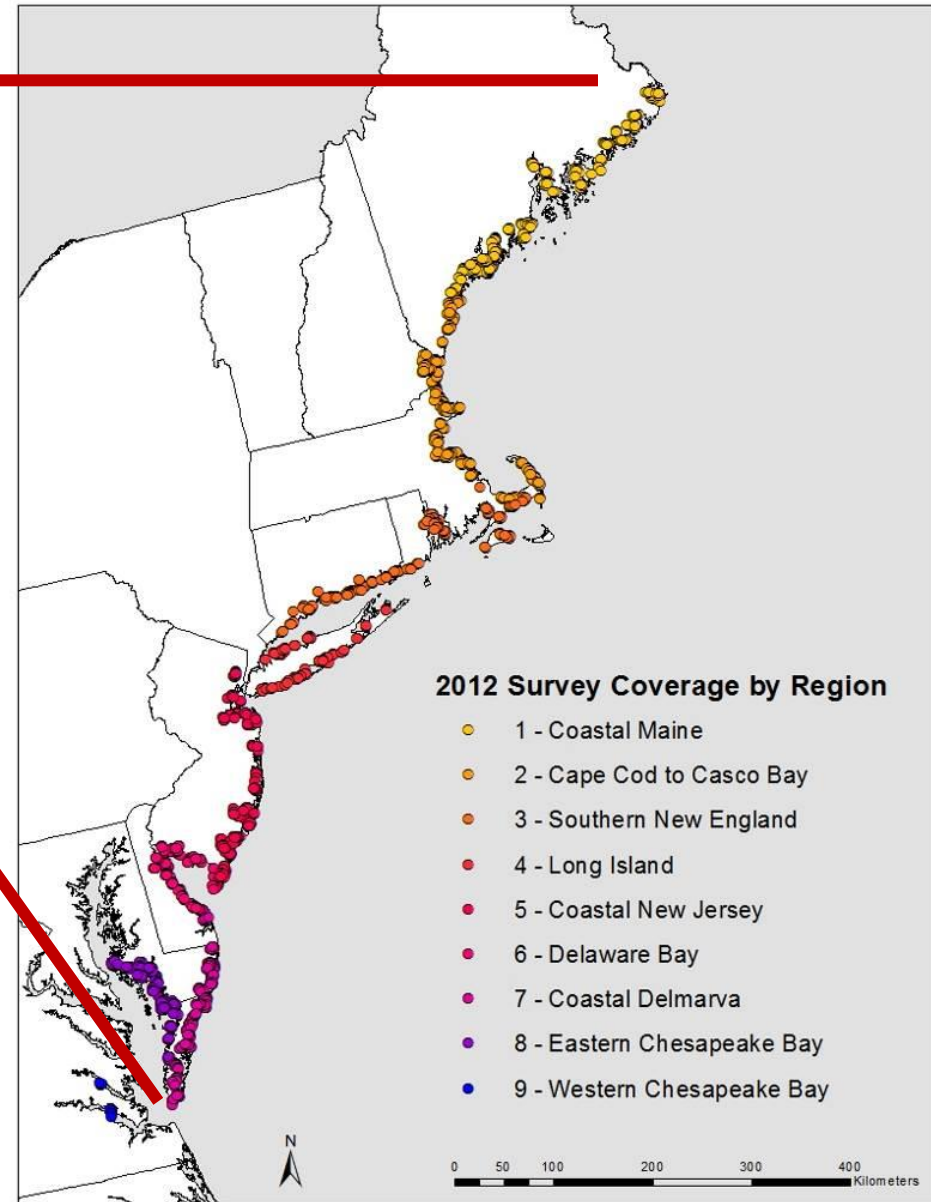
2011-12 surveys for competitive State Wildlife Grant



Storm path



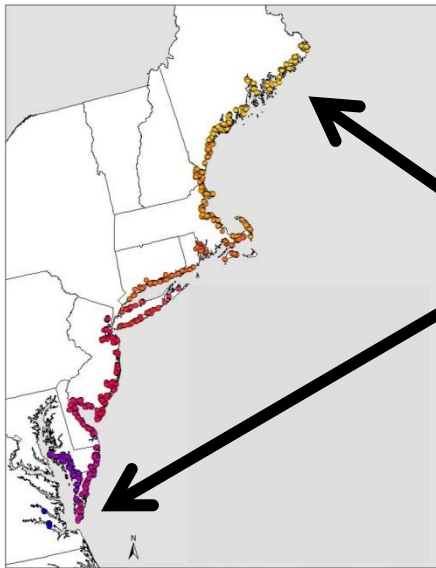
Our study area



BACI study design

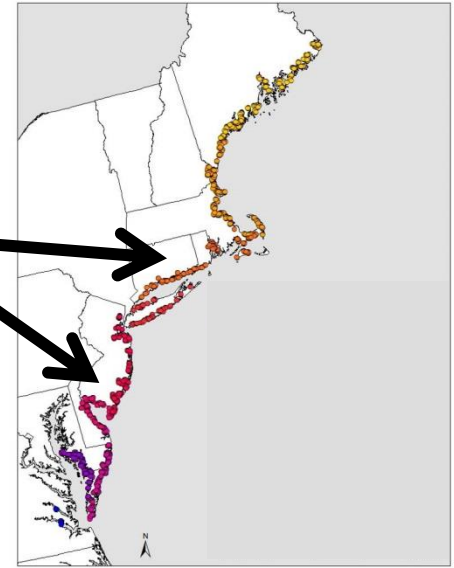
Before

After



2011-2012

Control – Impact



2013-2014



QUESTIONS

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

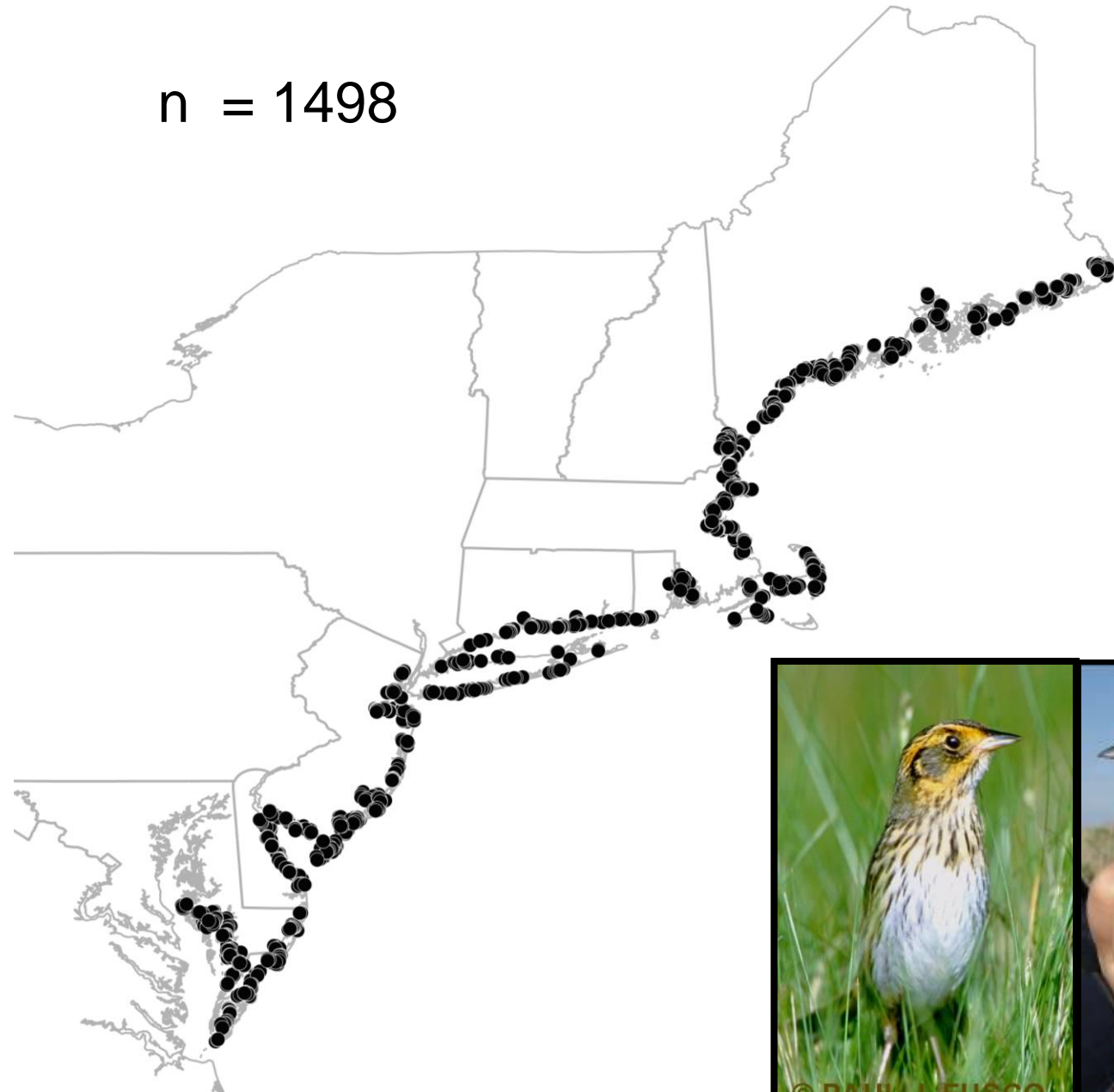


QUESTIONS

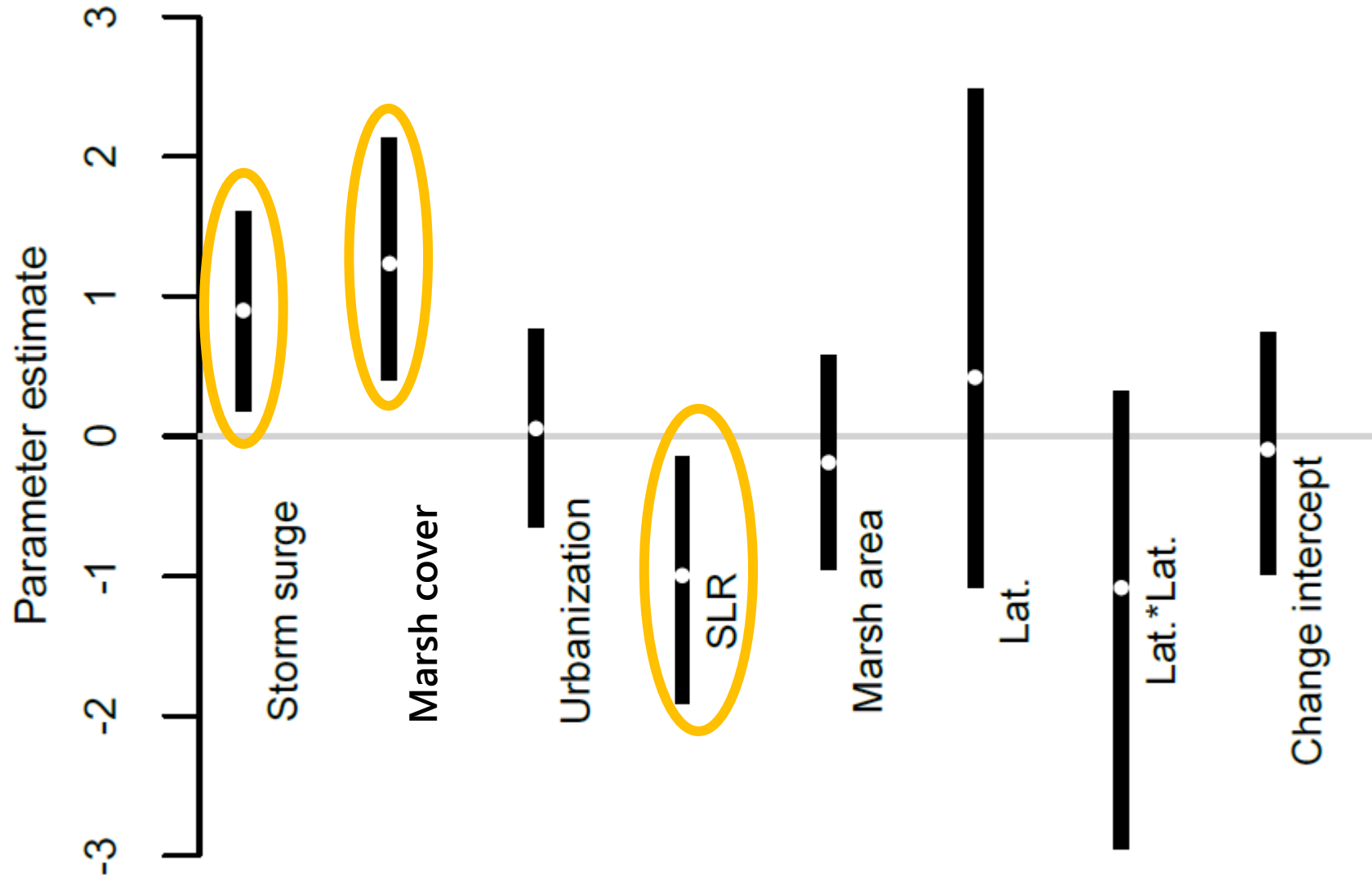
1. What effects do hurricanes have?
 - bird abundance
 - habitat change
 - demography
2. What influences resilience?
 - reduced by chronic stressors?
 - increased by land protection?

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
Willet	.	.	.	+	.	.	.
Clapper rail	+	-	-	.	.	-	.
Seaside sparrow	.	.	.	-	-	.	+
Saltmarsh sparrow	+	+	.	-	.	.	.
Nelson's sparrow

2012 vs 2013

(preliminary)

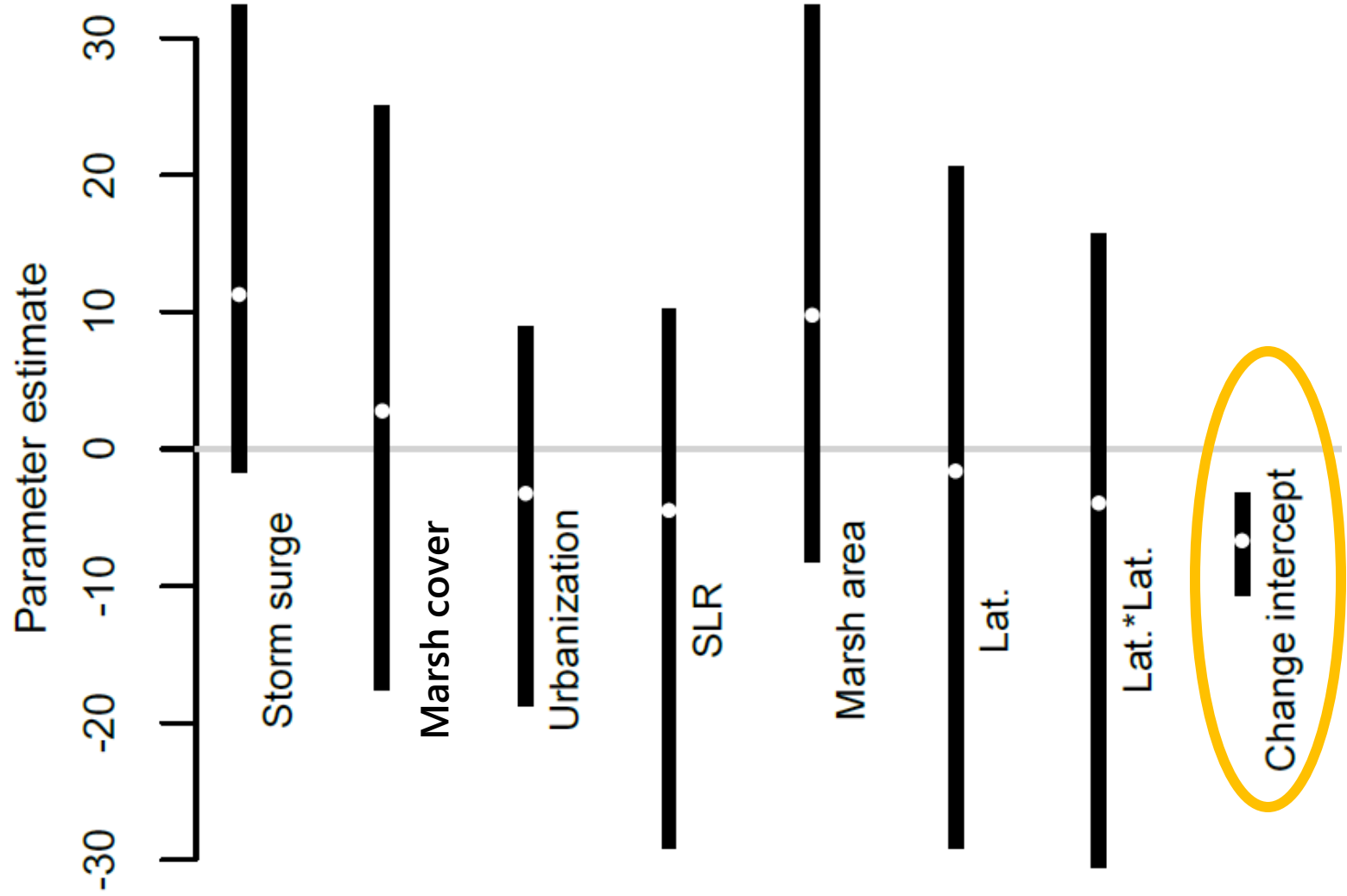
	Storm surge	Marsh cover (1 km)	Urban (1 km)	Sea-level rise	Marsh size	Latitude	Other change
Willet	.	.	.	+	.	.	.
Clapper rail	+	-	-	.	.	-	.
Seaside sparrow	.	.	.	-	-	.	+
Saltmarsh sparrow	+	+	.	-	.	.	.
Nelson's sparrow

No declines linked to bigger storm surge

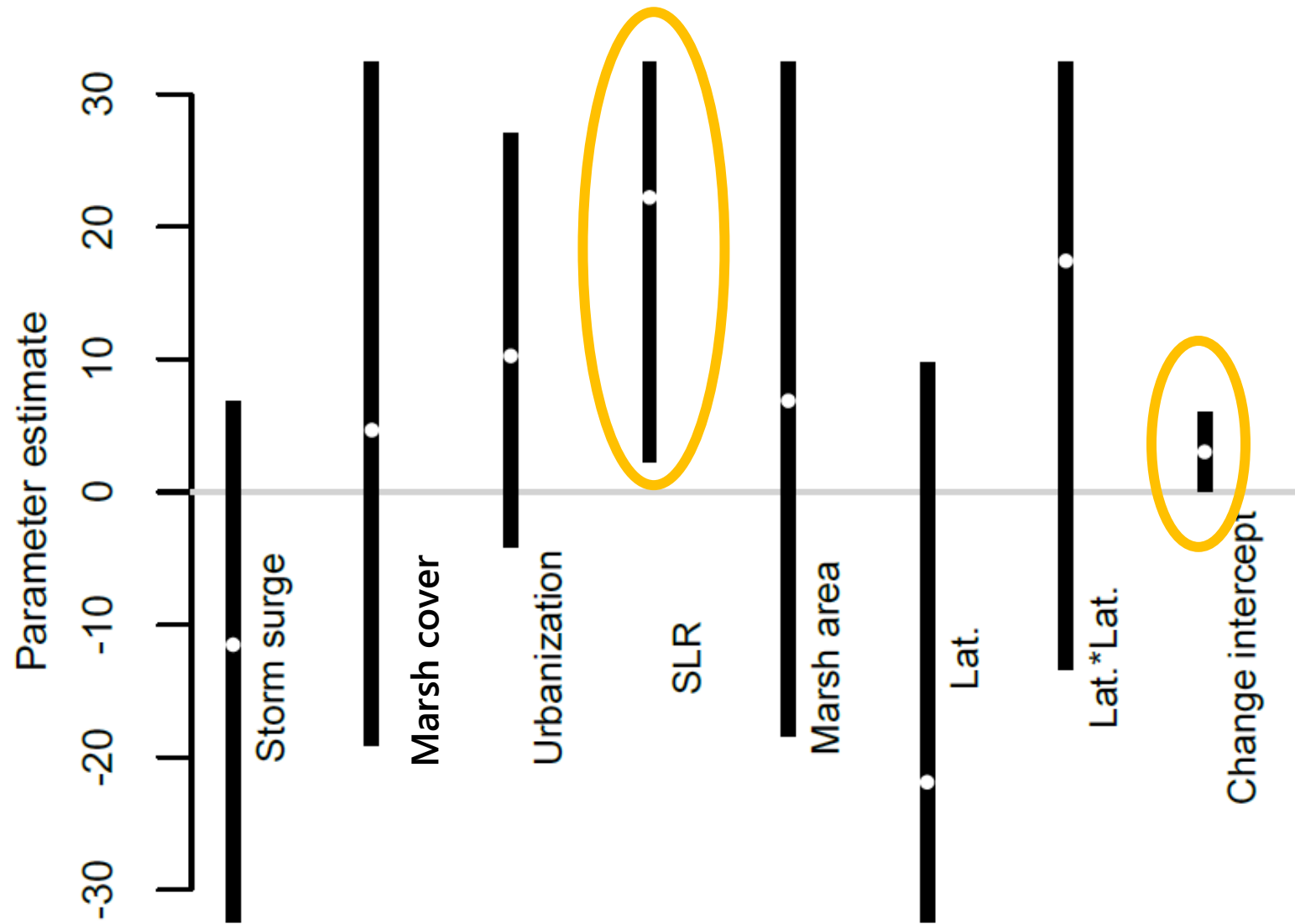
Vegetation change



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



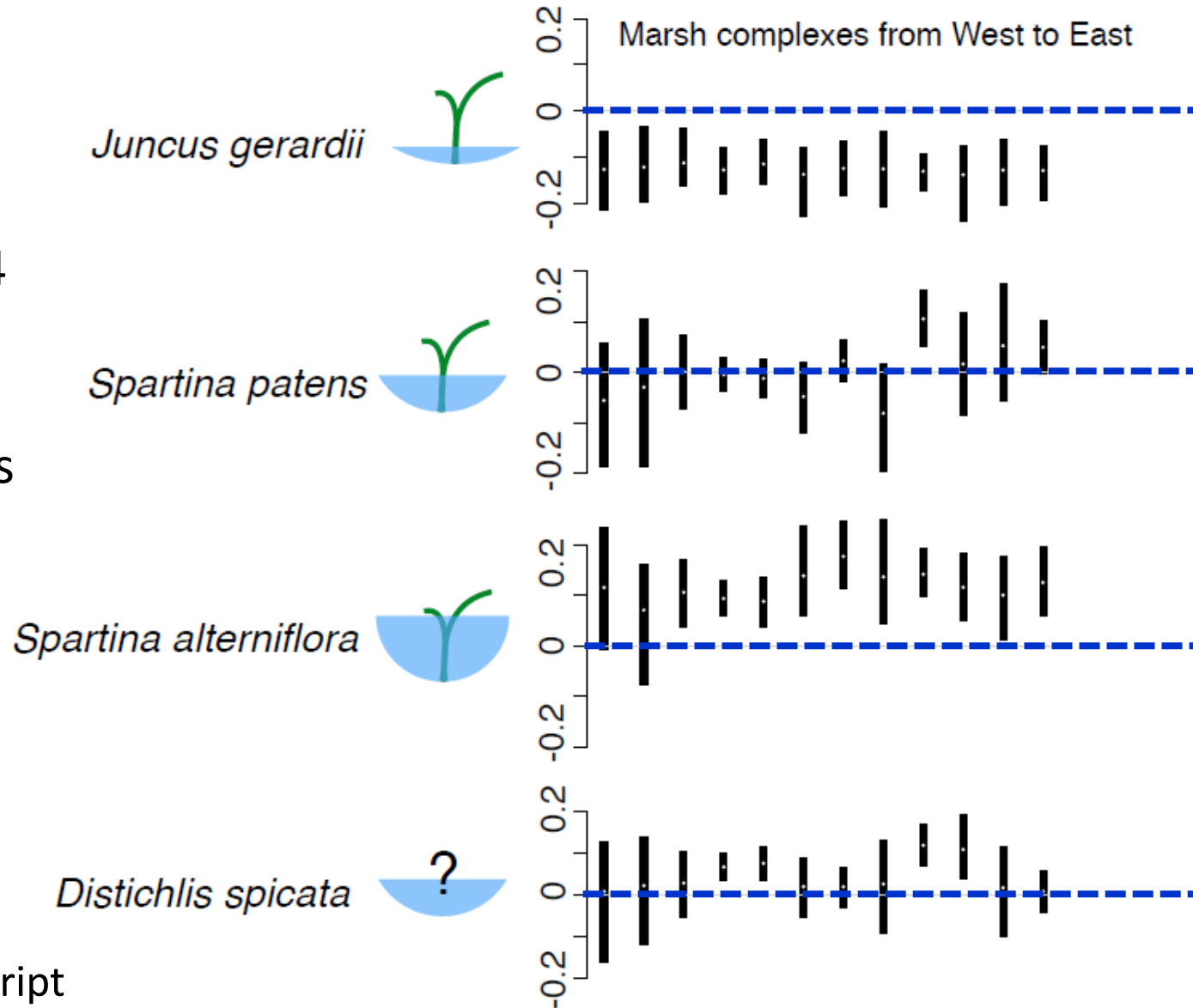
Sentinels of climate change:

Coastal indicators of wildlife and ecosystem change in LIS

Chris Elphick, Chris Field, Min Huang

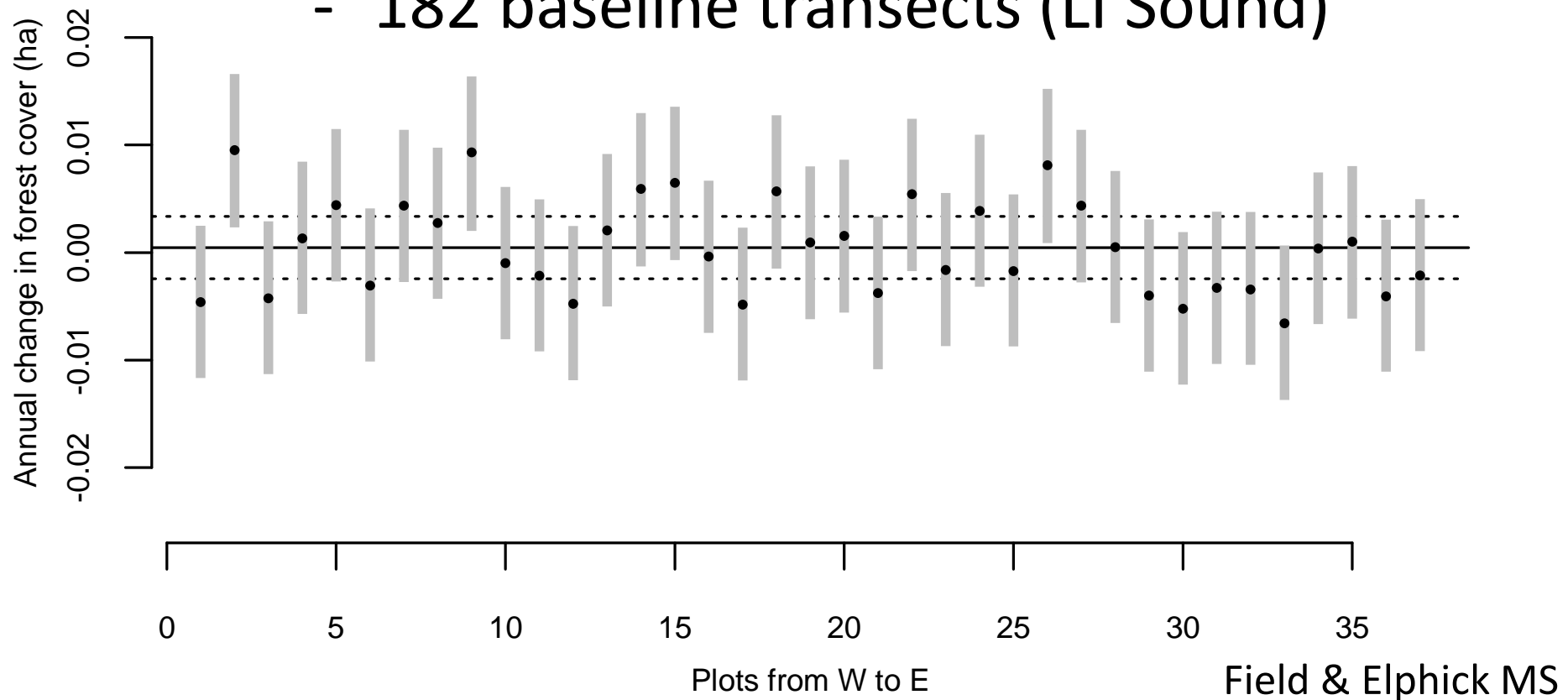
Vegetation changes suggest that Connecticut marshes are getting wetter:

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



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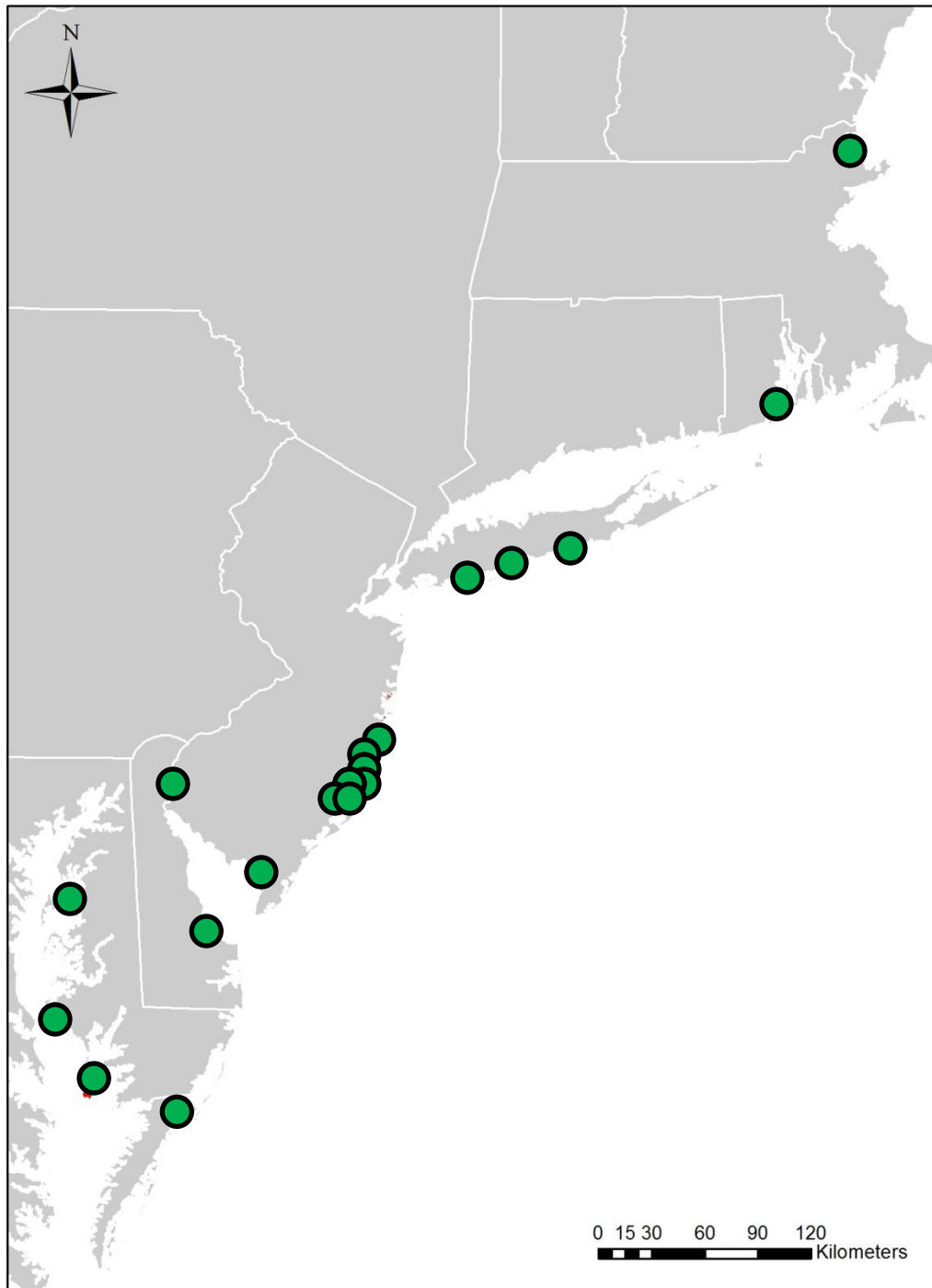


University of Connecticut

**Center for Conservation
and Biodiversity**

QUESTIONS

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