



Assessing Coastal Resilience IN THE UNITED STATES

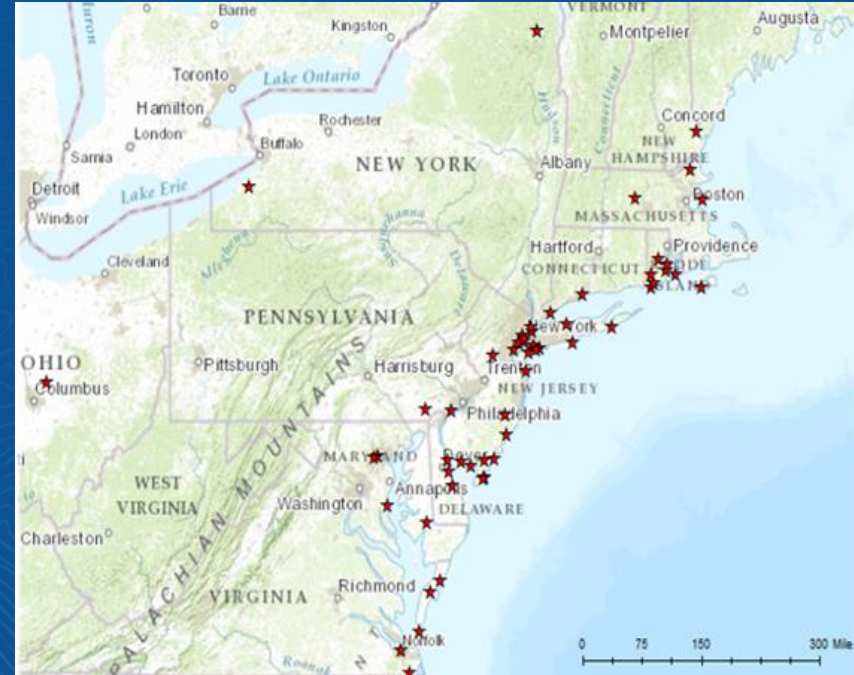
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UNC Asheville's NEMAC

Mandy Chesnutt
National Fish and Wildlife Foundation



Background Information

- August 2013: DOI selected NFWF to administer its Hurricane Sandy Coastal Resilience Program
- Projects that reduce communities' vulnerability to coastal storms and related threats by strengthening natural lands that also benefit fish and wildlife
- With funding from DOI and NFWF, over \$100 million was awarded to 54 projects
- Fall 2018: Began a national Assessment effort starting with the Cape Fear and the South Atlantic Coast

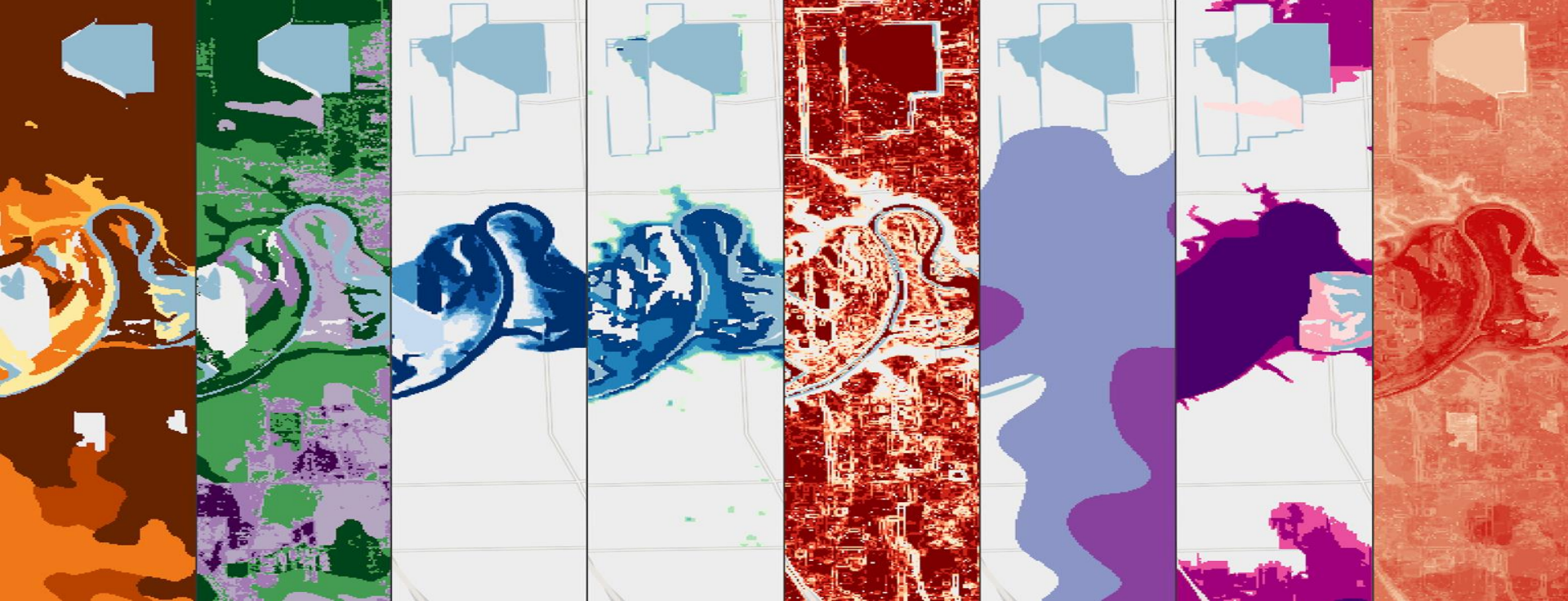


Key Project Objectives

- Identify areas on the landscape where implementation of conservation actions will have maximum benefit for human community resilience AND fish and wildlife habitat
- Account for coastal and inland storm events
- Use regional assessments create a contiguous and standardized dataset for all U.S. coastlines



Identifying Community Exposure



Soil Erodibility

Impermeable
Soils

Sea Level Rise

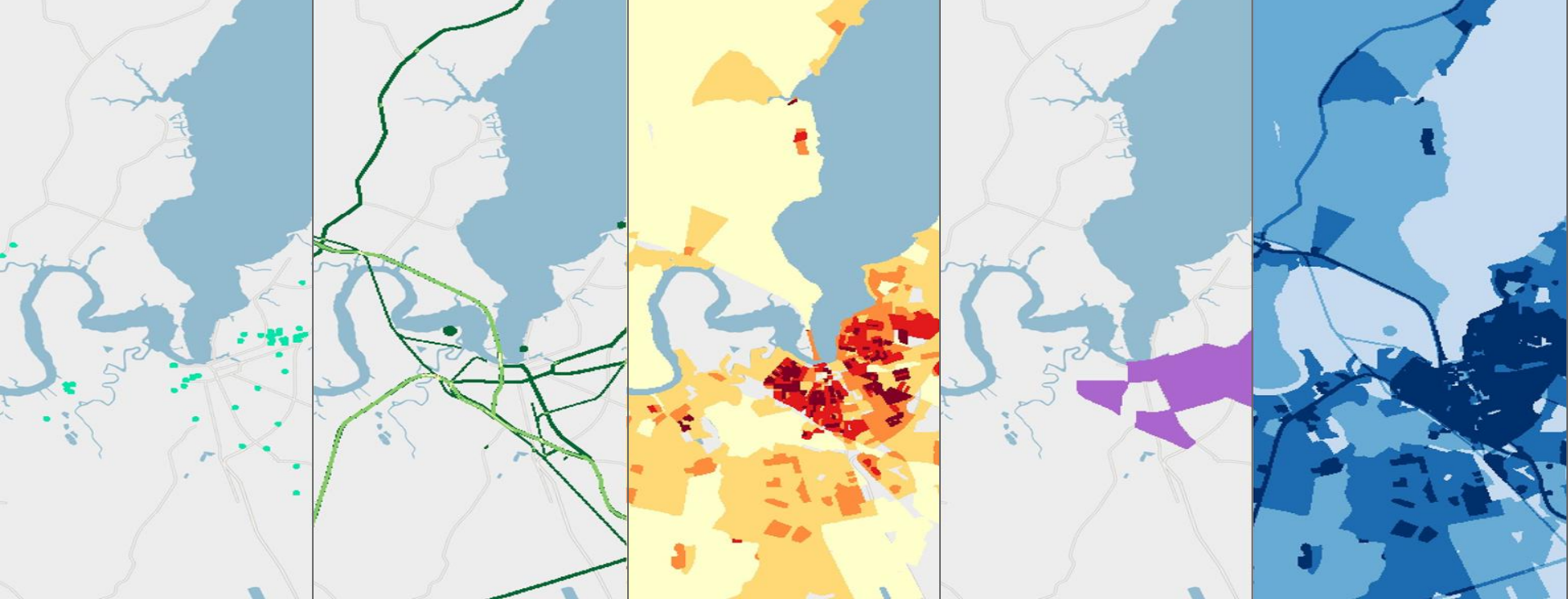
Storm Surge

Areas of Low
Slope

Geological
Stressors

Flood-prone
Areas

Combined
Threat Index



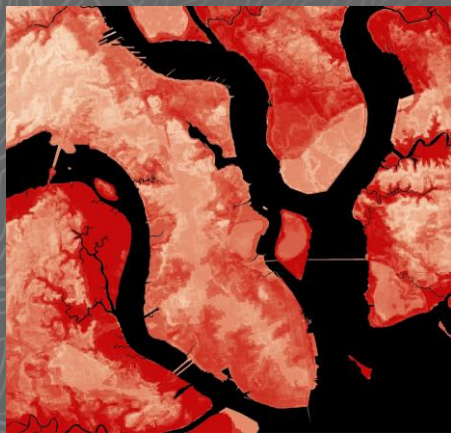
Critical Facilities

Critical Infrastructure

Population Density

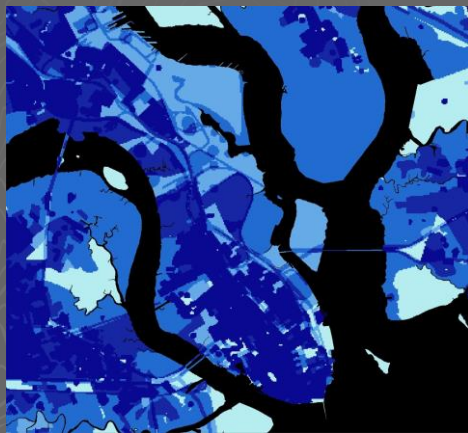
Social Vulnerability

Combined Community Asset Index



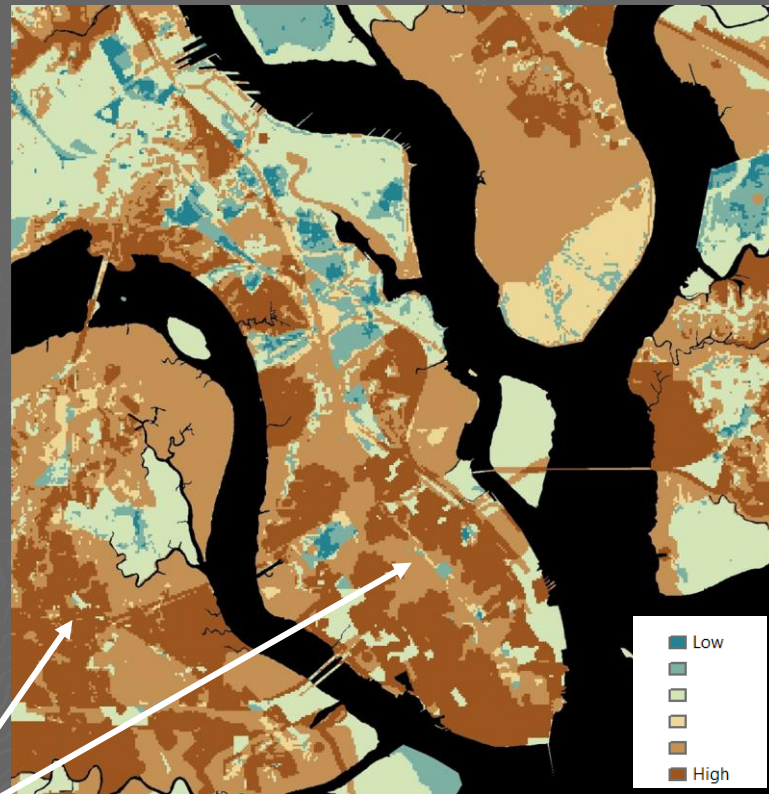
Threat Index

X



Community Asset Index

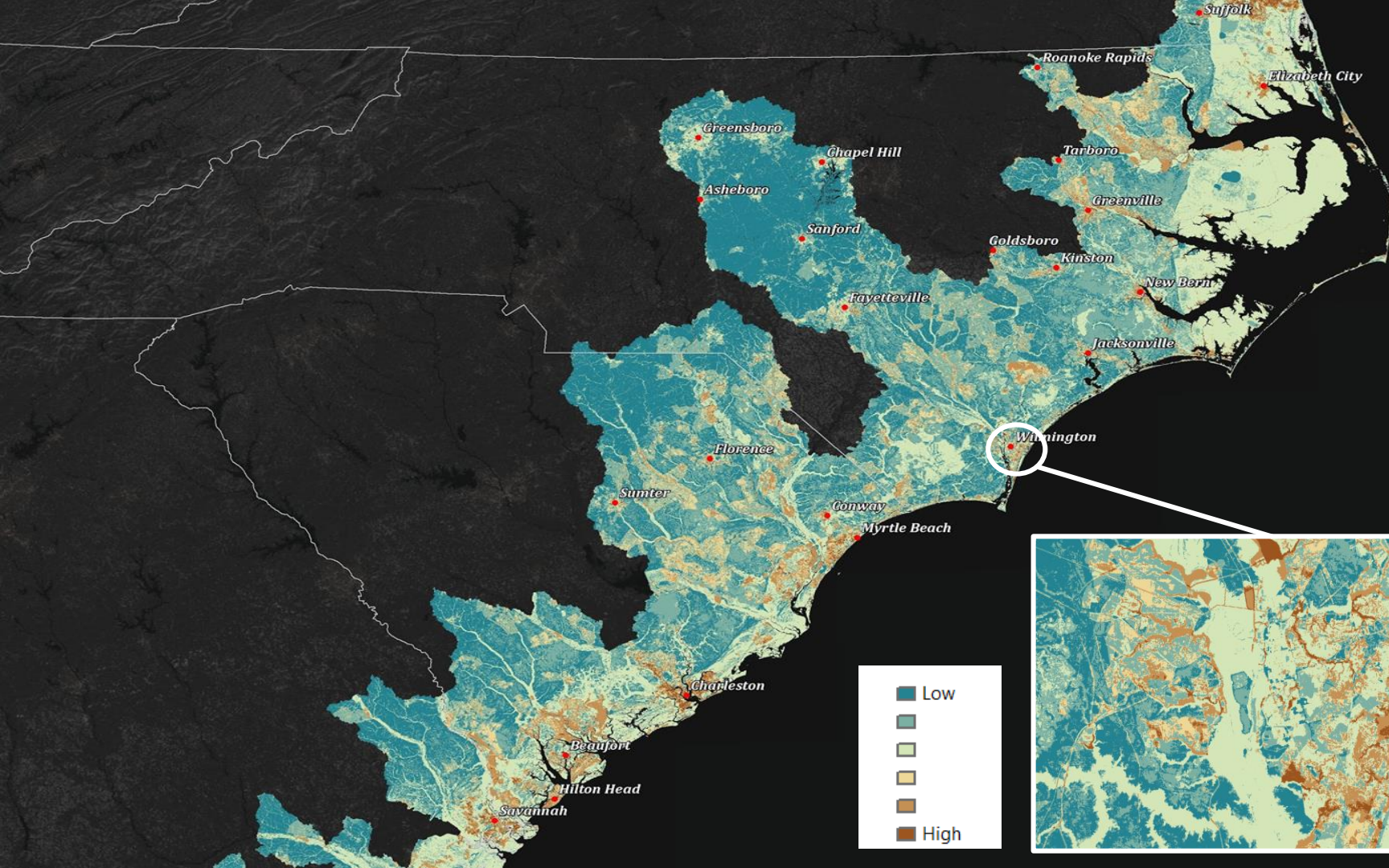
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Community Exposure Index

		Threat Index Ranking		
		Low	Med	High
		1	2	3
Asset Index Ranking	High	3	6	9
	Med	2	4	6
	Low	1	2	3

Helps communicate where the most people and assets are exposed



● Project Sites

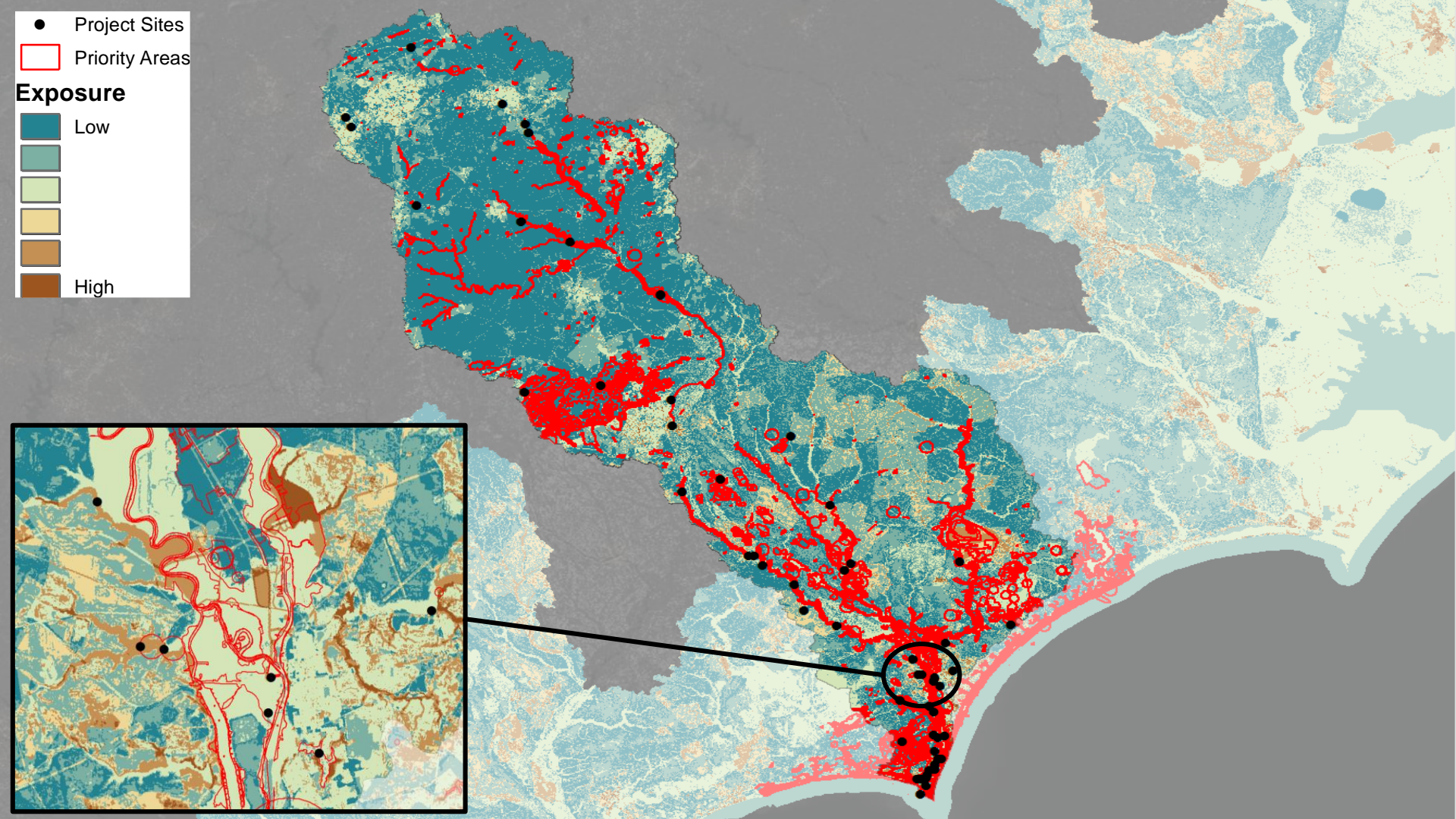
□ Priority Areas

Exposure

Low

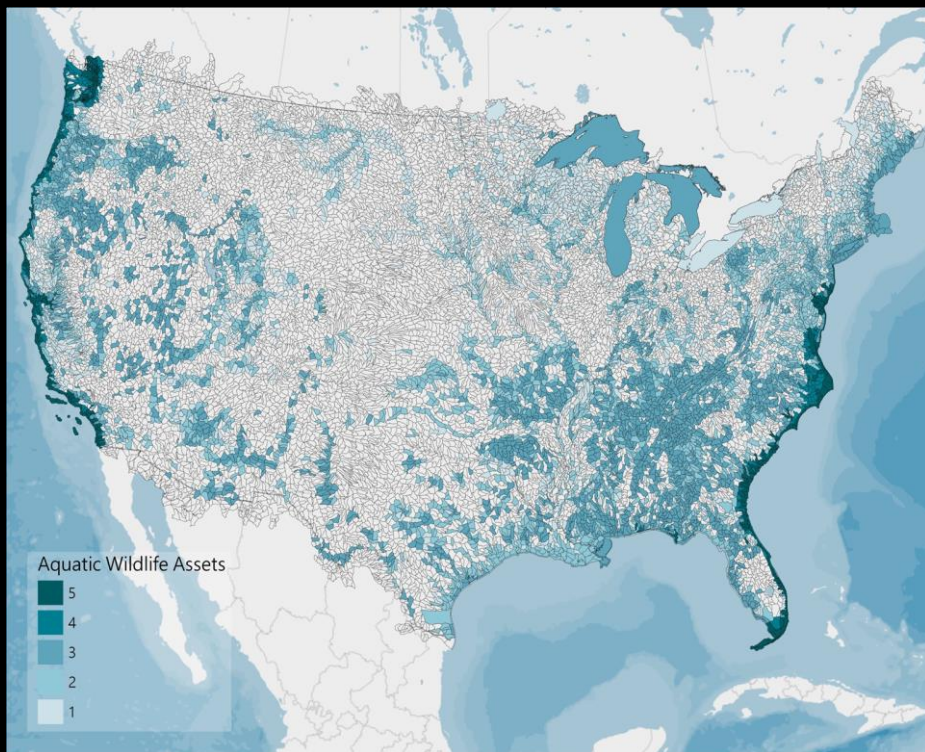


High



Regional Fish and Wildlife Index

Aquatic Index



Terrestrial Index



Terrestrial Index:

- NatureServe (HUC-10) priority species
- Audubon Important Bird Areas

Aquatic Index:

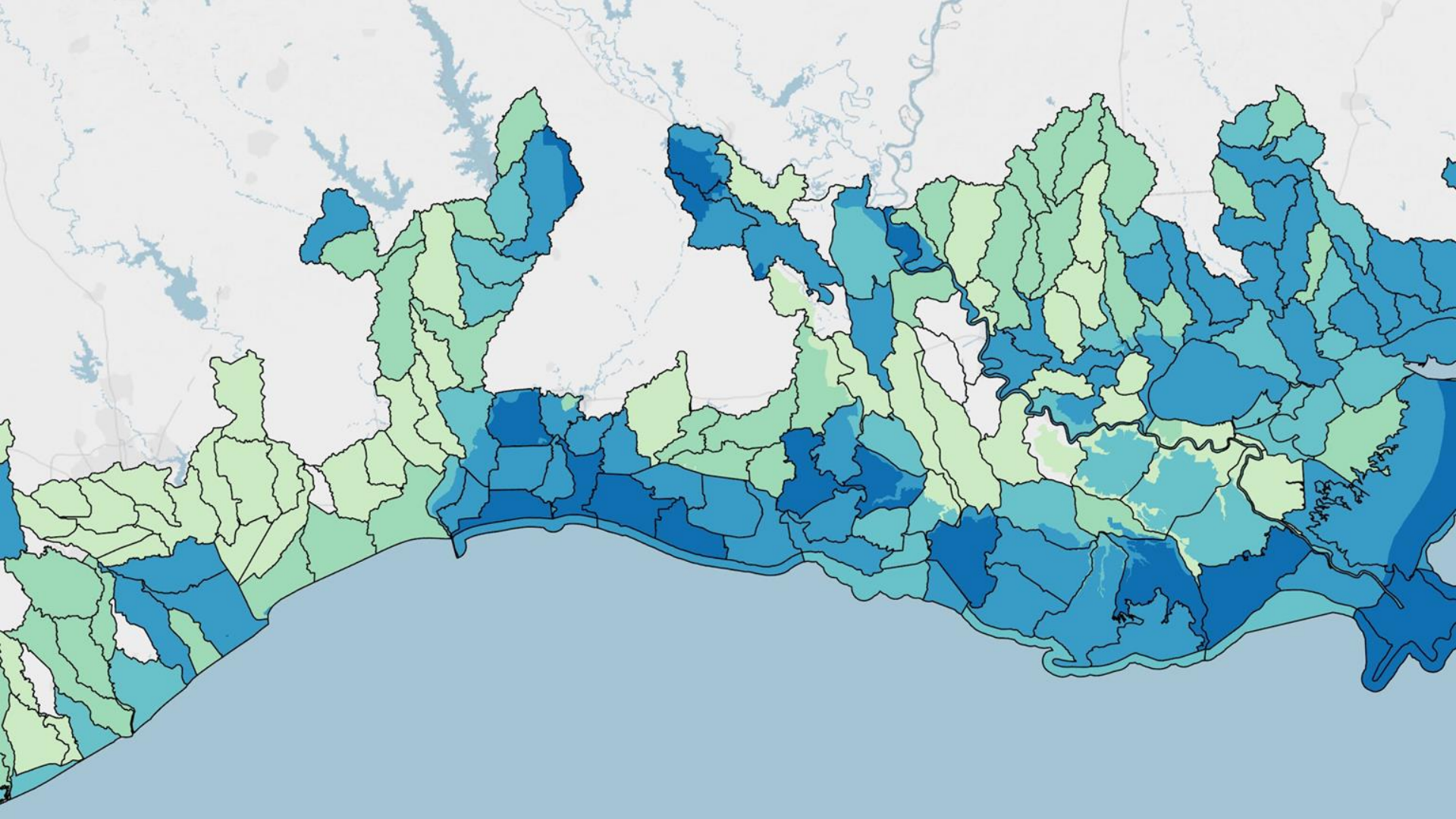
- NatureServe (HUC-10) priority species
- NOAA Critical Habitat
- NOAA Essential Fish Areas
- NOAA Habitat Areas of Particular Concern

Combined Regional Fish and Wildlife Index:

Identifies areas on the landscape where there is a high concentration of both priority Terrestrial and Aquatic species and their habitats.

Combined Fish and Wildlife

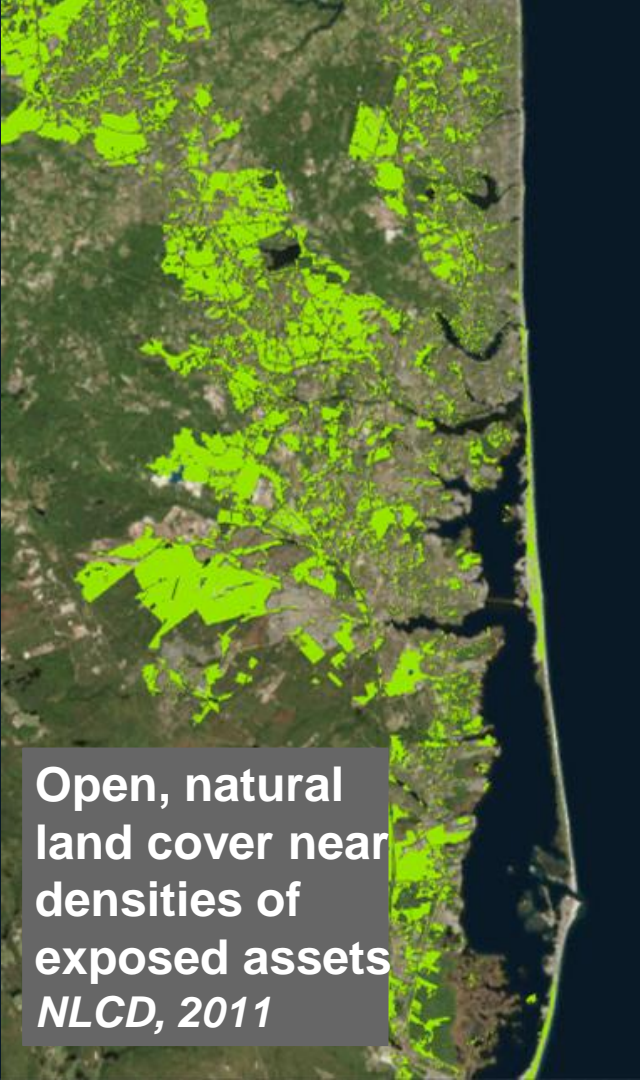




Hubs



Protected Areas
USGS PAD-US



**Open, natural
land cover near
densities of
exposed assets**
NLCD, 2011



Combined

Hubs

- Landscapes that can be used to help communities respond to and recover from flood-related events, AND
- Provide benefit to natural habitat

Community Exposure Index

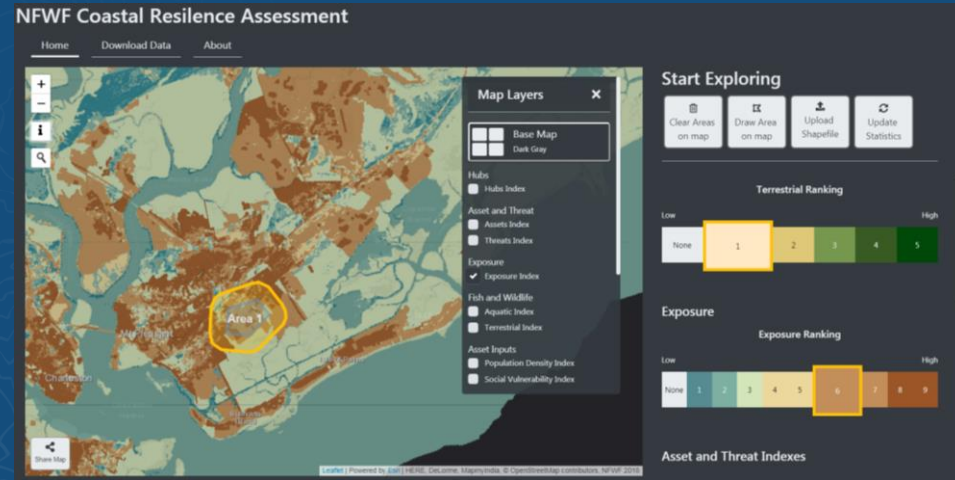
Fish & Wildlife Index

Combined Hubs → Zonal Statistics
with the Indices



Next Steps

- Web Tool for interactive analysis and data distribution
- Phase 2 - expanding the Assessment to include Puerto Rico and the U.S. Virgin Islands, Hawaii, Alaska
- Scoring and ranking proposed projects



Questions?



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