The South Atlantic Third Thursday Web Forum

Developing regional GIS-based coastal resilience assessments

Call in for audio:
866-720-8724
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Agenda

- Introduction
- Monthly topic
- Q&A and discussion
- Preview of next webinar
- Staff updates
Developing regional GIS-based coastal resilience assessments

Greg Dobson, Director of Geospatial Technology at the National Environmental Modeling and Analysis Center

2-21-2019
Developing the Regional GIS-Based Coastal Resilience Assessments

Greg Dobson, Ian Johnson, Kim Rhodes
UNC Asheville’s NEMAC

Mandy Chesnutt
National Fish and Wildlife Foundation
August 2013: DOI selected NFWF to administer its Hurricane Sandy Coastal Resiliency 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
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
- Regional assessments create a contiguous and standardized data set for US coastlines
- Targeted watershed assessments identify projects that build community and ecological resilience at local levels
Community Exposure Index
Threat Index

What are the flood-related hazards on the landscape?

Community Asset Index

What assets are exposed to harm?

= Community Exposure Index
Helps communicate where the most people and assets are exposed
Regional Fish and Wildlife Index
Aquatic Index

Data Sources:

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

Data Sources:

- NatureServe (HUC-10) priority species
- BirdLife International Important Bird Areas
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.
Resilience Hubs
How to identify and prioritize landscapes that can build resilience for both community assets and fish & wildlife?

- Large, contiguous tracts of open land
- Provide communities protection and buffering from storms
- Ideal for restoration, enhancement, and expansion projects
- Look at these places through the lens of community exposure and critical fish & wildlife habitat
Protected Areas
*USGS PAD-US*

Open, natural land cover near densities of exposed assets
*NLCD, 2011
Esri’s Green Infrastructure*
Combined Hub types → Zonal Statistics with the Indices
Resilience Hubs Rank

- High
- Low
A Quick Recap
Hubs!
Landscapes that can be used to help communities respond to and recover from flood-related events 
AND 
Provide benefit to natural habitat
Case Studies
Hurricane Sandy
U.S. Route 30 - White Horse Pike, Atlantic City

- One of the main entry points into Atlantic City
- The Pike is shown in the Critical Infrastructure input (top left)
- With surge scenarios from only Category 1 storms, the Pike could be inundated (top right)
- It shows up as highly exposed, suggesting it is impacted by many other inputs in the Threat Index
Hurricane Harvey  Buffalo Bayou, Houston

The Flood-prone Areas input correctly suggests that the Bayou and surrounding area are at risk to flooding.

The Population Density input shows densely populated areas outside of the park, as well as some areas from the Social Vulnerability input.
Hurricane Florence

Wilmington, NC

Floodwaters begin to recede on Water Street

Water St. is a part of Wilmington that is highly exposed
Resilience Hubs in and around the Wilmington area could be good locations for projects that would increase fish and wildlife habitat while also making Water Street more resilient.
Next Steps

- Finalizing an interactive web tool and data portal
- Expanding the Assessment to include Puerto Rico/U.S. Virgin Islands, Commonwealth of Northern Mariana Islands Hawaii, Alaska (2019-2020)
- Refresh the Assessment in Fall 2019/202 with any new or updated datasets
THANKS!!

Greg Dobson

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An online guide to using the Southeast and South Atlantic Blueprints

Hilary Morris
Blueprint User
Support & Communications for the Southeast and South Atlantic Blueprints

Next Third Thursday
Web Forum

3-21-2019
10:00 am
Staff updates

- Final Southeast Blueprint 3.0 officially released

- In the process of prioritizing South Atlantic Blueprint improvements
Final Southeast Blueprint 3.0 officially released

- Visit secassoutheast.org/blog to read Rua’s post
Final Southeast Blueprint 3.0 officially released

• Change since draft:
  – Slight technical adjustment to the boundary between the South Atlantic and Appalachian regions to fill in a small gap in coverage

• Improvements over previous versions:
  – Integration of new data from the Texas Crucial Habitat Assessment Tool (CHAT)
  – New data layer depicting Blueprint input and overlap areas
  – Integrated hubs and corridors layer for the South Atlantic and Appalachian subregions
  – Threats and land use change layers
  – Improved documentation
In the process of prioritizing South Atlantic Blueprint improvements
How to get involved in the Blueprint

• Join the South Atlantic LCC web community
  southatlanticlcc.org

• Connect with Blueprint staff or other cooperative members

• Explore the Conservation Blueprint
  southatlanticlcc.org/blueprint
Questions?