



**BARUCH INSTITUTE OF COASTAL
ECOLOGY AND FOREST SCIENCE**
College of Agriculture, Forestry and Life Sciences

Removing barriers to NBS in residential landscapes: Examples from South Carolina

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From here...



...to here





South Carolina has 350,000+ acres of salt marsh



The extent of salt marsh within the SASMI geography.

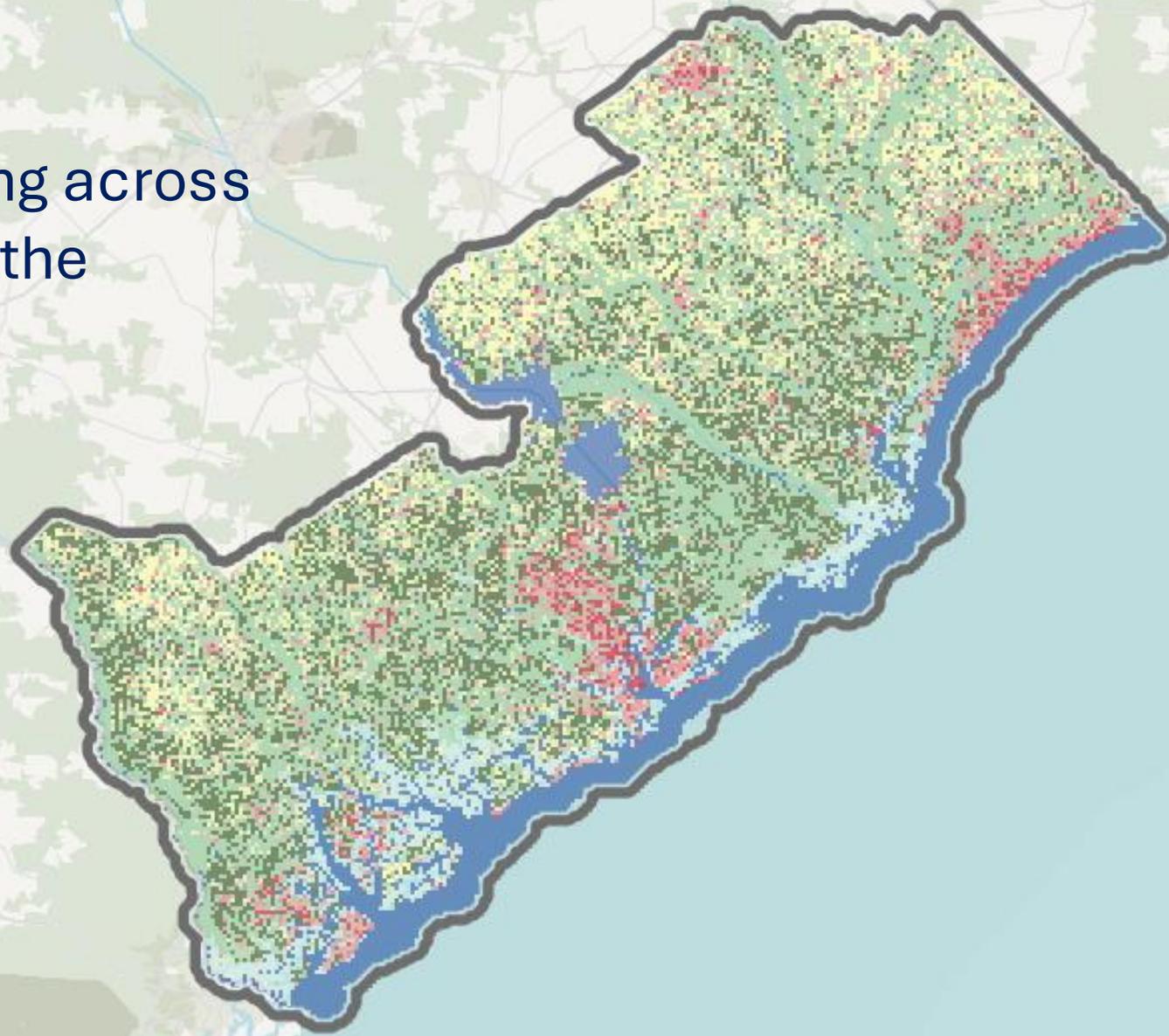
Salt marsh data are taken from NOAA's Coastal Change and Analysis Program (C-CAP).
 NOAA, Coastal Change Analysis Program (C-CAP) Regional Land Cover 1996 to 2011 (Charleston, SC: NOAA Office for Coastal Management), <https://coast.noaa.gov/digitalcoast/data/ccapregional.html>.

Protected areas are drawn from the USGS Protected Areas Database (version 3.0).
 U.S. Geological Survey (USGS) Gap Analysis Project (GAP), Protected Areas Database of the United States (PAD-US) 3.0 Spatial Analysis and Statistics: U.S. Geological Survey data release, 2022. <https://doi.org/10.5066/P9KLB85D>.



Painting courtesy of The Rice Museum of Georgetown

Development is exploding across the state, particularly in the coastal zone.



- Open Water
- Perennial Snow/Ice
- Developed Open Space
- Developed Low Intensity
- Developed Medium Intensity
- Developed High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Dwarf Scrub
- Shrub/Scrub
- Grassland/Herbaceous
- Sedge/Herbaceous
- Lichens
- Moss
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands



Photo Credit: Jared Bramblett, Mean High Water

meanhighwater.com



Ghost forests provide evidence of rapid coastal erosion

Loss of important cultural sites





Solutions have
largely focused
on gray
infrastructure
solutions







From Gray to Green Shorelines

Lack of general permit,
then onerous permitting
process was
disincentivizing nature-
based solutions

Research and education
preceded permit rollout,
paired with training
course for installers, and
financial incentives and
technical support



Photo Credit: South Carolina Department of Natural Resources

LIVING SHORELINES

[Living Shorelines 101](#)[Selecting a Living Shoreline](#)[Training & Education](#)[Case Studies](#)[Resources](#)[Home](#) / [Cooperative Extension](#) / [Living Shorelines](#) / [Living Shorelines 101](#)

Living Shorelines 101



SCDNR biologists monitor the marine life around a living shoreline. Image by Joy Brown, TNC SC

Coastal marsh habitats are at risk due to sea level rise, increased storm intensity,

[What is a Living Shoreline?](#)[Benefits of Living Shorelines](#)[History of Living Shorelines Research in South Carolina](#)[Do I need a permit?](#)





Proposed Perimeter Protection Wall



Image c18-01: EAC

Image: Surge Magazine



Ecologically
Enhanced Seawall
Enhanced
Battery Wall

Sheltered
Water

Oyster Reef

Intertidal Habitat

Breakwater

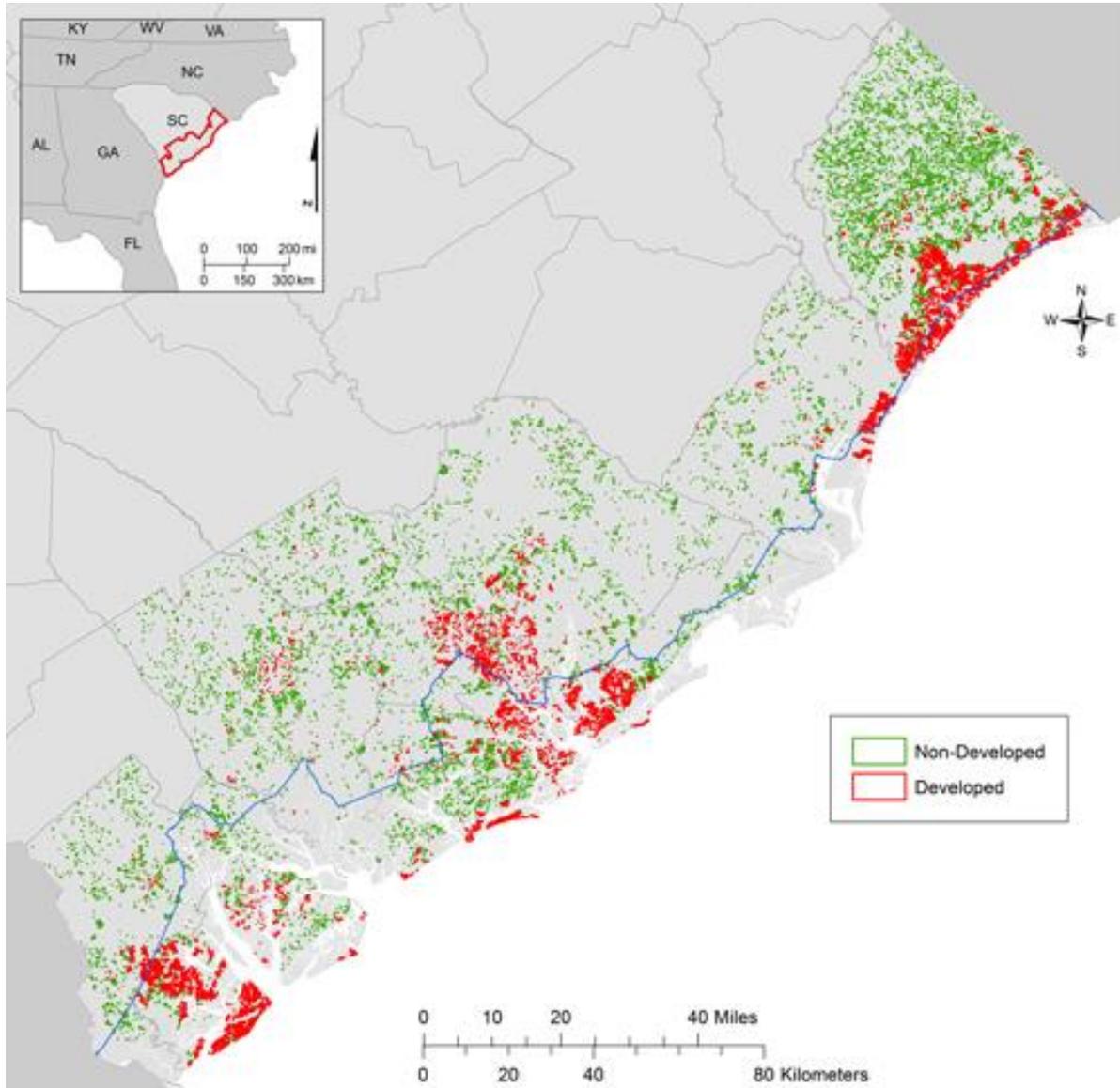
Salt Marsh

Living Breakwater Archipelago

Image: Surge Magazine

Image credit: ONE







Demonstration Projects to Normalize Shoreline Buffers

Education to Train Practitioners











NATURE-BASED
EXCHANGE

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THE POCKET GUIDE FOR

NATURAL & NATURE-BASED SOLUTIONS IN SOUTH CAROLINA



Join us in creating feasible and equitable steps for the implementation of natural and nature-based solutions in South Carolina.

Photo Credit: The Nature Conservancy

Key Challenges



MANAGING
EXPECTATIONS



COST



MAINTENANCE



LEARNING
FROM OTHERS!