



North Coast Resilience Project

THE NORTH COAST

The North Coast region of South Carolina - Horry and Georgetown counties - is famous for its sunny beaches and peaceful rivers.

With all that water, though, comes increased flood risks.

Recent coastal storms have pushed the ocean into the streets of Myrtle Beach, Cherry Grove and other communities. Heavy rains have caused the Waccamaw and Pee Dee rivers to crest above their banks and flood homes, schools, offices and even Interstate 95.



NATURAL DEFENSES FOR NATURAL RISKS

The Myth of the 100-year Flood

If you've lived in South Carolina for least five years, you've probably heard the phrase "100-year flood." It's meant to describe a catastrophe so severe that there's only a 1 percent chance of it occurring in any given year. In theory, that means we would get one such flood every 100 years.

In South Carolina, we've had four in four years.

2015, 2016, 2017 and 2018 all brought heavy rain events and named coastal storms that flooded South Carolina homes, businesses, schools and hospitals. Storm surges pushed saltwater into our drinking water intakes. Raw sewage flowed into our rivers from drowned treatment plants.

South Carolina at Risk

Twenty percent of South Carolinians live in areas at known risk from 100-year floods. Increasingly, though, floods are becoming so severe that even people outside that zone are impacted. In 2015, there were nearly 1,000 flood claims to the Federal Emergency Management Agency within Horry and Georgetown counties. Forty percent were for properties not in designated flood zones. In 2018, 388 homes were flooded in the City of Conway following Hurricane Florence. More than 50 percent were outside the flood zone.

Our waters are rising, and we need new ways to protect homes, businesses and natural areas.

A New Approach

In 2016, The Nature Conservancy launched a regional resilience effort in North Carolina, South Carolina, Georgia and Florida to educate communities on planning tools and support the development of community resilience plans. The North Coast Resilience Project (NCRP) in South Carolina is part of that effort.

The goal of the NCRP is to understand and address local flood risks in Horry and Georgetown counties. This is being done through a stakeholder-driven process that focuses on nature-based solutions. Nature-based solutions are 'natural infrastructure' that mimic natural processes or work in concert with natural systems to reduce flood, fire and/or drought risk. Examples include restoring wetlands or floodplains, building living shorelines or upsizing culverts.

The NCRP will identify site-specific projects to restore, protect and improve local streams to improve floodwater storage and drainage. Several "shovel-ready" project ideas will be provided to local governments and stakeholders, and the Conservancy will begin implementing one pilot project in 2019.

1 million

South Carolinians at risk each year from catastrophic flooding



ABOVE: Types of nature-based solutions and natural infrastructure © NOAA

Nature-based solutions incorporate both the natural environment and engineered systems that mimic or work in concert with natural systems to provide flood-, fire- and drought- risk reduction, as well as cleaner water and air.

Examples include restoring and protecting wetlands or floodplains, building living shorelines, protecting headwaters and upsizing culverts.

FLOODPLAIN ANALYSIS

The Conservancy used past storm flooding data to create GIS models for North Coast floodplains in 2017, 2035 and 2060. The maps show predicted and projected flood risk, with updated information for current land cover, including new buildings and existing open space. This more detailed picture can be used for better planning and analysis.

FOCUS GROUPS

Local stakeholder knowledge was key to determine where the biggest issues arise on the ground from flooding events. The Conservancy led focus groups of local experts in February 2018 (Horry County) and July 2018 (Georgetown County) to guide the identification of problematic areas and possible nature-based solutions to solve them.

MAKING IT HAPPEN

The Conservancy will work with the North Coast communities to implement one of the nature-based projects identified during the focus groups to help mitigate flood risk. In addition, the Conservancy will provide cost estimates for the other types of projects identified by the communities. This way, when funding opportunities become available, communities will have a “shovel-ready” list of projects to submit.

The Conservancy also is working at the state and federal level to influence post-disaster funding for natural infrastructure. We have a long-standing relationship with many federal agencies, including the U.S. Army Corps of Engineers and Federal Emergency Management Agency, and have been encouraging both agencies to place greater emphasis on natural infrastructure. We are working to unlock post-disaster funding directed towards these and other agencies for natural infrastructure. We also are working closely with state agencies that receive these funds and decide where the money should be spent.

FINDING NATURE-BASED SOLUTIONS

Data collected showed three types of unique and persistent flooding on the North Coast:

- Coastal flooding from high tides and rising seas
- Riverine flooding from swollen rivers overflowing their banks during and after storms
- Stormwater flooding in low-lying and heavily paved areas

Through the use of focus groups, the following possible nature-based solutions were identified:

- Land conservation
- Stream and floodplain restoration
- Reforestation of repetitive flooding buyouts
- Low-impact development retrofits
- Living shoreline installations

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PARTNERS

American Rivers, Boeing, City of Conway, Clemson University, Coastal Carolina University, Davis & Floyd, Ducks Unlimited, Frances P. Bunnelle Foundation, Georgetown County, Georgetown RISE, Geoscience Consultants, Horry County, Horry-Georgetown Technical College, Lowcountry Land Trust, National Oceanic and Atmospheric Administration, North American Land Trust, North Inlet-Winyah Bay National Estuarine Research Reserve, Open Space Institute, Pee Dee Land Trust, South Carolina Department of Health & Environmental Control Ocean & Coastal Resource Management, South Carolina Department of Natural Resources, US Fish and Wildlife, US Forest Service, US Geological Survey, Waccamaw Council of Governments, Waccamaw Riverkeeper, Winyah Rivers Foundation

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