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Sea Level Rise Adaptation: Successes And Challenges After One Year of Work in Eastern North Carolina

Research and monitoring activities occurring in wetlands adjacent to or nearby Point Peter Road on the eastern edge of Alligator River National Wildlife Refuge are getting a lot of attention nationally, even internationally. As the concepts of climate change and sea level rise are being brought to the forefront, scientists are moving beyond, “Is this really happening” to “So, what can be done?” The Nature Conservancy, in partnership with the U. S. Fish and Wildlife Service, has begun a project to test some ways to help sensitive ecosystems and the wildlife that depend on them adapt to this changing world. Recent vandalism to equipment on the site has caused concern over unnecessary waste and loss of valuable data. Refuge officials seek public help to stop the vandalism. As this work focuses on building resilience into the affected ecosystems for future generations, the work is important to keep our lands and waters in eastern North Carolina productive and healthy for all to enjoy.

Project Update

How to manage wildlife habitat in the face of sea-level-rise is brand new ground. The reality is that sea levels are rising. Realizing that a vast majority of the acreage comprising Alligator River National Wildlife Refuge may be under water in the next 100-150 years made this refuge a prime candidate for study. The Nature Conservancy and refuge jointly planned a project to move forward and actually try several management actions in an effort to “buy some time” for wildlife and their habitats to adapt to the rapidly changing environments. The project is being lead by TNC Project Leader Brian Boutin, coordinating closely with Alligator River National Wildlife Refuge Biologist Dennis Stewart. An initial grant from Duke Energy started the project. Since then, Boutin has coordinated other grants and partnerships to “grow” the project.

The first phase of the project involved experimental plantings of native tree species that show some resistance to salt water compared to pocosin vegetation. Bald cypress, black gum, and pond pine were planted over about 40 acres adjacent to Point Peter Road this past March. Some of the planted trees are more salt-tolerant than the existing trees. The hope is that this management strategy will slow the transition of pocosin wetlands to swamp forest, brackish marsh, or even open water.

Oyster reefs will be constructed near shore to dissipate wave energy on the shoreline. These oyster reefs are expected to slow erosion of the shoreline, improve estuarine water quality, provide near-shore aquatic habitat for numerous fishes, and sequester carbon. Monitoring

hydrology, water quality, and plant community parameters for response to management actions is an important component of the overall project. Knowledge gained from this initial project will be used to develop adaptive management strategies elsewhere on the refuge and, possibly, other locations in the region or nation.

Another phase of the project is to place water control structures in strategic locations to prevent the jetting of salt water up the canals and into these freshwater systems. Refuge staff will install the water control structures and associated culverts, after obtaining permits and approvals from the US Army Corps of Engineers, NC Division of Water Quality, and the NC Division of Coastal Management.

“We’ve had a very successful first year,” Boutin said, “And, we’re encouraged by the public support and interest we’ve seen. We have conducted several presentations to local rotary clubs and have had numerous individuals from local universities and state agencies come to eastern North Carolina just to learn about this project..”

However, there have been some isolated incidents that have caused setbacks and wasted valuable efforts. On several occasions, buoys marking locations for valuable data-gathering systems and other equipment have been tampered with, destroyed, or stolen. In addition to losing costly equipment, which wastes much needed money, the data that were collected, but not yet downloaded, are lost. This equipment is of no value to anyone, except in the field of research. And, with each incidence, the loss sets the project back weeks or months.

Refuge Manager Mike Bryant describes the project as one of “national importance” and the vandalism as “pointless”. “We’ve always been able to count on our neighbors for help when times get tough. In eastern North Carolina, we all depend on the land and water - whether to put food on our tables, to provide our paychecks, or simply to nourish our souls. This project is one way we are attempting to learn new ways to keep our land and water more productive for a longer period of time.”

“If we cannot appeal to the good nature of folks who use the refuge to show respect for our work and the costly equipment we use, we will have no choice but to close project areas, such as Point Peter Road, to all public use,” Bryant added. “But, certainly, that would be a last resort.”

Anyone with information about any vandalism relating to the Point Peter Road Sea-level rise Project is encouraged to contact Refuge Law Enforcement Officer Jay Eddy at 252-216-8724 or call the refuge office at 252-473-1131. For more information about this project, please visit <http://www.nature.org/wherewework/northamerica/states/northcarolina/> or contact Brian Boutin at 252-441-2525.

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