ENHANCING ENVIRONMENTAL STEWARDSHIP

MATTAMUSKEET DRAINAGE ASSOCIATION

WATERSHED RESTORATION PLAN

CURRENT CONDITIONS:
Decades of modifications to the natural hydrology of the landscape have increased the amount of surface runoff entering into the historic shellfish waters of Otter Creek, Berry's Bay and Pamlico Sound.

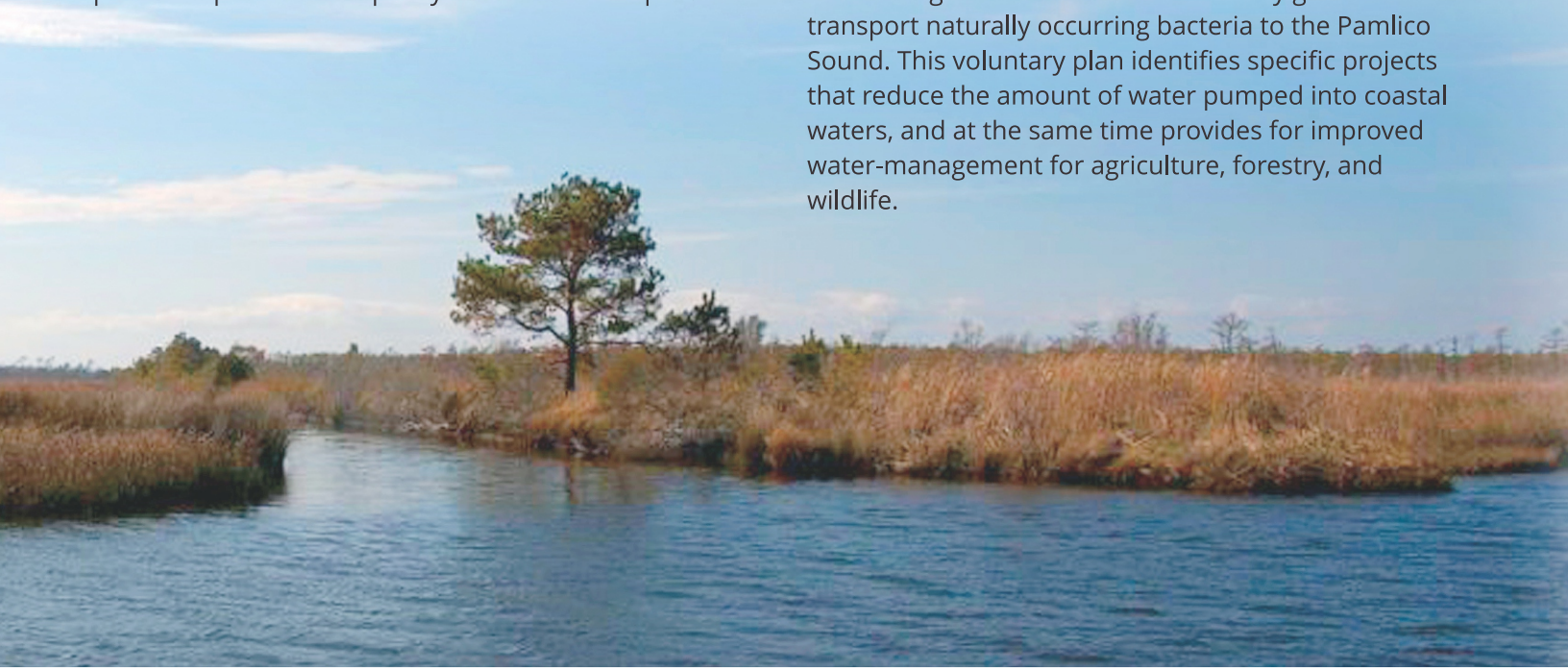
RECOMMENDED ACTION:
Replicate as much as practical natural hydrology by designing and managing drainage to flow into restored wetlands so as to reduce the amount of water pumped into Pamlico Sound.

BACKGROUND

In 1985, the shellfishing waters of Otter Creek, Berry's Bay and Pamlico Sound near 5th Avenue drainage canal were closed for harvest as a result of unacceptable levels of bacteria. They remain closed today. These waters are adjacent to N.C. Wildlife Resources Commission game lands and the Mattamuskeet Drainage Association, a 42,500-acre agricultural drainage district. A land-based watershed restoration plan to improve water quality has been developed.

THE PLAN

The Mattamuskeet Drainage Association is working with the N.C. Coastal Federation, researchers from N.C. State University and other stakeholders to carry out a watershed restoration plan that was developed with a grant from the N.C. Division of Water Quality. These partners recognize the need to reduce the volume of drainage water that is pumped into shellfish waters. The networks of canals and ditches throughout the drainage association and the nearby gamelands transport naturally occurring bacteria to the Pamlico Sound. This voluntary plan identifies specific projects that reduce the amount of water pumped into coastal waters, and at the same time provides for improved water-management for agriculture, forestry, and wildlife.



The Mattamuskeet Drainage Association restoration plan targets long-term solutions to create enhanced water management strategies for landowners, while improving water quality in the Pamlico Sound.

RESTORATION PLAN DEVELOPMENT

- Discussions began in 2003 with association landowners, the federation and the Hyde County Cooperative Extension to address water quality concerns and new ideas for water management.
- N.C. State University began modeling these conceptual plans to evaluate their effectiveness and feasibility.
- A stakeholders group which includes the Natural Resources Conservation Service and other adjacent landowners was formed to rank and prioritize project ideas.
- The plan set forth outlines a series of discrete and measurable steps that can be taken to improve water quality. The plan will continue to be a working document. The objectives listed below will be evaluated as implementation occurs and will allow for continued input and project ideas from involved stakeholders.

ACTIONS AND OBJECTIVES

1. **Reduce pumped volume to coastal waters**
   Twelve projects focused on reducing the amount of pumped stormwater entering the sound have been identified. New projects will continue to be identified, funded and implemented. As a way of increasing effectiveness of these individual projects, capital improvements to the association (including coring roads and dikes around restoration projects) will be a parallel component restoration efforts: Goals for 5-, 10- and 15-year reductions in pumped volume will be set by project partners.
2. **Continue managing current projects**
   All current projects, stakeholder meetings and water quality testing will continue to ensure success of the plan.
3. **Meet bacteria reduction goals at Shellfish Sanitation stations**
   The state's water quality sampling stations at Otter Creek, Berry's Bay and the 5th Avenue drainage canal will be maintained and monitored. Through the objectives outlined in this plan, the amount of association drainage that can be pumped into the sound without causing a bacterial shellfish impairment will be determined.
4. **Ensure compliance and maintenance of the Engelhard Wastewater Treatment System**
   The wastewater treatment plant for the town of Engelhard must be repaired and updated because of its proximity to the 2nd Avenue pump station. This plan proposes to explore a variety of solutions, which includes alternative plant designs more suited to the soils of the area.
5. **Measure success and adapt plan based on results**
   The association's restoration plan is a working document and will be adapted based on monitoring results received from project partners.

What does this mean for association members?

This is a *voluntary* program to reduce pumped drainage, but the goal of the plan is to restore water quality through wetland restoration and water reallocation. The proposed projects will be implemented with grant funds and will include capital improvements to association infrastructure. Benefits to landowners include:

- Significant savings in association pumping costs.
- Road improvements through project implementation.
- Enhancement of water management capabilities for waterfowl impoundments and agricultural uses.
- Improved coastal water quality supporting oysters, blue crabs, shrimp and other fisheries.
- Retention of perimeter pumps for use during storm events.
- Involvement with non-traditional partners.

MOVING FORWARD: COMPLETED & PENDING PROJECTS

The N.C. Coastal Federation and association landowners have already partnered to implement several projects identified in this plan. This includes a Shorebird Project that enhanced 600 acres of wetlands to create habitat for migrating shorebirds. Three other projects currently underway will enhance nearly 3,000 acres of wetlands and enable them to store pumped drainage. Future plans call for an additional 9,000 acres of wetlands restoration.

PROJECT ACKNOWLEDGEMENTS

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