

# Progress Report

APNEP Transition to Ecosystem-Based Management &  
CCMP Update

APNEP STAC Meeting  
November 2010  
Kinston, NC

# Mission:

*To identify, restore, and protect the significant resources in the Albemarle-Pamlico estuarine system.*

# Overview of Process

APNEP CCMP Update 2010

**Ecosystem Based Management Approach**

**Proposed CCMP Structure & Content**

# CCMP

## Process Objectives

Develop a CCMP that identifies actions needed to protect and restore Albemarle-Pamlico estuarine system, based on science and with measurable outcomes;

Determine accountability for achieving results including performance, effectiveness, and the efficient use of funds spent on Albemarle-Pamlico estuarine system; and

Promote public engagement, awareness and communication to build support for a long-term strategy and positive environmental change.

# EBM Transition Team

Monthly meetings since January 2010 to guide the development of a framework for EBM integration into the 2010 CCMP and monitoring plan.

**Team Members: Dr. Jack Thigpen, Dr. Kirk Havens, Marjorie Rayburn, Dr. Carl Hershner, Diane Reid, Pete Campbell, Dr. Molly Ruggero, Tom Stroud, Dr. Wilson Laney, and APNEP Staff**

**Feedback from Policy Board, STAC , CAC, EPA, & NCDENR**

# CCMP Structure: Proposed Changes

APNEP CCMP Update 2010

The 1994 CCMP included five priority issues (presented as individual plans): **Water Quality, Vital Habitats, Fisheries, Stewardship, and Implementation**

New plan will be structured around addressing **5 questions** regarding the estuarine system.

Proposing the **three goals** that will be achieved through implementation actions addressing **5 priority issues**.

# 5 Questions

- 1: **What is a healthy Albemarle-Pamlico Estuarine System?**
- 2: **What is the status of Albemarle-Pamlico Estuarine System?**
- 3: **What are the biggest threats to Albemarle-Pamlico Estuarine System?**
- 4: **What actions should be taken that will move us from where we are today to a healthy Albemarle-Pamlico Sounds by 2020?**
- 5: **What and where are the priorities?**

# **1: What is a healthy Albemarle-Pamlico Estuarine System?**

**Goal 1: A region where human communities are sustained by a functioning ecosystem**

**Goal 2: A region where aquatic, wetland, and upland habitats are protected, enhanced, or restored, and support viable populations of native species**

**Goal 3: A region where water quantity and quality maintain ecological integrity**



# Goals & Outcomes

**Goals** are qualitative statements of what a healthy ecosystem should look like.

**Outcomes** have been developed to help translate broad goals into measurable characteristics of ecosystem health.

**Indicators** are physical, biological, or chemical conditions that can be measured to provide data about the status of ecosystem.

**Targets** specify the desired ecosystem condition in a way that defines success.

# Goals & Outcomes

**Goal 1: A region where human communities are sustained by a functioning ecosystem**

*Waters are safe for personal contact (exposure to pathogens)*

*Designated surface and ground water supplies are safe for human consumption*

*Management of surface hydrologic regimes to sustain regulated human uses.*

# Goals & Outcomes

**Goal 1: A region where human communities are sustained by a functioning ecosystem**

*Fish and game (regulated harvested species) are safe for human consumption*

*Opportunities for recreation and access to public lands and waters are protected and enhanced*

An ecosystem that sustains uses such as agriculture, aquaculture, fisheries, forestry while maintaining diverse natural resources (ecological integrity)

## Goals & Outcomes

**Goal 2: A region where aquatic, wetland, and upland habitats are protected, enhanced, or restored, and support viable populations of native species**

*The biodiversity, function, and populations of species in aquatic communities are protected, restored, or enhanced*

*The biodiversity, function, and population of species in wetland communities are protected, restored, or enhanced*

*The biodiversity, function, and population of species in upland communities are protected, restored, or enhanced*

## Goals & Outcomes

**Goal 2:**      **A region where aquatic, wetland, and upland habitats are protected, enhanced, or restored, and support viable populations of native species**

*Extent and quality of estuarine and near-shore marine habitats maintain, restore, or enhance biodiversity and ecosystem function*

*Extent and quality of freshwater habitats maintain, restore, or enhance biodiversity and ecosystem function*

*Extent and quality of upland habitats maintain, restore, or enhance biodiversity and ecosystem function*

## Goals & Outcomes

**Goal 2:**      **A region where aquatic, wetland, and upland habitats are protected, enhanced, or restored, and support viable populations of native species**

*Non-native species do not significantly impair native species' viability or function, or impair habitat quality, quantity, and the processes that form and maintain habitats*

## Goals & Outcomes

**Goal 3: A region where water quantity and quality maintain ecological integrity**

*Support ecological integrity through preservation or restoration of historic\* hydrologic regimes*

*Nutrients and pathogens do not harm the species that depend on the waters*

*Toxics in waters and sediments do not harm the species that depend on the waters*

*Sediments do not harm the species that depend on the waters*

## Goals & Outcomes

**Goal 3: A region where water quantity and quality maintain ecological integrity**

*Support ecological integrity through preservation or restoration of historic\* hydrologic regimes*

*Nutrients and pathogens do not harm the species that depend on the waters*

*Toxics in waters and sediments do not harm the species that depend on the waters*

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# 5 Questions

- 1: What is a healthy Albemarle-Pamlico Estuarine System?
- 2: **What is the status of Albemarle-Pamlico Estuarine System?**
- 3: What are the biggest threats to Albemarle-Pamlico Estuarine System?
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- 5: What and where are the priorities?

## 2: What is the status of Albemarle-Pamlico Estuarine System?

### *Ecosystem Assessment*

*APNEP has been working to link these goals to specific measures of ecosystem health. The development of a clear set of measurable indicators and benchmarks for the health of Albemarle-Pamlico ecosystem is a new effort that will enable us to assess whether progress is being made, adjust our actions, and report back to the public.*

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### **3: What are the biggest threats to Albemarle-Pamlico Estuarine System?**

#### *Basic Threat Assessment*

*Alteration and loss of habitat and the ongoing input of pollution are the top two immediate and pervasive threats facing the Albemarle-Pamlico ecosystem. Habitat alteration has occurred throughout the estuaries, rivers, forests, and shorelines of the rivers and sounds, and thousands of pounds of additional pollution enter the waterways on a daily basis. The entire region faces challenges from a growing human population and a changing climate that will exacerbate the many existing stress and pressures on Albemarle-Pamlico Sounds*

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## 4: What actions should be taken that will move us from where we are today to a healthy Albemarle-Pamlico Sounds by 2020?

### *Strategic Priorities*

*A: Identify*

*B: Protect*

*C: Restore*

*D: Prevent water pollution*

*E: Stewardship*

For each strategy there will be description of the current situation and rationale for taking action, key objectives for attaining desired ecosystem outcomes, and near-term actions to move the region forward. The strategic priorities and their associated actions provide a regional starting place.

## 4: **What actions should be taken that will move us from where we are today to a healthy Albemarle-Pamlico Sounds by 2020?**

**A: Identify** the gaps in our knowledge of the ecosystem processes, structures, and functions that sustain Albemarle-Pamlico. Activity work or provide information to make informed management decisions. Implement a focused scientific program with priorities for monitoring and research to improve understanding of the ecosystem and the effectiveness of implementation actions is essential to the ecosystem-based management.

**B: Protect** the intact ecosystem processes, structures, and functions that sustain Albemarle-Pamlico ecosystem. Avoiding problems before they occur is the best and most cost-effective approach to ecosystem health.

## 4: **What actions should be taken that will move us from where we are today to a healthy Albemarle-Pamlico Sounds by 2020?**

**C: Restore** the ecosystem processes, structures, and functions that sustain Albemarle-Pamlico. Protecting what we have left is not sufficient, and significant effort at an unprecedented scale is needed to undo past damage.

**D: Prevent water pollution at its source.** In the past many efforts have focused on cleaning up degraded waters, but insufficient resources have been devoted to stopping pollutants before they reach our rivers, sounds, habitats, and species.





**4: What actions should be taken that will move us from where we are today to a healthy Albemarle-Pamlico Sounds by 2020?**

**E: Stewardship.** Increase and sustain coordinated efforts for community engagement, planning, communication, outreach, and education to increase public awareness and encourage individual stewardship. Greater awareness, along with active citizen support for planning, policy and behavioral changes, is critical for maintaining ecosystem processes, structures, and functions that sustain Albemarle-Pamlico ecosystem and its human communities.

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## **5: What and where are the priorities?**

**To Be Determined**

Priorities and actions will developed though extensive collaboration between natural resource and environmental management agencies, scientists, and local community members who will undertake much of the responsibility for implementation.