



Clean Waters and SAV: Making the Connection

Technical Workshop

DEPARTMENT OF ENVIRONMENTAL QUALITY

Marine Fisheries

Workshop Purpose | Anne Deaton | March 4, 2020



Coastal Habitat Protection Plan (CHPP)

Origin and Purpose

Fisheries Reform Act of 1997 (G.S. 143B-279.8)

Required Department of Environmental Quality (DEQ) to draft the plan

Purpose

Long-term enhancement of coastal fisheries by addressing habitat and water quality needs of fishery species

Requirements

Environmental Management (EMC), Coastal Resources (CRC), and Marine Fisheries (MFC) commissions must:

- recommend actions to protect and restore fish habitats
- approve and implement those recommendations
- review and revise the at least once every five years



Coastal Habitat Protection Plan

What is it?

Summarizes the latest science to aid Department divisions and commissions in management of fish habitat and water quality.

Coastal Habitat Protection Plan

Habitats

- Description
- Ecological significance
- Status

Threats

- Physical
- Hydrological
- Water Quality

Priority Issues and Recommendations

- Supported by science

Recommended Actions for Priority Issues

- Developed by DEQ staff
- Five year plans
- Reviewed by the CHPP Steering Committee
- Adopted by the commissions



Coastal Habitat Protection Plan

Priority Issues of the 2021 Update



- 1) Submerged Aquatic Vegetation protection and restoration, with focus on water quality improvements**
- 2) Wetland protection and enhancement, with focus on nature-based methods
- 3) Habitat monitoring to assess status and trends
- 4) Environmental rule compliance
- 5) Reducing “inflow and infiltration” to improve water quality



Coastal Habitat Protection Plan

Draft Timeline

Task to Complete for CHPP Steering Committee Review	Due Date
Introduction and Implementation Progress	May 2020
Climate Change and Coastal Resiliency	May 2020
Priority Issue Papers	
<i>SAV Protection and Restoration Through Water Quality Improvements</i>	May 2020
<i>Environmental Rule Compliance</i>	May 2020
<i>Wetland Protection and Enhancement</i>	Oct 2020
<i>Reducing Inflow and Infiltration</i>	Oct 2020
<i>Habitat Monitoring to Assess Status and Trends</i>	Oct 2020
Recommended Actions	Oct 2020
Overall Plan Approval	Jan-Mar 2021

Submerged Aquatic Vegetation Distribution in North Carolina estuaries



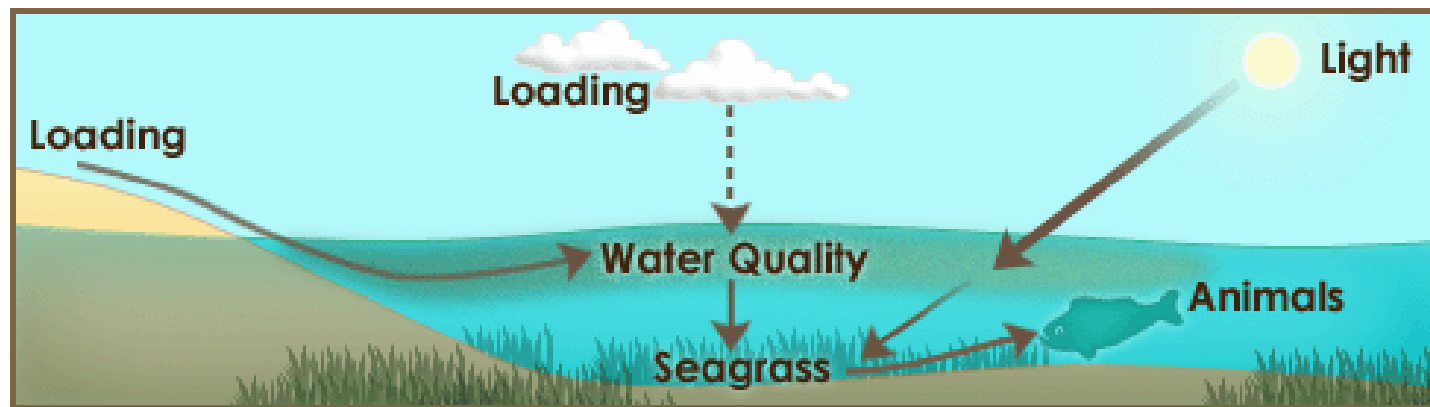
- NC has more SAV than any other state on the east coast
- Potential SAV habitat ~ 190,000 acres
- Provides critical fish nursery and foraging areas for ~ 40 fishery species
- Stabilizes sediment, cycles nutrients, takes up carbon dioxide



Submerged Aquatic Vegetation

Reasons for Concern

- The greatest threat to SAV is water quality impairment - suspended sediment and nutrients
- NC has impaired waters – multiple sources
- Coastal development is increasing
- Climate is changing – expected increase in severe rain events and sea level rise



Submerged Aquatic Vegetation Albemarle Sound

Davis and Brinson 1990

“The Perquimans River, beginning in Hertford, was the closest thing to an aquatic botanist’s paradise”

Sara Winslow, grew up on the Perquimans River

1930s and 1940s - SAV was in all the rivers on the northern Albemarle. Disappeared following Hurricane Hazel, 1954. Resurged in the 1990s -2000s. Began declining after Hurricane Isabel in 2003. Now mostly gone.

Terry Pratt, grew up on the Chowan River

1990s- 2000 - SAV was everywhere in the Chowan River. Now there is none.



Submerged Aquatic Vegetation

Pamlico River



Jess Hawkins, grew up on Pamlico River

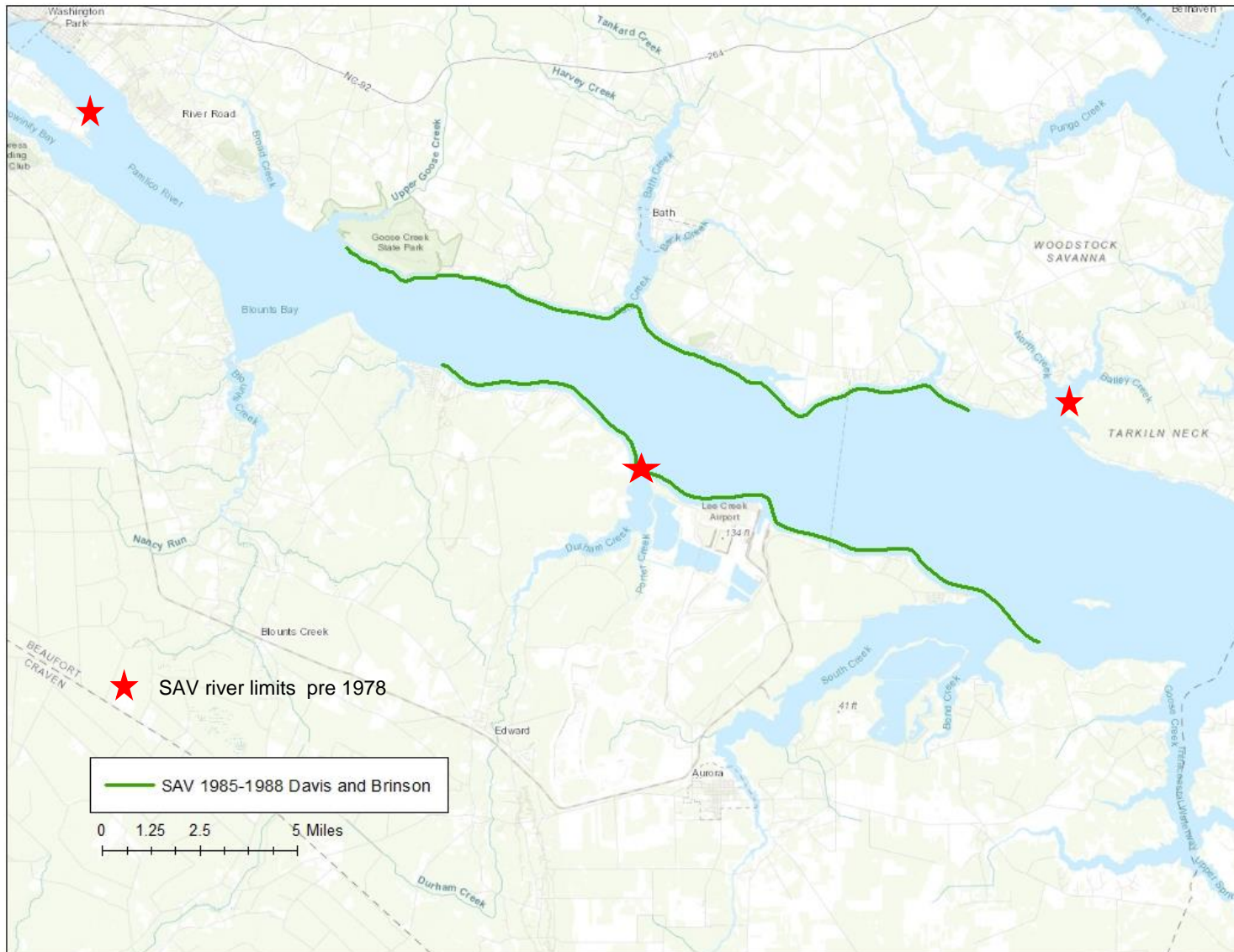
- **1960s** - grass occurred all along the river from Mauls Point to Bayview, past Bath as well as on the south shore.
- Extended 50-100 yd out into the river.
- Now its gone.

Davis and Brinson 1990

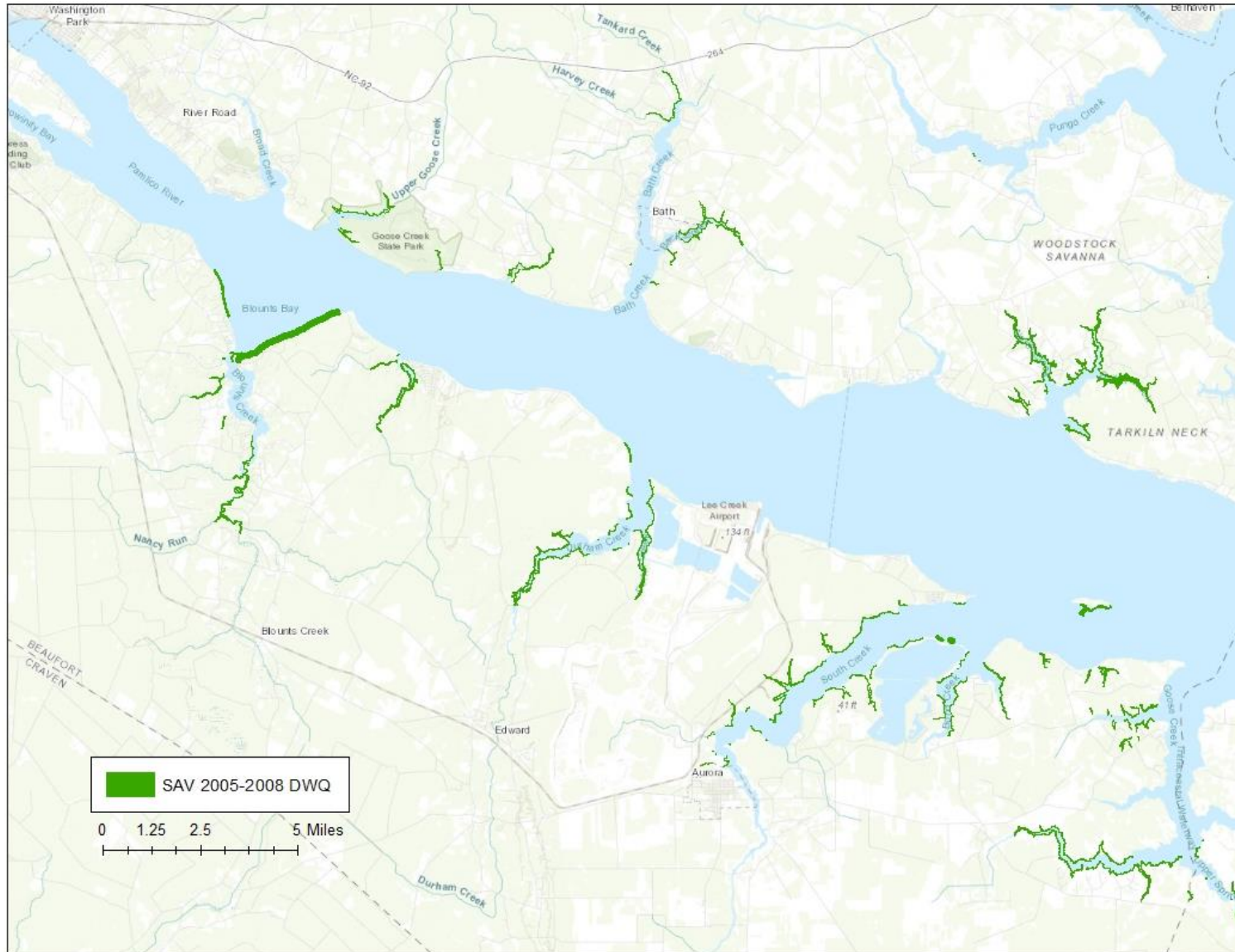
- **1973-1975** – extensive and found to 1.5 m depth. From Washington to Durham Creek/ North Creek. Five major species. Wild celery dominant
- **1979** - SAV biomass disappeared. Only widgeon grass found in small amounts.
- **1985-1988** – Scattered clumps of mostly widgeon grass; smaller tributaries had denser SAV in upper reaches; larger tributaries had minimal SAV



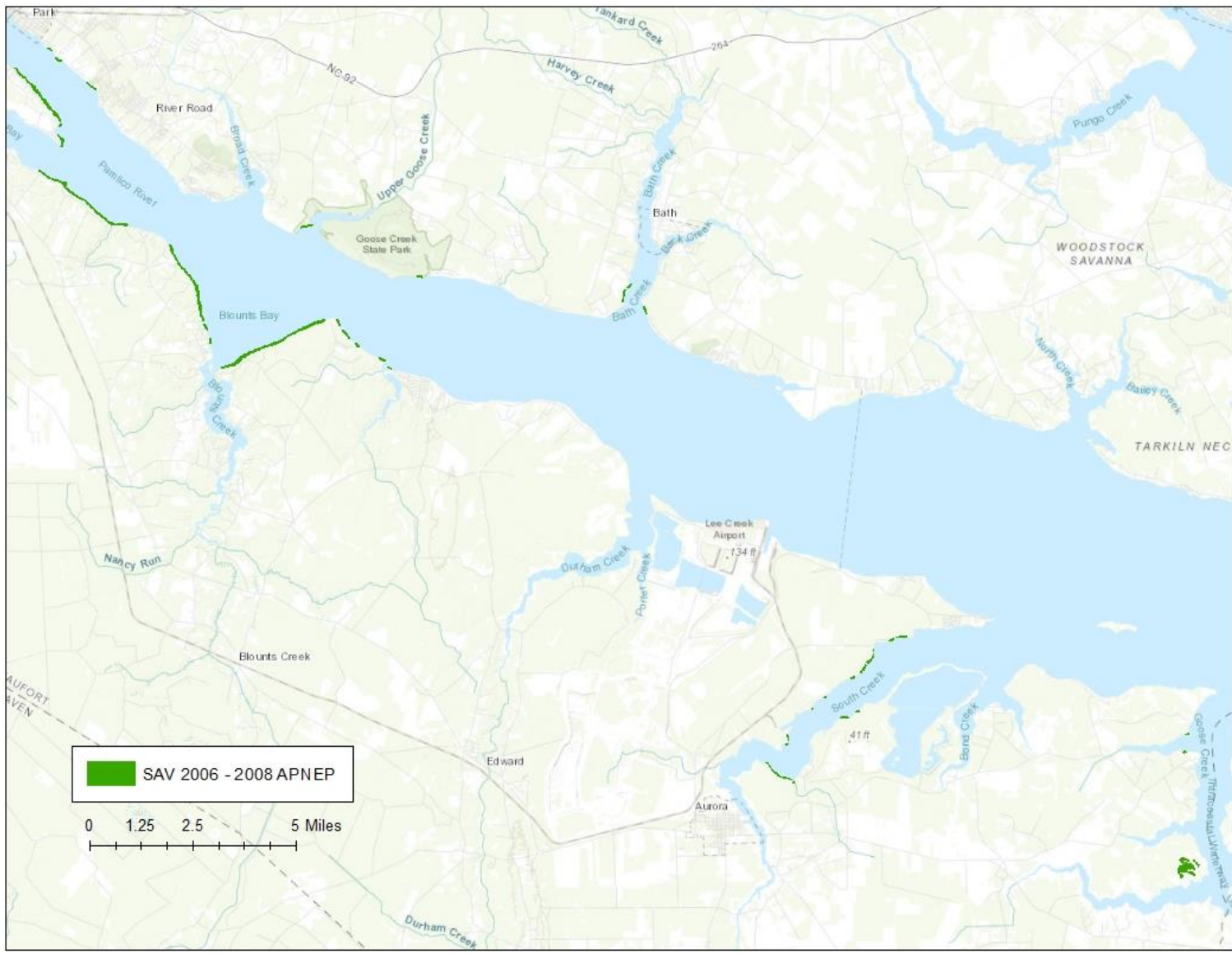
Submerged Aquatic Vegetation Pamlico River pre 1978 and 1987-89



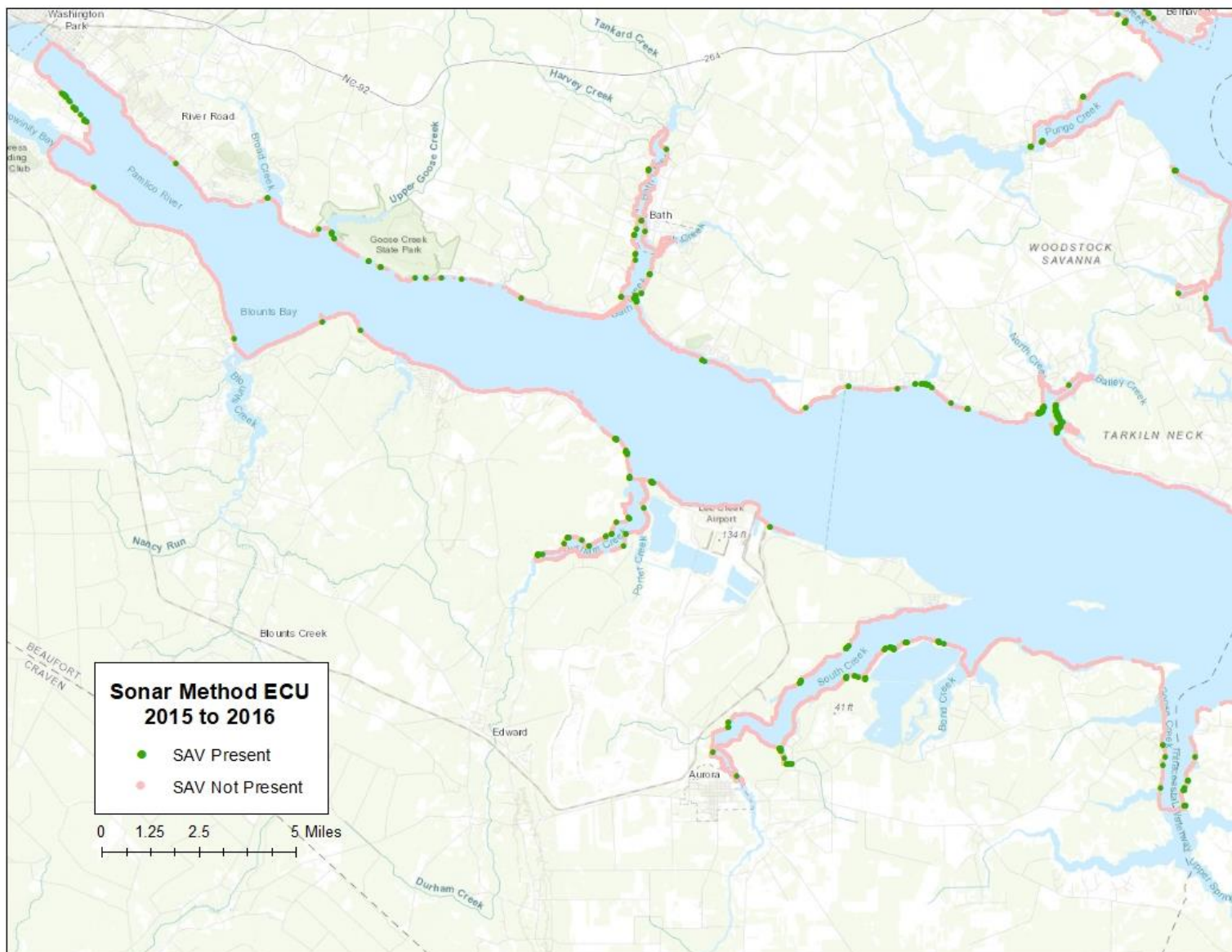
Submerged Aquatic Vegetation Pamlico River 2005-2008



Submerged Aquatic Vegetation Pamlico River 2007-2008



Submerged Aquatic Vegetation Pamlico River 2015-2016



Submerged Aquatic Vegetation

Workshop Goal and Outcomes

Goal

Participants will provide input on developing a collaborative strategy to preserve and improve water quality suitable for SAV, for inclusion in the CHPP

Expected Outcomes

- Communicate scientific links between SAV health and water quality and how other states have successfully improved water quality and SAV
- Identify gaps and priorities for monitoring SAV and water quality needed to take long term actions
- Identify near-term immediate strategies that could be taken

