

ALBEMARLE-PAMLICO NATIONAL ESTUARY PARTNERSHIP

***Annual Work Plan
for the
Cooperative Agreement Between
The United States Environmental Protection Agency
and
North Carolina Department of Environment and Natural Resources
in
Cooperation with the
Commonwealth of Virginia
for
October 1, 2014 - September 30, 2015***



**Approved by the
APNEP Policy Board on
May 20, 2014
DENR Green Square / Conference Call
Raleigh, NC**

U.S. EPA Agreement CE-95451210

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Required Cooperative Agreement Related Contents in this Document:

- A progress report detailing accomplishments in FY 2014 is provided on pages 8 through 24.
- The FY 2015 Proposed Work Plan items are presented on pages 26 through 33.
- The FY 2015 Proposed Work Plan budget is presented on page 42.
- Administrative and financial information items are presented on pages 34 through 47.

Purpose: The purpose of this cooperative agreement is to provide support to the North Carolina Department of Environment and Natural Resources (NCDENR) from the US Environmental Protection Agency (EPA) for continuing implementation of the unique management strategies and actions recommended in the Albemarle-Pamlico National Estuary Partnership's (APNEP) 2012-2022 Comprehensive Conservation and Management Plan (CCMP) and support for the APNEP mission to identify, restore and protect the significant resources of the region.

Funding: This work plan and the associated grant application represent a funding request of \$538,000 for year 1 (10/1/14-9/30/15) under a new cooperative agreement for the time period of October 1, 2014 to September 30, 2019. The associated grant application (SF424) will result in the new Cooperative Agreement.

The existing Cooperative Agreement CE-95451210 will expire on September 30, 2016 and all remaining funds will be directed towards CCMP implementation projects. It is anticipated that all required match under this agreement will have been met by September 30, 2014.

Period of Performance:

The period of performance under the current Cooperative Agreement (*CE-95451210*) is from October 1, 2009 through September 30, 2016.

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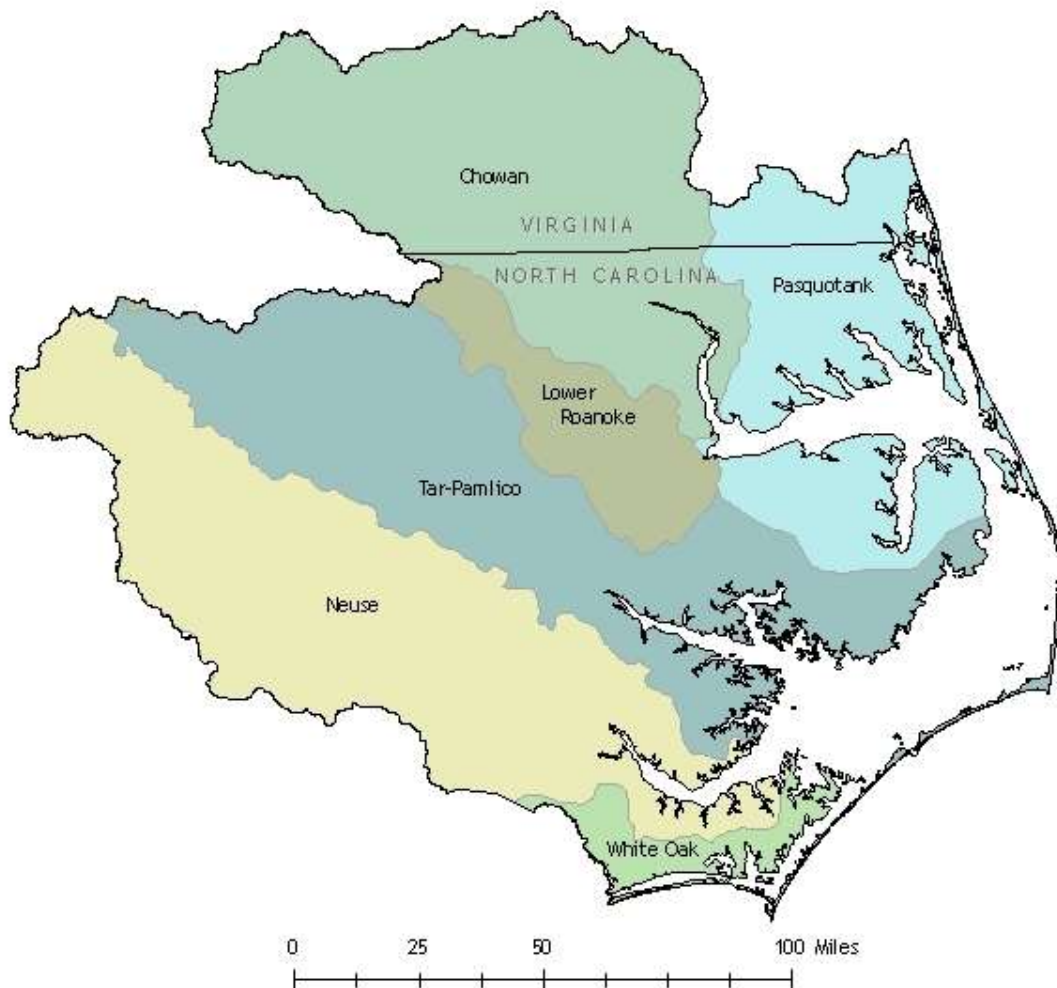
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INTRODUCTION

The Albemarle and Pamlico Sounds comprise the nation's largest lagoonal estuarine system. The system is composed of eight sounds and five major river basins draining over 30,000 square miles of watershed in North Carolina and Virginia. The sounds, rivers, creeks, wetlands and terrestrial areas provide habitat for an abundance of animal and plant species. People depend on the system for residential and resort development, food, recreation, mining, forestry, agriculture, business, and industry.

The Albemarle-Pamlico National Estuary Partnership (APNEP) is a part of the U.S. Environmental Protection Agency's (EPA) National Estuary Program (NEP). It was one of the first programs established under amendments to the Clean Water Act in 1987. APNEP's initial Comprehensive Conservation and Management Plan (CCMP) was ratified by the Governor of North Carolina and approved by the EPA in November 1994. A revised CCMP was approved in March 2012 by the APNEP Policy Board. The CCMP advances an ecosystem-based management (EBM) paradigm and is intended as a practical, cost-effective and equitable approach to managing the valuable resources of the Albemarle-Pamlico region.



Ecosystem-Based Management Approach

Ecosystem-based management (EBM) is based on the tenet that managing natural resources from a systems perspective increases the likelihood of success by forging more effective connections among humans, nature, science, and management actions. Before 2012, APNEP worked with limited resources to integrate and implement EBM concepts and tools within the program and with its local, state, and federal partners, albeit in a piecemeal fashion. Given the relative complexity and increased resources required up front to implement EBM in full, APNEP staff began actively working toward a paradigm change in 2008 with the APNEP Policy Board, advisory committees, and partners.

This activity culminated in March 2012 with the adoption of a new CCMP based on EBM principles to replace the original 1994 CCMP. As implementation of this FY 2015 Work Plan begins, APNEP anticipates completing the development of its ecosystem indicators and monitoring strategy to support the new EBM-based CCMP. With a new CCMP established for a ten-year planning horizon, this work plan includes a proposal to support activities of the CCMP Implementation Workgroups for actions that support the desired ecosystem and management outcomes.

Ecosystem-Based Management (EBM) is a management approach¹ that:

- Is concerned with the ecological integrity that sustains both human and natural resources systems.
- Integrates ecological, social, and economic goals and recognizes humans as key components of the ecosystem.
- Considers ecological, not just political, boundaries.
- Addresses systems and the complexity of natural processes and uses adaptive management to reduce risks related to decisions and actions.
- Engages multiple stakeholders in a collaborative process to define problems and find solutions providing mutual benefit.

¹ http://www.ebmtools.org/about_ebm.html



AUTHORITY

Federal Water Pollution Control Act

The National Estuary Program (NEP) was established by Congress in 1987 to improve the quality of *Estuaries of National Significance*. The Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*), Section 320 directs EPA to develop plans for attaining or maintaining water quality in an estuary. This includes: protection of public water supplies; the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife; allowance of recreational activities in and on water; and control of point and nonpoint sources of pollution to supplement existing controls of pollution. Each program establishes a Comprehensive Conservation and Management Plan (CCMP) to meet the goals of Section 320.

Comprehensive Conservation and Management Plan

In 1987, Congress designated the Albemarle-Pamlico Estuarine System as an *Estuary of National Significance* and thus began a comprehensive study effort, entitled the Albemarle-Pamlico Estuarine Study (APES). The result of this process was the APNEP CCMP. The initial CCMP was developed over a seven-year period by representatives from private and public sectors, including government, industry, business, environmental interest groups, and municipal officials. The plan is a guide for environmental stewardship of the Albemarle-Pamlico estuarine system. The CCMP reflects the input of people from the region that will be affected by the plan's recommendations. The CCMP seeks to balance the need for economic growth in region with the need to secure the environmental future of the region. Approved on March 14, 2012, the new CCMP replaces the original 1994 document.

North Carolina Governor's Executive Order #133

On November 5, 2012, North Carolina Governor Beverly Eaves Perdue issued Executive Order # 133: *Albemarle-Pamlico National Estuary Partnership*. This Executive Order was developed after more than two years of program review and ecosystem assessment and the development of a new CCMP. This Executive Order replaces Executive Order # 122 (2007) and provides the operational advisory framework for the partnership office and support for the EBM approach. A copy of the current Executive Order is available from the APNEP office at 1601 MSC, Raleigh, NC 27699 and at www.apnep.org

APNEP Office

The APNEP Office coordinates and facilitates the implementation and advancement of the CCMP, the APNEP mission, and the activities of the Policy Board and Advisory Committees. The APNEP Office serves as a conduit for information between the Policy Board, Advisory Committees, state and federal agencies, local governments, tribes, academia, and the public. The main office is located in the Office of Land and Water Stewardship within the Office of the Secretary of the NC Department of Environment and Natural Resources in Raleigh, North Carolina, with additional program personnel in Washington, North Carolina and Virginia Beach, Virginia.



Policy Board

This Policy Board is the main advisory body for APNEP. It was established by Executive Order (#133) to advise, guide, evaluate and support the CCMP implementation process and advance the CCMP and its management actions, and to ensure the highest level of collaboration, coordination and cooperation among state and federal agencies, local governments, the public and various interest groups. The Policy Board consults with the advisory committees and the APNEP Office for recommendations pertaining to implementation of CCMP actions at the regional and local levels and the coordination and development of research and monitoring priorities. A major duty of the Policy Board is to evaluate the relevance of the CCMP and to make recommendations to address emerging issues that may affect the significant natural resources of the Albemarle-Pamlico estuarine system. The Policy Board, in cooperation with the APNEP Office, develops an annual report, budget and work plan.

Science and Technical Advisory Committee

A **Science and Technical Advisory Committee** (STAC) was established to provide independent advice to the Policy Board and the Implementation Committee on scientific and technical issues, including ecosystem assessment and monitoring in support of CCMP implementation. The revised STAC held its first meeting during November 2012 in Manteo, North Carolina.

Implementation Committee

An **Implementation Committee** is currently being established to work with the Policy Board on CCMP implementation. The Implementation Committee will be comprised of representatives from approximately 13 implementation workgroups, each of which will advance a discrete set of related CCMP actions. Members of the Implementation Committee will serve as liaisons to agencies, organizations, and other workgroups regarding CCMP implementation. Information on each of the workgroups is located on the APNEP website (www.apnep.org).



FY 2014 PROJECTS & ACTIVITIES

The following provides an update on activities and projects that APNEP has been involved in since the last annual work plan report (April 30, 2013). All projects that involved contracts or grants are summarized in the table on pages 37 - 40.

APNEP Administration & Indirect Costs (ongoing)

For more detail see Administration and Financial section.

CCMP Component:	All
CCMP Actions:	All
CCMP Outcome:	All
Intended Programmatic Output:	Program administration, partnership building, CCMP implementation
Intended Programmatic Outcome:	CCMP implementation
Status:	Ongoing
Estimated Cost:	\$304,731 direct and \$29,043 indirect costs @13.3%

Advisory Board and Committees Support

The key element of CCMP implementation is active citizen participation through the Policy Board and each of the two Advisory Committees. Funds were used to support meetings, speakers, and materials as needed.

CCMP Component:	All
CCMP Actions:	All
CCMP Outcome:	All
Programmatic Output:	Partnership building, outreach, prioritizing CCMP implementation
Programmatic Outcome:	Renewed public involvement
Status:	Ongoing, Implementation workgroups and committee being formed
Estimated Cost:	\$ 2,000
Estimated Leverage:	To be determined

CCMP/ EBM Support

To support the implementation of APNEP's EBM-based CCMP and associated monitoring strategy, APNEP contracted with the Virginia Institute of Marine Science to evaluate and guide the incorporation of EBM elements in practice. VIMS assisted with the development of APNEP's ecosystem models for dissemination to stakeholders. In addition, they assisted in the establishment of appropriate goals, indicators, and monitoring objectives from an adaptive management standpoint.

CCMP Component:	All
CCMP Actions:	All
CCMP Outcome:	All
Intended Programmatic Output:	Ecosystem Model/ Strategy
Intended Programmatic Outcome:	New resource management approach (EBM)
Status:	Complete
Estimated Cost:	\$ 30,000
Estimated Leverage:	\$ 30,044



APNEP Symposium

APNEP hosted a protection and restoration symposium in New Bern, NC on November 20, 2013. This symposium featured guest speakers, discussion panels, and various sessions to examine the status of the Albemarle-Pamlico Estuarine System's natural habitats and resources, discuss progress made, and discuss challenges ahead for protection and restoration. The proceedings from the conference are available at http://portal.ncdenr.org/web/apnep/conferences?p_p_id=15

CCMP Components:	All
CCMP Actions:	All
CCMP Outcomes:	All
Intended Programmatic Output:	Symposium
Intended Programmatic Outcome:	Elevated program profile, facilitation of working relationships among committees and partners.
Status:	Complete
Estimated Cost:	\$ 9,832
Estimated Leverage:	\$ 3,826

Watershed Field Coordinator - Virginia (Ongoing)

The APNEP Watershed Field Coordinator for Virginia provides coordination and support to APNEP, NC DENR and the Virginia Department of Conservation and Recreation, and enhances CCMP implementation in the Roanoke, Chowan and Pasquotank river basins. APNEP supports one-half of this position for at least 20 hours per week. This is the final year of direct funding support from APNEP.

CCMP Component:	All
CCMP Actions:	All
CCMP Outcome:	All
Programmatic Output:	Program administration, reports, leverage, presentations
Programmatic Outcome:	CCMP implementation and program support
Status:	In progress
Estimated Cost:	\$ 30,405
Estimated Leverage:	\$ 24,000

CCMP/Monitoring Workshops

A series of workshops will be structured to develop priorities among scientists, managers, policy makers, and citizens on how ecological monitoring should be targeted to best support APNEP indicator tracking of CCMP ecosystem outcomes. This project was placed on hold pending completion of the first phase of indicator development, including target values.

CCMP Component:	All
CCMP Actions:	All
CCMP Outcome:	All
Intended Programmatic Output:	Indicators, Integrative Monitoring Strategy
Intended Programmatic Outcome:	Detection of environmental changes in support of CCMP implementation
Status:	Pending
Estimated Cost:	\$ 4,000
Estimated Leverage:	\$



Restoration Project RFP

APNEP posted a *Request for Proposals* for projects that provide measurable environmental benefits to wetlands, riparian areas, oysters, or diadromous fish, in alignment with the Restore Component within the 2012 CCMP.

CCMP Components:	Restore
CCMP Actions:	C1.3, 1.4, 1.5, 3.1, 4.1, 4.2, 4.3, 5.1
CCMP Outcomes:	1a, 1b, 2a, 2b, 2c, 3b, 3d
Intended Programmatic Output:	Restoration Projects, public awareness
Intended Programmatic Outcome:	Environmental / Natural Resource Restoration
Status:	Complete
Estimated Cost:	\$ 50,000 from FY2013 grant, supplanted with \$181,611 from remaining funds from previous two years of grant. Total awarded equals \$231,612
Estimated Leverage:	\$ 246,187

The following projects were completed under the RFP:

- *Water Quality Restoration of Alligator River, Long Shoal River and Pamlico Sound:* APNEP funded the North Carolina Coastal Federation to coordinate a restoration project that will enable storage and filtration of approximately 100 million gallons of runoff from 3,700 acres of cropland in Hyde County. Project funds were used to install one water control structure, ten swales, and core 8,750 feet of dikes. This project will significantly reduce the amount of farm drainage that is currently pumped each year directly into tributaries of Pamlico and Albemarle Sounds. The final report is available at http://portal.ncdenr.org/c/document_library/get_file?uuid=8e35dd6d-79cf-48a9-9205-674b1e3d2223&groupId=61563
 - Cost: \$ 74,989
 - Estimated Leverage: \$ 128,500
- *Use of a Novel Restoration Method to Enhance Oyster Populations and Improve Water Quality in Tidal Creeks:* APNEP funded researchers from the UNC Institute of Marine Sciences to lead a restoration project that tested partial oyster burial in sediment as an oyster restoration strategy in the region's tidal creeks. This technique appears to provide oysters an alternative refuge from biological stressors. This project built on the knowledge of local fishermen, who have found large oysters free from parasitic boring sponges thriving while buried in tidal creek sediments. At the completion of this project, empirical data had not yet been collected at the study sites. Oyster survival and growth data will be available mid-2014 to inform and instruct groups involved in oyster restoration efforts. The final report is available on the APNEP website at http://portal.ncdenr.org/c/document_library/get_file?uuid=58c252f0-1173-4254-9d54-01c354e6221d&groupId=61563
 - Estimated Cost: \$ 32,122
 - Estimated Leverage: \$ 35,204
- *Using Positive Interactions between Bivalves and Seagrass to Improve Water Quality and Restore Essential Fish Habitat in Coastal North Carolina -Phase II:* APNEP funded researchers at the UNC Institute of Marine Sciences to expand on a smaller



restoration project confirming a beneficial interaction between hard clams and eelgrass. The previous study indicated that clams are able to improve the condition and accelerate the recovery of degraded seagrass meadows by fertilizing sediments and improving water clarity through bio-filtration. The project restored approximately 1 acre of clam populations by deploying >500,000 clams within seagrass meadows at sites in Back and Pamlico Sounds to spur further eelgrass recovery. The final report is available at http://portal.ncdenr.org/c/document_library/get_file?uuid=7dcaa37d-22fa-4f51-a7c5-8eb2c8886034&groupId=61563

- Estimated Cost: \$ 74,956
- Estimated Leverage: \$ 76,504

- *Hoggard Mill Pond – Dam and River Herring Habitat Restoration*: Cancelled by grantee. Funds will be relocated to the implementation projects budget.

2013 Teacher Institute

APNEP partnered with the UNC Institute for the Environment and other partners to offer a four-day teacher training institute in July 2013 at the NC Botanical Garden. Approximately 25 elementary school teachers were provided with curriculum training in earth and environmental sciences with hands-on activities, local site visits, and specific content to support inquiry, experiential, and research-based instruction on estuarine and water resources.

CCMP Components:	Engage
CCMP Actions:	D 2.1, 2.2, 2.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b
Intended Programmatic Output:	25 teachers trained in environmental education, water quality, watersheds
Intended Programmatic Outcome:	Increased environmental education activities in North Carolina schools
Status:	Ongoing APNEP program (2013 session complete)
Estimated Cost:	\$ 10,403
Estimated Leverage:	\$ 11,000

Basic Observation Buoy (BOB) Project Expansion

APNEP partnered with UNC Coastal Studies Institute to expand the existing BOB project. Funding allowed for project expansion and improvement by upgrading sensor packages to provide more reliable and accurate data, while expanding the project to at least one additional school in the Albemarle-Pamlico region. The final report is available on the APNEP website at http://portal.ncdenr.org/c/document_library/get_file?uuid=ba880f33-7a99-469e-a08f-c90b58b72a47&groupId=61563

CCMP Components:	Engage, Monitor
CCMP Actions:	D 2.1, D2.2, D2.3, E1.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b, 3c, 3d
Intended Programmatic Output:	Construct and deploy Basic Observation Buoys, report
Intended Programmatic Outcome:	Increased student engagement, expanded data on the estuary
Status:	Complete



Estimated Cost: \$ 11,510
Estimated Leverage: \$ 15,790

Shad in the Classroom 2014

This collaborative project provides students with an understanding of the science process, an inspiration for careers in science, and a desire to protect our waterways through hands-on experience raising American shad from egg to releasable fry. This is a collaboration led by the North Carolina Museum of Natural Sciences. The final report is available at http://portal.ncdenr.org/c/document_library/get_file?uuid=04bc83fc-eccd-4e86-90bf-3983a71f4f0a&groupId=61563

CCMP Components: Engage, Restore
CCMP Actions: D 2.1, 2.2, 2.3
CCMP Outcomes: 1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b
Intended Programmatic Output: Increased community involvement in water quality and habitat protection
Intended Programmatic Outcome: Educational program, restoration activities
Status: Ongoing project (2013 session complete)
Estimated Cost: \$ 39,004
Estimated Leverage: \$ 12,000

Low Impact Development Summit

APNEP partnered with NC DWR, NCSU, NCCF and others to host a gathering of development, design, planning, and permitting professionals from across the state in March 2014 to discuss the latest technology and tools for low impact development (LID). Presenters included national speakers, government leaders, research experts, and developers. More information is available at <http://www.nccoast.org/Content.aspx?key=45a15314-18ce-4dc9-8637-9e453988de33&title=LID+Summit+2014>

CCMP Components: Engage, Protect, Restore
CCMP Actions: B1.2, B1.4, C1.5, D1.2, D3.1
CCMP Outcomes: 1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b
Intended Programmatic Output: Water quality improvements, knowledge transfer
Intended Programmatic Outcome: Education, protection and restoration activities
Status: Ongoing project (2013 session complete)
Estimated Cost: \$ 2,500
Estimated Leverage: \$ 47,500

CRFL Boater Awareness and Submerged Aquatic Vegetation Campaign

This project, conducted in partnership with the N.C. Wildlife Resources Commission, N.C. Division of Marine Fisheries, N.C. Sea Grant, and UNC's Institute for the Environment, placed educational and visually appealing signs at 50 boat ramps throughout coastal North Carolina. In addition to educating boaters about the value of aquatic grasses (also known as submerged aquatic vegetation or SAV), it also provides boating tips to protect this valuable resource. The sign can be viewed at: <http://apnep.org/web/apnep/responsibleboating>. This project was funded by a N.C. Coastal Recreational Fishing License grant. Also see http://www.nceagrants.org/images/stories/ncsg_pdf/documents/products/guides/sustainability_grass_beds.pdf for more information on SAV.

CCMP Components: Engage, Protect, Restore



CCMP Actions:	B2.2, B2.6, CD1.1, D1.3,
CCMP Outcomes:	2a, 2b, 2c
Intended Programmatic Output:	Educational signs
Intended Programmatic Outcome:	Protection of SAV, reduced transfer of invasive species
Status:	Complete
Estimated Cost:	Staff time
Estimated Leverage:	\$ 5,991

NC Division of Water Resources Project WET Facilitator Workshop

APNEP is supporting the Project WET Facilitator Training Workshop which provides educators with background information and quality environmental education activities focused on water quality, invasive species, and water resources. Through hosting their own subsequent Project WET workshops, these trained facilitators will then pass skills on to other educators who will teach students in their area. This increases the environmental literacy of not only those attending the training, but countless others in their community. More information on NC Project Wet is available at http://www.ncwater.org/education_and_technical_assistance/Project_WET/

CCMP Components:	Engage
CCMP Actions:	D1.1, D1.3, D2.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b
Intended Programmatic Output:	Environmental education training
Intended Programmatic Outcome:	Increase public awareness and involvement
Status:	In progress
Estimated Cost:	\$ 2,000
Estimated Leverage:	\$ 5,568

Oyster Summit 2014

APNEP is supporting a collaboration of government, non-government, and university organizations that are working to coordinate a workshop to assess the current state of oyster populations in North Carolina. The work focused on how oyster restoration and management activities have progressed in the last 20 years and served as a platform for charting future restoration and management activities. More information is available at <http://apnep.org/web/apnep/north-carolina-oyster-summit>

CCMP Components:	Identify, Protect, Restore, Engage
CCMP Actions:	A1.1, A1.2, B2.6, C5.1, C5.2, C5.3, E1.1
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b
Intended Programmatic Output:	Knowledge transfer, restoration and management activities
Intended Programmatic Outcome:	Improved effectiveness of oyster restoration and management activities
Status:	In progress
Estimated Cost:	\$ 2,002
Estimated Leverage:	\$ 7,506



Regional Workshop on CAMA Land Use Planning

APNEP is supporting the NC Division of Coastal Management (NC DCM), the NC Coastal Federation and the Business Alliance for A Sound Economy to organize and present a Coastal Area Management Act (CAMA) Land Use Plan workshop. During this interactive day-long session, NC DCM will be soliciting information about past experiences with the Land Use Planning Program and discussing new opportunities for increased technical assistance to local governments, streamlined plan reviews, and potential for reduced local planning burdens through improved coordination of state planning requirements. A draft agenda is available at <http://www.nccoastaltraining.net/uploads/CAMA%20Land%20Use%20Planning%20Northern%20Wkshop%20Agenda-5-13-14.pdf>

CCMP Components:	Protect
CCMP Actions:	B1.4
CCMP Outcomes:	2b, 3b, 3d
Intended Programmatic Output:	Model LID codes, LID projects
Intended Programmatic Outcome:	Improved water quality, sustain manageable rates of stormwater runoff
Status:	Pending (May 22, 2014)
Estimated Cost:	\$ 650
Estimated Leverage:	\$ 650

NC Division of Marine Fisheries Recreational Water Quality Monitoring

APNEP is providing one year of bridge funding to the NC Division of Marine Fisheries' Recreational Water Quality Monitoring Program for the continuation of water quality monitoring near recreational areas. The program tests bacterial concentrations in coastal recreational waters to protect public health. The program is responsible for notifying the public when bacteriological standards for safe bodily contact have been exceeded. The program also has an educational component that accompanies the testing. Their educational campaign informs the public how bacteria enter coastal waters and actions that can help prevent it.

CCMP Components:	Monitor, Engage
CCMP Actions:	D2.3, E1.1, E2.1, E2.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Monitoring data
Intended Programmatic Outcome:	CCMP Implementation, integrated monitoring strategy
Status:	In progress
Estimated Cost:	\$ 20,000
Estimated Leverage:	\$ 283,000

NC Museum of Natural Sciences Egret Workshop

APNEP supported the *Life Track – Great Egrets Project* which is a collaborative effort to conduct scientific research on Great Egrets and bring that research into North Carolina classrooms. APNEP provided financial support to the N.C Museum of Natural Sciences for a teacher workshop to increase teachers' knowledge and participation in the Life Track program. The workshop was held at Mattamuskeet National Wildlife Refuge and focused on



great egret biology, life history, and management. A focus was placed on the importance of adequate and varied habitat for the species, including the estuarine habitat in which many of the birds were first located and tagged.

CCMP Components:	Engage, Monitor
CCMP Actions:	D2.1, D2.2, D2.3, E2.1, E2.2
CCMP Outcomes:	2a, 2b, 2c
Intended Programmatic Output:	Educational program, monitoring data collection
Intended Programmatic Outcome:	Increased public awareness and environmental stewardship
Status:	Complete
Estimated Cost:	\$ 2,250
Estimated Leverage:	\$ 3,000

Living Shorelines Summit

APNEP supported and attended a national conference in Maryland to advance regional knowledge and implementation of living shorelines.

CCMP Components:	Protect
CCMP Actions:	B3.1, B3.3
CCMP Outcomes:	2a, 2b, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Improved capacity and knowledge of living shoreline techniques
Intended Programmatic Outcome:	More resilient shorelines, improved water quality, improved aquatic habitats
Status:	Complete
Estimated Cost:	\$ 3000
Estimated Leverage:	\$ Pending

Albemarle-Chowan Watershed Roundtable River Basin Booklet Printing

APNEP worked with the Albemarle-Chowan Watershed Roundtable to develop a river basin booklet for the Chowan river basin. The booklet described the natural, historical, and cultural environment within the Virginia portion of the Chowan river basin. The booklet was modeled after the river basin booklets produced by N.C. Office of Environmental Education and Public Affairs. A copy of the booklet is available on the APNEP website at

http://portal.ncdenr.org/c/document_library/get_file?uuid=054a7689-6e6c-4265-88ad-6763f5d30de0&groupId=61563.

CCMP Components:	Engage
CCMP Actions:	D2.2, D2.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b
Intended Programmatic Output:	Outreach and educational materials
Intended Programmatic Outcome:	Increased awareness and engagement, improved water quality
Status:	Complete
Estimated Cost:	\$ 2,000
Estimated Leverage:	\$ 4,000

Submerged Aquatic Vegetation Mapping & Monitoring

APNEP continued to lead and support the mapping and assessment of Submerged Aquatic Vegetation (SAV) in the AP region. As part of a second SAV mapping cycle (2012-2014), APNEP contracted with NCDOT Photogrammetry staff to (1) acquire aerial imagery in May 2013 along the barrier islands from Nags Head south to Cedar Island and from Cape Lookout west to White Oak River then (2) map SAV bed extent using these images.

CCMP Components:	Identify, Monitor
CCMP Actions:	A1.1, E2.1
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Public outreach and involvement
Intended Programmatic Outcome:	CCMP Implementation, increased environmental awareness
Status:	In Progress
Estimated Cost:	\$ 128,500
Estimated Leverage:	\$ 100,000

Roanoke River Gage Monitoring Near Oak City 2013

APNEP partnered with other organizations to keep the USGS monitoring gage in operation near Oak City. APNEP funds were combined with funds from US ACE, US FWS, NC DWR, and NC WRC to provide a total of \$21,200 to continue monitoring the Roanoke River.

CCMP Components:	Monitor
CCMP Actions:	E2.1, E2.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Monitoring data
Intended Programmatic Outcome:	CCMP Implementation, integrated monitoring strategy
Status:	Complete (ongoing project)
Estimated Cost:	\$ 5,900
Estimated Leverage:	\$ 15,300

NC Catch Placemat

APNEP provided support for the printing of NC Catch restaurant placemats. NC Catch is a non-profit organization that is comprised of local Catch groups focused on connecting consumers and businesses with year-round access to high-quality seafood. The placemats will educate people on the importance and benefits of the estuary as well as supporting locally caught seafood. The placemats will be distributed to restaurants throughout the APNEP region. An image of the placemat is available on the APNEP website at http://portal.ncdenr.org/c/document_library/get_file?uuid=06a5c1a2-9603-4fb2-8de9-385d246c0344&groupId=61563.

CCMP Components:	Engage
CCMP Actions:	D1.1, D1.2, D2.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Engagement materials on stewardship
Intended Programmatic Outcome:	Increase in citizen action to protect the AP region, improved water quality.
Status:	New
Estimated Cost:	\$ 2,000



Estimated Leverage: To be determined

Heritage Trail Map Printing

APNEP is providing support for outreach materials educating people on a community heritage trail along the Outer Banks byway. A partnership between APNEP, NC Catch, the Outer Banks Scenic Byway, and the Core Sound Waterfowl Museum and Heritage Center, the focus of the project is to raise awareness of the traditional communities, deep-rooted heritage, and historical maritime activities along the scenic byway.

CCMP Components:	Engage
CCMP Actions:	D1.5, D2.1
CCMP Outcomes:	1e, 2a
Intended Programmatic Output:	New opportunities for public to explore AP region
Intended Programmatic Outcome:	Increased public awareness and engagement
Status:	Printing pending
Estimated Cost:	\$ 2,000
Estimated Leverage:	\$4,900

Ecosystem-based Management Governance Study

Building on a report conducted by Duke graduate students as part of a client-based research project, APNEP will issue a Request for Proposals to study APNEP's current governance structure and provide recommendations to improve its capacity to implement ecosystem-based management in the Albemarle-Pamlico region.

CCMP Components:	Identify
CCMP Actions:	All
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Report and recommendations
Intended Programmatic Outcome:	More efficient and effective CCMP implementation
Status:	New (RFP pending)
Estimated Cost:	Pending

Ecosystem Services Assessment of the Albemarle-Pamlico Region

APNEP will issue a Request for Proposals for a study estimating the value of services provided by the Albemarle-Pamlico ecosystem and associated costs incurred as a result of ecosystem degradation.

CCMP Components:	Engage, Identify
CCMP Actions:	A3.1, A3.2, D3.1
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Report and recommendations
Intended Programmatic Outcome:	More efficient and effective CCMP implementation, improved communications
Status:	New (RFP pending)
Estimated Cost:	Pending



NC Coastal Habitat Protection Plan Implementation Support

The NC Coastal Habitat Protection Plan (CHPP), adopted by Coastal Resources, Environmental Management and Marine Fisheries Commissions, has seen routine development since its implementation began in 2004. While differences in scope, geography and mission exist, implementation of APNEP's CCMP and the CHPP are complimentary. Jimmy Johnson, North Carolina's Coastal Habitats Coordinator, serves a joint detail with APNEP and the NCDENR Office of Land and Water Stewardship. This role ensures that both plans are implemented in a coordinated and integrated fashion. Lindsey Smart, APNEP's Project Coordinator is providing scientific and technical support for the development of the CHPP's Strategic Habitat Areas (SHAs), which are derived via expert opinion and a conservation prioritization process. The Strategic Habitat Areas are a component of the CHPP and are meant to designate high quality habitat areas for fisheries management.

CCMP Components:	Identify, Protect, Restore
CCMP Outcomes:	1a, 1b, 1c, 1d, 2a, 2b, 2c, 3b, 3c, 3d
Intended Programmatic Output:	CHPP annual report, SHA designations
Intended Programmatic Outcome:	Coordinated regulation across NC state agencies to improve estuarine habitats
Status:	In Progress
Cost:	Staff Time
Estimated Leverage:	To be determined

Enhancement and Restoration of North Carolina Oyster Resources through Oyster Sanctuaries

APNEP partnered with the NC Division of Marine Fisheries to develop approximately 1.25 acres of the West Bluff Oyster Sanctuary in Pamlico Sound by deploying reef structures. The sanctuary was permitted and construction initiated in 2005 with funds from the Clean Water Management Trust Fund and The Nature Conservancy. Sampling of the sanctuary indicates good oyster recruitment, survival and growth. Placement of these reef structures will further the completion of this permitted reef, create areas that will protect native oyster brood stock, enhance oyster production in adjacent waters, and create new oyster habitat.

CCMP Components:	Restore
CCMP Actions:	C5.1
CCMP Outcomes:	2b
Intended Programmatic Output:	Output: Oyster reef
Intended Programmatic Outcome:	Outcome: Improved habitat and fisheries
Status:	Complete
320 Funds:	\$ 34,465
Leverage:	\$ 19,105

Citizens' Monitoring Network

The APNEP Citizens' Monitoring Network (CMN) is a network of private citizens who monitor surface water quality in the Albemarle-Pamlico estuary and its tributaries. For FY 2014, operation of the CMN (including Coordinator, equipment, supplies, office and lab space and indirect costs) continued under voluntary leadership at East Carolina University (ECU). The CMN maintained its current participating citizens' monitoring efforts. APNEP expenditures covered the costs of chemical supplies, and ECU covered operational expenses.



CCMP Components:	Engage, Monitor
CCMP Actions:	D1.1, E1.3
CCMP Outcomes: :	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Database of citizen-collected monitoring information
Intended Programmatic Outcome:	Partnership building, outreach, CCMP implementation and prioritization
Status:	In progress – to be replaced by new citizen science program
320 Funds:	\$ 1,000
Leverage:	\$ 50,000

Chowan Healthy Waters Initiative

APNEP is continuing to partner with Virginia Commonwealth University and VA Department of Conservation and Recreation, as well as other state agencies on both sides of the border to implement actions to protect high quality waters. Identification of these pristine waters is a necessary first step in the ultimate preservation of these valuable areas by land trusts and other organizations.

CCMP Components:	Identify, Protect, Engage
CCMP Actions:	A1.1, B3.2, D1.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	New partnerships and activities in VA and NC focused on protecting high quality waters
Intended Programmatic Outcome:	Maintain good water quality
Status:	In Progress / Ongoing
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Integrated Monitoring Strategy

An integrated monitoring strategy is an essential component of APNEP's ecosystem-based management approach. Upon completion, the monitoring strategy will provide resource managers and other partners with cost and information quality (uncertainty) alternatives to facilitate the selection of monitoring protocols to be included in the next monitoring deliverable: the integrated monitoring plan. This project was placed on hold pending completion of the first phase of indicator development, including target values.

CCMP Component(s):	Monitor
CCMP Actions:	E1.1, E1.2, E1.3, E2.1, E2.2
CCMP Outcomes:	Integrated monitoring strategy to support CCMP implementation
Intended Programmatic Output:	Document, functional workgroups
Intended Programmatic Outcome:	Integrated monitoring strategy to support ecosystem-based management through the CCMP
Status:	Pending
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Albemarle Sound Monitoring Project (USGS)

APNEP is partnering with the US Geological Survey's North Carolina Water Science Center on a four-year pilot project in the Albemarle Sound as part of the National Monitoring Network for estuarine systems. The project began in FY 2012 and has multiple goals including: 1) Conduct an inventory of current monitoring projects, 2) Define critical management questions of interest for the Albemarle Sound, 3) Implement a pilot monitoring program in the Albemarle Sound that can help answer an identified management question of interest, and 4) Create a GIS portal to display monitoring data in the sound. APNEP anticipates that the insights gained in supporting this project will benefit the development of an integrated monitoring strategy for the entire APNEP study area.

CCMP Component(s):	Monitor
CCMP Actions:	E1.1, E1.2, E1.3, E2.1, E2.2
CCMP Outcomes:	Monitoring network in Albemarle Sound
Intended Programmatic Output:	Summary report, data
Intended Programmatic Outcome:	Integrative monitoring in AP region
Status:	Report Pending
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Submerged Aquatic Vegetation Partnership

Since preliminary discussions among its agency partners began in 2001, APNEP has supported a collaboration among partners that aims to promote the conservation of SAV along the entire coast of North Carolina and southeastern Virginia. The Partnership has been meeting regularly since 2004 and was formalized through a Memorandum of Agreement in late 2006. Whereas the Partnership's initial focus was on baseline mapping and monitoring, the Partnership now also coordinates interagency assessment, protection, restoration, and outreach initiatives.

CCMP Components:	Protect, Restore
CCMP Actions:	B2.2, C3.3
CCMP Outcomes:	2a, 2b, 3d
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	Ongoing
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Americorps

APNEP is supporting an Education and Outreach Assistant through the Americorps Mountains to the Sea Program administered by the NC Office of Environmental Education and Public Affairs. The Education and Outreach Assistant will develop materials and organize activities that educate the public in the APNEP region about the significant natural resources within the region and APNEP activities that are underway to identify, protect, and restore them. The targeted audience for the assistant includes underserved populations within the APNEP region. One highlight of the Americorps projects is the Pocosin Project, an environmental education effort to raise awareness about pocosins and their importance for biodiversity, ecosystem services, and water quality.



CCMP Components:	Engage
CCMP Actions:	D1.1, D1.2, D2.1, D2.2, D2.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Education and outreach materials, environmental education programs
Intended Programmatic Outcome:	Increased public awareness and involvement
Status:	In progress
Estimated Cost:	\$ 6,392 for member, additional cost to support APNEP activities
Estimated Leverage:	To be determined

Albemarle-Chowan Roundtable

Watershed roundtables consist of stakeholders who have a vested interest in their communities and are concerned about local water quality. The Albemarle-Chowan Watershed Roundtable engages stakeholders in the Virginia portions of the Chowan and Pasquotank river basins to collaborate on issues concerning water quality, habitat, and other natural resources within these watersheds. In FY 2013 the Roundtable is providing support for a water quality celebration, trail signage highlighting features of the Meherrin River, and the development of a Chowan River basin booklet analogous to those in North Carolina.

CCMP Components:	Engage
CCMP Actions:	D1.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Saltwater Connections

Saltwater Connections is a regional initiative aimed at sustaining livelihoods, cultural heritage, and natural resources along the coast, from Hatteras Island to Ocracoke and Carteret County. The Saltwater Connections Resource Team's approach to growing sustainable communities is modeled after Handmade in America's Small Town Revitalization Program, an asset-based economic development project in western North Carolina. The goal for this community vitalization process is to leverage assets, whether cultural, architectural or human, in order to build a complete community vitalization plan. More information is available at www.saltwaterconnections.org

CCMP Components:	Engage
CCMP Actions:	D1.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

North Carolina Catch

North Carolina Catch supports the work of the four local seafood promotion initiatives that stretch from Currituck County to Brunswick County. Carteret Catch, Ocracoke Fresh, Brunswick Catch, and Outer Banks Catch have emerged as the buoys and markers that guide consumers to local fish and shellfish sources. The groups help educate consumers on the culinary and nutritional rewards of choosing local seafood, as well as the economic, cultural, and ecological benefits for local communities and for the state. North Carolina Catch is a nonprofit umbrella organization that ties the work of the local groups together to foster collaboration, to strengthen communication, and to enhance a statewide and national presence. Jimmy Johnson serves as President of the N.C. Catch Board of Directors. More information is available at <http://www.nccatch.org/>

CCMP Components:	Engage
CCMP Actions:	D1.2, D2.3,
CCMP Outcomes:	1d
Intended Programmatic Output:	Marketing materials
Intended Programmatic Outcome:	Informed seafood consumers who understand connections between local seafood and habitats.
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

North Carolina Watershed Restoration and Improvement Team

The NC Watershed Restoration and Improvement Team (WRIT) is a working group composed of experts from NCDENR, the NC Department of Agriculture and Consumer Services and the NC Wildlife Resources Commission. Its mission is to "strengthen partnerships in order to enhance each agency's ability to carry out its own water-related goals and activities to improve watershed functions throughout North Carolina." The team provides a forum for managers to share insights and work collaboratively on watershed issues. The team has also focused restoration efforts in four sub-watersheds in North Carolina, including one in the Roanoke River basin.

CCMP Components:	Engage
CCMP Actions:	C2.1, D1.2, also supports B1.3, B1.4, B1.5, C1.3
CCMP Outcomes:	1a, 1b, 1c, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Interagency cooperation
Intended Programmatic Outcome:	More efficient leveraging of agency resources
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

North Carolina Watershed Stewardship Network

The Watershed Stewardship Network (WSN) is a working group that includes representatives from state and local government, academic institutions, non-profit organizations, and private industry. The mission of the WSN is to empower more effective watershed stewardship because water is critical to economic, environmental, and community health. The purpose of the group is to identify, include, link, and serve watershed stakeholders in North Carolina. Additional information is available at <http://www.ces.ncsu.edu/depts/agecon/WECO/NCWatershedStewardshipNetwork.htm>



CCMP Components:	Engage
CCMP Actions:	D1.1, D1.2, D2.2, D2.3, D3.1
CCMP Outcomes:	1a, 1b, 1c, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Workshops, online tools, environmental programs
Intended Programmatic Outcome:	Improved environmental stewardship and watershed health
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Invasive Species Rapid Assessment Protocol Development

A protocol was developed for Rapid Assessment Surveys (RAS) of invasive species in the estuary. Similar efforts nationwide typically engage a team of researchers to sample and identify organisms in the estuary. The species of interest include introduced or invasive fouling organisms, macro-invertebrates, fish, and aquatic plants. This project was the subject of a client-based research project with Duke University. The final report is available at http://portal.ncdenr.org/c/document_library/get_file?uuid=c125871c-33ae-4a02-ae5-fe9d0534f822&groupId=61563

CCMP Components:	Identify
CCMP Actions:	A2.1
CCMP Outcomes:	2c
Intended Programmatic Output:	Report / protocol for rapid marine invasive species assessments
Intended Programmatic Outcome:	Protocol to conduct
Status:	Complete
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Social Network Analysis

This project characterized the social network of environmental professionals working in the Albemarle-Pamlico region. Analysis of the network provided important insights regarding information hubs and communication gaps in the region. It further informed the development of indicators related to organizational efficiency and management outcomes. This project was the subject of a client-based research project with Duke University.

The final report is available at

http://portal.ncdenr.org/c/document_library/get_file?uuid=c88b7a77-7d99-434a-8e08-8143d940e913&groupId=61563

CCMP Components:	Engage
CCMP Actions:	D1.2, E1.1
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Report
Intended Programmatic Outcome:	Improved communications among partners, strategic recruitment of APNEP implementation team members.
Status:	Complete
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined



Ecosystem-Based Management Policy Study

This study examined various policy approaches that have been developed to support ecosystem-based management efforts in the United States. Recommendations were offered regarding potential legislative or policy tools that can enhance APNEP's ability to lead ecosystem-based management efforts. This project was the subject of a client-based research project with Duke University. The final report is available at http://portal.ncdenr.org/c/document_library/get_file?uuid=29f5489b-f7bf-449f-b9a1-1d8a4ac76bb1&groupId=61563

CCMP Components:	Engage
CCMP Actions:	D1.3, D3.1
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Report, strategy
Intended Programmatic Outcome:	Initial step in implementation of action D3.1
Status:	Complete
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Barriers to Restoration Activities Study

This study examines various policy and regulatory obstacles to restoration efforts in North Carolina. Recommendations will be offered regarding potential legislative or policy tools that can enhance APNEP's ability to work with partners on restoration efforts. This project is the subject of a client-based research project with the University North of Carolina at Chapel Hill. The final report is pending and will be posted at <http://portal.ncdenr.org/web/apnep/reports>

CCMP Components:	Restore
CCMP Actions:	C1.3, 2.1, 2.2, 2.3
CCMP Outcomes:	2a, 2b, 2c, 3a, 3b, 3d
Intended Programmatic Output:	Report
Intended Programmatic Outcome:	Proposed policy recommendations and policy amendments, improved restoration capacity and outcomes.
Status:	Final report pending
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Southeast Natural Resource Leadership Group Pilot Project Development

The Southeast Natural Resource Leadership Group (SENRLG) is comprised of the regional principals of federal natural resource agencies across the Southeast that have undertaken the development of a Landscape Conservation and Restoration Pilot Project (LCRPP) to support climate change adaptation efforts in conservation and restoration in the Southeast that would illustrate how the agencies could coordinate and leverage federal agency mandates and resources to enhance natural resource management. Climate change risks were selected as the point of focus for targeting program resources on the landscape and the focus is the North Carolina coastal area of the Albemarle-Pamlico estuary. The final SENRLG report was released late in 2012. APNEP will work with SENRLG to provide guidance and assistance for a project that supports implementation of the CCMP if initiated by SENRLG.



More information is available at

<http://www.epa.gov/region04/topics/envmanagement/senrlg/index.htm>

The initial project report is available at

http://portal.ncdenr.org/c/document_library/get_file?uuid=dd0f0bf5-2725-4ecc-8985-746ee7b1dd29&groupId=61563

CCMP Components:	To be determined
CCMP Actions:	To be determined
CCMP Outcomes:	To be determined
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	No action in FY 2014 (Federal lead)
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

North Carolina Clean Water Management Trust Fund Project

APNEP is working with the North Carolina Clean Water Management Trust Fund (CWMTF) to implement a project to provide water quality improvement projects in one or more of the APNEP river basins. The project will be used as part of the 1:1 non-federal match for the FY 2013 section 320 grant. The APNEP director serves half-time as deputy director of the CWMTF. Additional information is available at <http://www.cwmtf.net/>

CCMP Components:	Protect, Restore
CCMP Actions:	To be determined
CCMP Outcomes:	To be determined
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	Pending
Estimated Cost:	Staff Time
Status:	Pending
Estimated Cost:	Non-federal match
Estimated Leverage:	\$510,247



FY 2015 PROPOSED PROJECTS & ACTIONS

Projects for FY 2015 will continue to support the APNEP's ecosystem-based management program to guide implementation of the 2012 CCMP.

APNEP Administration & Indirect Costs (ongoing)

For more detail see Administration and Financial section.

CCMP Component:	All
CCMP Actions:	All
CCMP Outcome:	All
Intended Programmatic Output:	Program administration, partnership building, CCMP implementation
Intended Programmatic Outcome:	CCMP implementation
Status:	Ongoing
Estimated Cost:	\$272,805 direct and \$27,558 indirect cost @14.4% (see indirect costs page 34).

Advisory Board and Committees Support (ongoing)

The key element of CCMP implementation is active citizen participation through the Policy Board and each of the two Advisory Committees under Executive Order #133, as well as the implementation workgroups. Funds will be used to support meetings, speakers, and materials as needed.

CCMP Component:	All
CCMP Actions:	All
CCMP Outcome:	All
Intended Programmatic Output:	Partnership building, outreach, prioritizing CCMP implementation
Intended Programmatic Outcome:	New and greater public involvement, estuarine indicator development
Status:	Ongoing
Estimated Cost:	\$ 4,000
Estimated Leverage:	To be determined

Americorps Member

APNEP plans to support an Education and Outreach Assistant through the Americorps Mountains to the Sea Program, with the NC Office of Environmental Education and Public Affairs. The Education and Outreach Assistant will develop materials and organize activities that educate the public in the APNEP region about the significant natural resources within the region and APNEP activities that are underway to identify, protect, and restore them. The targeted audience for the assistant includes underserved populations within the APNEP region. One highlight of the Americorps projects is the Pocosin Project, an environmental education effort to raise awareness about pocosins and their importance for biodiversity, ecosystem services, and water quality.



CCMP Components:	Engage
CCMP Actions:	D1.1, D1.2, D2.1, D2.2, D2.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Education and outreach materials, environmental education programs
Intended Programmatic Outcome:	Increased public awareness and involvement
Status:	In progress
Estimated Cost:	\$ 8,137
Estimated Leverage:	To be determined

CCMP Implementation Projects (new)

The APNEP Policy Board will work with the Implementation Committee and its associated workgroups to identify projects that need financial support or administrative support from APNEP. The Policy Board will evaluate the requests and administer the funding for priority projects and activities.

CCMP Component:	All
CCMP Actions:	All
CCMP Outcome:	All
Intended Programmatic Output:	Program administration, partnership building, CCMP implementation
Intended Programmatic Outcome:	CCMP implementation
Status:	New
Estimated Cost:	\$ 140,000
Estimated Leverage:	\$ 140,000

2015 Teacher Institute (ongoing)

APNEP will partner with the work with partners to offer a teacher training institute in summer of 2015. Approximately 25 elementary school teachers will be provided with curriculum training in earth and environmental sciences with hands-on activities, site visits, and specific content to support inquiry, experiential, and research-based instruction on estuarine and water resources.

CCMP Components:	Engage
CCMP Actions:	D 2.1, 2.2, 2.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b
Intended Programmatic Output:	25 teachers trained in environmental education, water quality, watersheds
Intended Programmatic Outcome:	Increased environmental education activities in North Carolina schools
Status:	Ongoing APNEP program
Estimated Cost:	\$ 25,000
Estimated Leverage:	\$ 12,000

Shad in the Classroom (ongoing)

APNEP will continue to support this collaborative project that provides students with an understanding of the scientific process, an inspiration for careers in science, and a desire to protect our waterways through hands-on experience raising American shad from egg to releasable fry. This is a collaboration led by, the NC Museum of Natural Sciences. The objective of this project is to build an understanding of the life history of shad and an appreciation for our natural world.

CCMP Components:	Engage, Restore
CCMP Actions:	D 2.1, 2.2, 2.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3b
Intended Programmatic Output:	Increased community involvement in water quality and habitat protection
Intended Programmatic Outcome:	Educational program, restoration activities
Status:	Ongoing APNEP partner project (4 th year)
Estimated Cost:	\$ 25,000
Estimated Leverage:	\$ 15,000

Submerged Aquatic Vegetation Monitoring (ongoing)

In coastal waters of the A-P region, submerged aquatic vegetation (SAV) is widely recognized for many important ecological functions. Currently, there are no long-term SAV monitoring programs established in the region that can provide reliable quantitative data on its status and trends. In accordance with a monitoring protocol developed from APNEP-managed research and supported by a Coastal Recreational Fishing License grant, in FY 2015 APNEP will initiate boat-based monitoring for SAV in the sounds' interior areas while also establishing monitoring within strategic sentinel sites. This work compliments APNEP's aerial SAV monitoring by enhancing SAV detection in areas with relatively low water clarity.

CCMP Components:	Identify, Monitor
CCMP Actions:	A1.1, E1.1, E2.1
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3d, 3c, 3d
Intended Programmatic Output:	Essential environmental data collection, Public outreach and involvement
Intended Programmatic Outcome:	CCMP Implementation, increased environmental awareness
Status:	Ongoing
Estimated Cost:	\$ 25,000
Estimated Leverage:	\$ 50,000

Integrated Monitoring Strategy (ongoing)

A continuing priority for APNEP is to facilitate the establishment of an integrated monitoring strategy to detect, measure, and track changes in the ecosystem. Much preparatory work has already been conducted by the APNEP resource monitoring and assessment teams and these teams' contributions will be essential to complete the strategy. Upon completion, the strategy will provide resource managers and other partners with cost and information quality (uncertainty) alternatives that will facilitate the selection of a set of monitoring protocols to be included in the APNEP integrated monitoring plan..

CCMP Component(s):	Monitor
CCMP Actions:	E1.1, E1.2, E1.3, E2.1, E2.2
CCMP Outcomes:	Integrated monitoring strategy
Intended Programmatic Output:	Document, functional workgroups
Intended Programmatic Outcome:	Integrated monitoring strategy to support ecosystem-based management through the CCMP
Status:	New
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Albemarle Sound Nutrient Criteria Development (new)

APNEP is leading an effort to review the nutrient criteria that protect our estuaries under the Clean Water Act. This review will be conducted by an interdisciplinary working group in close partnership with the N.C. Division of Water Resources, the U.S. Environmental Protection Agency, and other partners as part of the North Carolina Nutrient Criteria Development Plan. The initial focus will be on Albemarle Sound, where lessons learned will be applied to all of North Carolina's estuarine waters. If justified by the review, amendments to North Carolina's nutrient criteria will be proposed for consideration by the Environmental Management Commission.

CCMP Components:	Restore
CCMP Actions:	C1.1, C1.2
CCMP Outcomes:	1a, 1b, 1d, 3b, 3c
Intended Programmatic Output:	Recommendations to NC DWR for nutrient criteria for Albemarle Sound
Intended Programmatic Outcome:	Maintain & restore good water quality
Status:	New
Estimated Cost:	Staff Time (potentially funding from implementation projects/ monitoring)
Estimated Leverage:	To be determined

Chowan Healthy Waters Initiative (ongoing)

APNEP will continue to partner with Virginia Commonwealth University and the VA Department of Conservation and Recreation, as well as other state agencies on both sides of the border to implement action to protect high quality waters. Identification of these pristine waters is a necessary first step in the ultimate preservation of these valuable areas by land trusts and other organizations.



CCMP Components:	Identify, Protect, Engage
CCMP Actions:	A1.1, B3.2, D1.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	New partnerships and activities in VA and NC focused on protecting high quality waters
Intended Programmatic Outcome:	Maintain good water quality
Status:	Ongoing
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Albemarle-Chowan Roundtable (ongoing)

Watershed roundtables consist of stakeholders who have a vested interest in their communities and are concerned about local water quality. The Albemarle-Chowan Watershed Roundtable engages stakeholders in the Virginia portions of the Chowan and Pasquotank river basins to collaborate on issues concerning water quality, habitat, and other natural resources within these watersheds.

CCMP Components:	Engage
CCMP Actions:	D1.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Saltwater Connections (ongoing)

Saltwater Connections is a regional initiative aimed at sustaining livelihoods, cultural heritage, and natural resources along the coast, from Hatteras Island to Ocracoke and Carteret County. The Saltwater Connections Resource Team's approach to growing sustainable communities is modeled after Handmade in America's Small Town Revitalization Program, an asset-based economic development project in western North Carolina. The goal for this community vitalization process is to leverage assets, whether cultural, architectural or human, in order to build a complete community vitalization plan.

CCMP Components:	Engage
CCMP Actions:	D1.2
CCMP Outcomes:	1a, 1b, 1c, 1d, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Watershed Restoration and Improvement Team (ongoing)

The Watershed Restoration and Improvement Team (WRIT) is a working group composed of experts from the NC Department of Environment and Natural Resources, the NC Department of Agriculture and Consumer Services and the NC Wildlife Resources Commission. Its mission is to "strengthen partnerships in order to enhance each agency's ability to carry out its own water-related goals and activities to improve watershed functions throughout North Carolina." The team provides a forum for managers to share insights and work collaboratively on watershed issues. The team has also focused restoration efforts in four sub-watersheds in North Carolina, including one in the Roanoke River basin.

CCMP Components:	Engage, Protect, Restore
CCMP Actions:	C2.1, D1.2, also supports B1.3, B1.4, B1.5, C1.3
CCMP Outcomes:	1a, 1b, 1c, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Invasive Species Rapid Assessment Protocol Development II (ongoing)

This project will further develop the protocol for Rapid Assessment Surveys (RAS) of invasive estuarine species. Similar efforts nationwide typically engage a team of researchers to sample and identify organisms in the estuary. The species of interest include introduced or invasive fouling organisms, macro-invertebrates, fish, and aquatic plants. Phase I of this project was developed in FY2013 as a client-based research project with Duke University.

CCMP Components:	Identify
CCMP Actions:	A2.1
CCMP Outcomes:	2c
Intended Programmatic Output:	Report / protocol rapid invasive species assessments
Intended Programmatic Outcome:	Protocol to conduct
Status:	Pending
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Implementation of APNEP Communications Strategy

APNEP renews and updates its core communications, education, and outreach strategies through its two-year Communications Strategy. APNEP implements this plan in furtherance of its mission and in accordance with its CCMP. Communications efforts are prioritized and linked to CCMP objectives, actions, and associated environmental outcomes. In FY 2015 APNEP will prioritize further development of its videography capabilities and integrate these materials into current social and traditional media approaches, as detailed in the strategy document along with a fiscal plan for outreach activities.

CCMP Components:	Identify, Protect, Restore, Engage, Monitor
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CCMP Actions:	All
CCMP Outcomes:	All
Intended Programmatic Output:	Public outreach and involvement
Intended Programmatic Outcome:	CCMP Implementation, increased environmental awareness, increase program awareness
Status:	Ongoing
Estimated Cost:	Staff time
Estimated Leverage:	To be determined

Southeast Natural Resource Leadership Group Pilot Project Development (ongoing?)

The Southeast Natural Resource Leadership Group (SENRLG) is comprised of the regional principals of federal natural resource agencies across the Southeast. In 2013, the SENRLG Principals undertook the scoping for development of a Landscape Conservation and Restoration Pilot Project (LCRPP) to support climate change adaptation efforts in conservation and restoration in the Southeast that would illustrate how SENRLG agencies could coordinate and leverage federal agency mandates and resources to enhance natural resource management. Climate change risks were selected as the point of focus for targeting program resources on the landscape and the North Carolina coastal area of the Albemarle-Pamlico estuary. APNEP will assist with project(s) that support implementation of the CCMP if enabled by SENRLG.

CCMP Components:	To be determined
CCMP Actions:	To be determined
CCMP Outcomes:	To be determined
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	In progress (Federal lead)
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Adaptation Project with North Carolina Sea Grant

APNEP staff will continue to work with NC Sea Grant on a National Oceanic and Atmospheric Administration (NOAA) grant to develop, improve, and coordinate communication approaches related to present and future coastal hazards associated with flooding, as well as potential sea level rise and climate change impacts.

CCMP Components:	Engage
CCMP Actions:	D3.3
CCMP Outcomes:	1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Engagement materials, campaign, 2 local government workshops
Intended Programmatic Outcome:	Implementation of adaptation measures
Status:	Pending
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

Invasive Aquatic Species Outreach in Northeastern N.C. with N.C. Sea Grant

APNEP is developing outreach materials to educate local governments and the public about threats from aquatic invasive species. Working in partnership with North Carolina Sea Grant and North Carolina Cooperative Extension, the project will raise awareness and help people identify, control, and prevent the spread of aquatic invasives like hydrilla, Eurasian water milfoil, and water hyacinth.

CCMP Components:	Engage
CCMP Actions:	D1.3
CCMP Outcomes:	2c
Intended Programmatic Output:	Engagement materials and campaign
Intended Programmatic Outcome:	Improved control of invasive species
Status:	Pending
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

North Carolina Watershed Stewardship Network

The Watershed Stewardship Network (WSN) is a working group that includes representatives from state and local government, academic institutions, non-profit organizations, and private industry. The mission of the WSN is to empower more effective watershed stewardship because water is critical to economic, environmental, and community health. The purpose of the group is to identify, include, link, and serve watershed stakeholders in North Carolina.

CCMP Components:	Engage
CCMP Actions:	D1.1, D1.2, D2.2, D2.3, D3.1
CCMP Outcomes:	1a, 1b, 1c, 2a, 2b, 2c, 3a, 3b, 3c, 3d
Intended Programmatic Output:	Workshops, online tools, environmental programs
Intended Programmatic Outcome:	Improved environmental stewardship and watershed health
Status:	In progress
Estimated Cost:	Staff Time
Estimated Leverage:	To be determined

North Carolina Clean Water Management Trust Fund Projects

APNEP will work with the North Carolina Clean Water Management Trust Fund (CWMTF) to implement a project to provide water quality improvement projects in one or more of the APNEP river basins. The project will be used as part of the 1:1 non-federal match for the FY 2014 section 320 grant.

CCMP Components:	To be determined
CCMP Actions:	To be determined
CCMP Outcomes:	To be determined
Intended Programmatic Output:	To be determined
Intended Programmatic Outcome:	To be determined
Status:	Pending
Estimated Cost:	Staff Time
Estimated Leverage:	\$ 510,248



ADMINISTRATION AND FINANCIAL

APNEP ADMINISTRATION

APNEP staff is responsible for the coordination, planning and successful completion of APNEP functions, including Policy Board and Advisory Committee meetings, APNEP forums and other APNEP-sponsored/partner events. In addition, staff monitors, and often becomes involved in, activities of state resource management agencies that relate to CCMP implementation, APNEP's mission, and the Albemarle-Pamlico watershed or estuary. Staff also attends meetings, conferences and workshops in order to stay apprised of technological advancements that may prove beneficial in the APNEP region and the partnership. Although the Policy Board and Advisory Committees are instrumental in identifying local environmental issues and prioritizing management actions within each basin, most management actions are implemented by various state agencies on a local, basinwide, regional or statewide basis and require staff involvement and interactions.

Indirect Costs

Under the FY2013-14 negotiated indirect cost agreement between NCDENR and the US EPA, the Office of Land and Water Stewardship set rate is 13.3% of all salaries supported by this federal grant. Estimated indirect costs are \$29,043 based on the indirect rate for grant supported salaries.

Administrative Costs

Overall administration costs for FY 2015 are estimated at approximately \$304,731 and include salaries, benefits, longevity pay, equipment, supplies, office and storage space rent (Washington, NC), IT services and phone, and training and development.

Personnel*

Presently, the APNEP staff consists of the APNEP office in Raleigh, with the Director, Program Scientist, Policy and Engagement Manager, and Project Coordinator. The APNEP office in Washington, NC houses the North Carolina Watershed Field Representative.

APNEP Director

The Director administers and coordinates program activities and CCMP implementation, involving interaction with numerous federal and state resource management agencies, universities, interest groups, and the general public. This position manages the post-CCMP grants and associated contracts, provides staff support to the APNEP Policy Board and Advisory Committees, and represents APNEP at local, state, regional and national meetings. Dr. Bill Crowell has been the Director since June 2002.

As of January 1, 2013 the Director position was changed to include duties associated with administration of the NC Clean Water Management Trust Fund (CWMTF). The change was supported by Jim Giattina, Director of the Water Protection Division for EPA Region IV. (Memo attached Appendix B) . As a result of this change the Director position is now joint-funded by EPA and NCDENR.



Program Scientist

The Program Scientist assists the Director with CCMP administration. This position helps design and implement a comprehensive monitoring strategy and reporting process, guides the Scientific and Technical Advisory Committee (STAC), and reviews project proposals and reports for merit. This position provides staff support to the Policy Board and Advisory Committees. Dr. Dean Carpenter has served in this role since November 2003.

Policy and Engagement Manager

The Policy and Engagement Manager leads public/community relations and knowledge concerning issues relating to the Albemarle-Pamlico region; facilitates CCMP implementation; develops and guides educational and outreach programs; promotes dialogue between local government officials and private citizens; and serves as a liaison for various APNEP workgroups and committees. Jim Hawhee has served in this role since April 2014. Mr. Hawhee previously served in APNEP from November 2010 to July 2013.

Project Manager

The Project Manager assists the Director to administer the 320 Grant and coordinate and manage contracting and associated activities within NCDENR. The position also guides and tracks CCMP implementation, involving interaction with numerous federal and state resource management agencies, universities, interest groups, and the general public, and provides staff support to the Policy Board and Advisory Committees. This position also manages the program's GIS functions. Lindsey Smart has served in this role since March 2013.

Education and Outreach Coordinator (New)

The Education and Outreach Coordinator supports APNEP education and public outreach activities. The position implements educational and outreach programs; promotes dialogue between local government officials and private citizens; and provides liaison responsibility for the Citizens' Monitoring Network. This position also provides valuable staff support to the Policy Board and other advisory committees. This is a new position to be created and filled in FY2015.

Coastal Habitats Coordinator

This position provides an essential function as an APNEP liaison to local governments and state agencies. The Coastal Habitats Coordinator (NC) provides coordination and support to local governments and state agencies to enhance CCMP implementation. This position also provides staff support to the Policy Board and Advisory Committees. Jimmy Johnson has served in this role since January 2006. *This position is funded by NC DENR and provides a portion of the non-federal match for the 320 grant.*

Note: All positions are administrated in compliance with North Carolina Office of State Personnel rules and policies.



TABLE of CONTRACTS and GRANTS

APNEP established and managed many contracts in FY 2014. Descriptions of these items are discussed in the Projects and Activities section of this report.

The following table provides an overview of all active and completed contracts to local entities since the last grant applicant / annual report in April 2013.



GRANTS TO LOCAL ENTITIES
(Active or completed: April 30, 2013 to May 30, 2014)

Project Title	Funded Amount	Project Leader	Purpose	Deliverables	Completion Date	Status
Watershed Coordinator	\$30,405 (2012)	VA. Dept. Conservation & Recreation	Fund Watershed Coordinator in VA-NC Shared river basins	Program support, Reports	Ongoing	Complete
Watershed Coordinator (VA)	\$30,405 (2013-14)	VA. Dept. Conservation & Recreation	Fund Watershed Coordinator in VA-NC Shared river basins	Program support, Reports	Ongoing	In Progress
Citizens' Monitoring Network	\$1,000	East Carolina University	Outreach / Monitoring	Program Admin., Reports	Ongoing	In Progress
Teacher Institute 2013	\$10,403	UNC Institute for the Environment	Develop and Implement a Teacher Institute for up to 24 teachers	Week long Institute, Report	Sept. 2013	Complete
Teacher Institute 2014	\$11,000	UNC Institute for the Environment	Develop and Implement a Teacher Institute for up to 24 teachers	Week long Institute, Report	Sept. 2014	In Progress
Shad in the Schools 2013	\$39,004	Friends of the NC Museum of Natural Sciences	Students will raise American Shad in the classroom from egg to releasable fry	Teacher workshop, Shad Release, Podcasts & Film	June 2013	Complete
Shad in the Schools 2014	\$30,000	Friends of the NC Museum of Natural Sciences	Students will raise American Shad in the classroom from egg to releasable fry	Teacher workshop, Shad Release, Podcasts & Film	June 2014	In Progress
Basic Observation Buoy (BOB) Workshop, Construction, and Deployment	\$11,510	UNC-Coastal Studies Institute	Local students will construct and deploy "BOB" units to collect data in the Albemarle-Pamlico Sounds	Training Workshop, BOB units, Report	Sept. 2013	Complete
2013 Restoration Project: Using positive interactions between bivalves and seagrass to improve water quality and restore essential habitats	\$74,956	UNC Institute of Marine Sciences	Restore clam populations within seagrass meadows at sites in Back and Pamlico Sounds to spur further eelgrass recovery.	Report, Monitoring, Results Presentation, Permanent Displays, Film	Sept. 2013	Complete
2013 Restoration Project: Use of a Novel Restoration Method to Enhance Oyster Populations and Improve Water Quality in Tidal Creeks	\$32,122	UNC Institute of Marine Sciences	Enhance oyster populations in lower portions of five tidal creeks along the eastern shore of Newport River, Carteret County.	Report, Monitoring, Results Presentation, Permanent Displays	Sept. 2013	Complete



Project Title	Funded Amount	Project Leader	Purpose	Deliverables	Completion Date	Status
2013 Restoration Project: Water Quality Restoration of Alligator River, Long Shoal River and Pamlico Sound	\$74,989	NC Coastal Federation	Install water control structures, swales and dikes to direct water into restored wetlands. Water re-directed to these wetlands reduces the amount of water pumped directly by farm operations into the Albemarle and Pamlico Sounds. Component of high priority comprehensive watershed restoration plan.	Report, Monitoring, Photos, Tours, Interpretative signs	Sept. 2013	Complete
2013 Restoration Project: Hoggard Millpond Restoration Project	\$49,500	Mid-East Resource Conservation and Development Council, Inc.	Restore spawning and nursery habitat for two species of river herring by implementing a multi-phase, multi-funded, integrated watershed project for Hoggard Mill Creek in Windsor, NC.	Report, Monitoring, Interpretive signs, Film	Sept. 2013	Canceled
Enhancement and Restoration of North Carolina Oyster Resources through Oyster Sanctuaries	\$34,875	NC Division of Marine Fisheries	Develop approximately 1.25 acres of West Bluff Oyster Sanctuary by deploying reef structures.	Report, Monitoring	June 2013	Complete
Estuary Awareness: Environmental Education Bookmark Contest	\$3,200	NCDACS Soil & Water Conservation	Conduct an educational bookmark contest, targeting fifth-grade students across 16 counties, with a theme focused on the estuaries	Conduct Contest, Distribute Winning Bookmark to Local Libraries, Report	Sept. 2013	Canceled
Support for the Implementation of an Ecosystem Based-Management CCMP	\$30,000	Virginia Institute of Marine Sciences	Assist with facilitating the incorporation of EBM elements into the Albemarle-Pamlico National Estuary Partnership program.	Report, Meetings, Briefs, Conceptual Ecosystem Models	Sept. 2013	Complete
Remote Sensing of Submerged Aquatic Vegetation (SAV) in the APNEP region	\$ 128,500	NC Dept. of Transportation	Use a Digital Mapping Camera to obtain remotely sensed imagery of selected SAV sites in the APNEP region	Digital Mosaics of SAV sites	Sept. 2016	In Progress
Roanoke River gage near Oak City (USGS Station Number 02081022)	\$5,900	NC DENR Div. of Water Resources	Operation and maintenance of Roanoke River Gage near Oak City to keep water flow/water quality historical record intact.	Report, Gage Data	Sept. 2013	Complete
Roanoke River gage near Oak City (USGS Station Number 02081022)	\$4,900	NC DENR Div. of Water Resources	Operation and maintenance of Roanoke River Gage to keep water quality historical record intact.	Report, Gage Data	Sept. 2014	In progress



Project Title	Funded Amount	Project Leader	Purpose	Deliverables	Completion Date	Status
CCMP Implementation Projects	\$182,000	Multiple	Identify projects that need financial or admin support from APNEP. PB will evaluate requests and administrate funding of projects.	Program admin, partnership building, CCMP implementation	Sept. 2016	In Progress
APNEP Symposium	\$9,832	APNEP	Symposium on health status and trends in APNEP region.	Elevated program profile, facilitation among committees and partners	Nov. 2013	Complete
Education and Outreach Assistant through AmeriCorps Program	\$6,392	NCDEE	Assisting with implementation of APNEP communication strategy through videography development/integration, other education and outreach events.	Public outreach & involvement, increased environmental awareness	Oct. 2013	In Progress
North Carolina Low Impact Development Summit	\$2,500	NCCF	Summit to unveil the latest technology and tools for low impact development.	Knowledge transfer, water quality improvements	June 2014	In progress
NC Division of Water Resources Project WET Facilitator Workshop	\$2,000	NC DWR	Workshop to train environmental educators.	Education and Outreach materials, training	June 2014	In progress
NC Coastal Federation Oyster Summit	\$2,002	NCCF	Summit to assess current restoration and management activities for oysters.	Knowledge transfer, improved restoration and management techniques	June 2014	In progress
NC Coastal Federation CAMA Land Use Planning Workshop 2013	\$652	NCCF	Workshop to discuss effective land use planning.	Knowledge transfer, implementation of LID	June 2014	Complete
Regional Workshop on CAMA Land Use Planning 2014	\$1,500	NCCF/ NC DCM	Workshop to discuss effective land use planning.	Knowledge transfer, implementation of LID	Sept. 2014	In progress
NC Museum of Natural Sciences Egret Workshop	\$2,250	NC MNS	Workshop to train educators on egret monitoring and the importance of estuaries.	Knowledge transfer, education and outreach materials, training	June 2014	Complete
Living Shorelines Summit						
Chowan River Basin Booklet Printing	\$2,000	ACRT	Booklet printed for the roundtable for the Chowan river basin.	Education and Outreach materials	June 2014	Complete
NC Catch Placemat Printing	\$2,000	NC Catch	Restaurant placemat printing.	Education and outreach materials	Sept. 2014	In progress
NC Heritage Trails Map Printing	\$2,000	Core Sound Waterfowl Museum &	Trail brochure printing.	Education and outreach materials	Sept. 2014	In progress



Project Title	Funded Amount	Project Leader	Purpose	Deliverables	Completion Date	Status
NC DMF Recreational Water Quality Monitoring	\$20,000	NC DMF	Bridge funding for bacteria contamination testing in coastal recreational waters.	Monitoring data, report	Nov. 2014	



I. LEVERAGE FUNDS

APNEP has actively sought alternative funding sources for partnership activities and projects to fulfill the CCMP goals. In addition, APNEP sought out additional avenues for collaborating with other agencies to assist in targeting these program funds towards CCMP and basin-wide goals. Where possible, APNEP worked to cost-share projects to increase the effectiveness or the magnitude of projects, even though in several cases the APNEP was not the primary catalyst for the project.

APNEP is working to leverage more funds through partnerships, projects and grants. APNEP will be working with NCDENR to develop a strategy for the development of additional state funds for program activities.

Additionally, APNEP staff will work with EPA staff to identify and develop strategies for leveraging funds beyond the EPA section 320 grant funds.

APNEP has been successful in its ability to promote the needs, as well as the successes, associated with natural resource management, protection and enhancement efforts in the A-P region. Several state conservation-funding sources were developed in response to research funded by the Albemarle-Pamlico Estuary Study. These programs include Clean Water Management Trust Fund, Clean Water State Revolving Fund Program, and the North Carolina Conservation Reserve and Enhancement Program.

FY 2015

In FY 2015 APNEP will continue to seek additional avenues for collaborating with other partners to assist in targeting funds to support the new CCMP implementation actions and the APNEP mission. Where possible, APNEP will actively seek alternative sources of funding for APNEP activities and projects to fulfill the goals of the CCMP.

FY 2014

In FY 2014 APNEP continued to seek partners and additional opportunities for partners in targeting actions and funds towards CCMP implementation. APNEP submitted its FY 2013 Leverage results in September 2012 to the EPA NEPORT database.



FY 2015 ESTIMATED FEDERAL COST SHARE

FY 2015 Budget

The estimated federal cost share grant for each NEP for FY 2014 is \$538,000*

APNEP Administration (Staff salaries, benefits**, longevity, rent, supplies, etc.)	\$ 272,805
Boards & Committees Support	\$ 4,000
Travel	\$ 10,500
Americorps Member	\$ 8,137
Implementation Projects	\$ 140,000
<i>Engage: Teacher Institute</i>	\$ 25,000
<i>Engage: Shad in the Classroom</i>	\$ 25,000
<i>Monitor: Submerged Aquatic Vegetation</i>	\$ 25,000
Indirect Costs (14.4%)	\$ 27,558
	<hr/>
	\$ 538,000

*** Includes: Benefits are based on Social Security (7.65 %) & Retirement (14.69 %) of position's annual salary
Medical Insurance Plan rate of \$5,435 per year and
Indirect Costs based NC DENR request as 14.4 % of federal salaries.*



APNEP Policy Board requests that the previous year's budget be included in the annual work plan for review and comparison purposes.

FY 2014 Budget

The estimated federal cost share grant for each NEP for FY 2014 is \$512,000*

APNEP Administration (staff salaries, benefits**, longevity, rent, supplies, etc.)	\$ 304,731
Boards & Committees Support	\$ 4,000
Travel	\$ 10,000
Programmatic & Partnership Activities	\$ 1,393
APNEP Symposium	\$ 8,000
Implementation Projects	\$ 94,000
<i>Engage: Teacher Institute</i>	\$ 11,000
<i>Engage: Shad in the Classroom</i>	\$ 30,000
<i>Monitor: Submerged Aquatic Vegetation</i>	\$ 20,000
Indirect Costs (13.3%)	\$ 29,043
	<hr/>
	\$ 512,000

** Amount not finalized, estimate from US EPA Region IV in May was \$512,000.*

*** Includes: Benefits are based on Social Security (7.65 %) & Retirement (14.31 %) of position's annual salary
Medical Insurance Plan rate of \$5,192 per year and
Indirect Costs based on 13.3 % of federal salaries.*



NON-FEDERAL COST SHARE (Match for FY 2014)

Summary of Match Requirements

NCDENR intends to provide \$538,000 for the required 1:1 non-federal match for FY 2014. This match will be provided through:

- 1) In-kind services provided by staff support for the Coastal Habitats Coordinator from the NC DENR.
- 2) State funds allocated to cover costs associated with projects to improve water quality through funding of the NC Clean Water Management Trust Fund (CWMTF) for one or more projects in the APNEP program boundary.

Summary of Non-federal State Match

In-kind Position (salaries and benefits)	\$ 88,401
Clean Water Management Trust Fund Project(s):	<u>\$ 449,599</u>
TOTAL:	\$ 538,000

In-kind Position Non-federal Match

The North Carolina Department of Environment and Natural Resources (NCDENR) intends to provide \$88,401 as part of the required 1:1 non-federal match for FY 2015. The match will be provided through in-kind services provided by staff of NCDENR.

The match position is responsible for program administration, support, community involvement and guiding implementation of the APNEP CCMP and the NC CHPP.

<u>POSITION</u>	<u>#</u>	<u>SALARY</u>	<u>EFFORT</u>	<u>Match</u>
Field Representative	1	67,816	1.0	67,816
			Benefits* 1.0	<u>20,585</u>
			Total In-Kind Service Match:	\$ 88,401

** Benefits are based on Social Security (7.65 %) & Retirement (14.69 %) of position's annual salary, plus Medical Insurance Plan rate of \$5,435 per year.*

In-kind Project/Services Non-federal Match

The North Carolina Clean Water Management Trust Fund intends to provide \$513,080 as part of the 1:1 non-federal match for FY 2014. The expenditure of non-federal funds will be provided through water quality improvement projects in one or more of the APNEP river basins.

Clean Water Management Trust Fund

CWMTF was created in 1996, in part in a response to a 1994 CCMP action. CWMTF provides grants to local governments, state agencies, and conservation non-profits to help finance projects that specifically address water pollution problems. CWMTF funds projects that enhance or restore degraded waters, protect unpolluted waters, and/or contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits.



TRAVEL

APNEP and EPA consider personal, face-to-face contact with peers and colleagues essential for information sharing and technology transfer. As part of the federal grant requirements to attend EPA-NEP meetings, APNEP is required to allocate minimum of \$10,000 as travel funds for program support, enhancement, education, and outreach support. These funds are to be used for activities such as:

- 1) Presentations at or participation in national or regional NEP and EPA meetings
- 2) Presentations at or participation in workshops or conferences
- 3) Travel to other NEPs or communities to provide peer-to-peer technical assistance
- 4) Travel to other NEPs or watersheds for assistance
- 5) Travel by NEP staff or stakeholders from other NEPs or watershed programs to provide NEP with assistance
- 6) Travel to national or international conferences to share information on the NEP

Stakeholders may include citizens, members of environmental or public interest organizations, business or industry representatives, academicians, scientists or technical experts. As a requirement of this grant agreement, members of the APNEP core staff are required to attend all meetings called on behalf of the NEPs. These funds cannot be used to pay for travel of Federal employees.

FY 2014

APNEP staff attended a number of meetings and conferences using the allotted travel funds and specific project funds or administration costs. Below is a summary of these activities that have occurred or are currently planned for the year:

Personnel	Date	Purpose	Location	Cost*
APNEP Staff	10/1/13 to 9/ 30/14	Normal Program Activities/ projects	APNEP area	4000*
Crowell/ Carpenter	10/2013	EPA- ANEP/NEP National Meeting	Mobile, AL	1500
Crowell	2/ 2014	EPA- ANEP/NEP National Meeting	Washington, DC	1200
Crowell/ Smart	3/2014	Chesapeake Bay STAC	Annapolis, MD	1200
Carpenter	4/2014	Carolina Climate Resilience Conference	Charlotte, NC	600
			Total*	\$ 8500

*Estimate up to September 2014

FY 2014 Projected Travel Estimates

All travel is allocated into three categories: In-State, Out-of-State, and EPA Required. All travel must be consistent with published 2010 NCDENR travel policies and regulations (<http://www.enr.state.nc.us/ooc/pdf/trav.pdf>). Due to the dynamic nature of the NEP, all travel cannot be scheduled a year ahead: therefore, only an estimate can be provided based on established NCDENR rates (below). Some travel is associated with specific projects, and travel costs are included in budgeted amounts.



In-State:

In-State travel is primarily for program staff to conduct routine business associated with APNEP daily operations, staff training or topical meetings germane to the program. It may also cover non-staff for NEP business (i.e., board and committee members, guest speakers, and experts). Rates are listed below.

In-state estimate for FY 2015: 30 trips, among four staff members; average cost per trip approximately \$100. Total \$3,000

EPA-associated Out-of-State:

The NEPs hold two national meetings each year (these may be in same fiscal year or not). Each program is strongly encouraged to participate in the meetings. The spring meeting is held in the Washington, DC area and the fall meeting location rotates among the different NEP locations. The level of staff participation will vary depending on the agenda for a particular meeting. Generally one or two staff members attend. Travel may also cover non-staff (e.g., Policy Board or Advisory Committee members).

Estimate for FY 2015: two trips, three persons; average cost per trip per person is approximately \$1000 (based on prior travel). Total \$6,000

Other Out-of-State:

Out-of-state travel is primarily for program staff to conduct business associated with the NEP, and to attend training or topical meetings germane to the program. It may also cover non-staff (e.g., board and committee members, guest speakers, experts) for NEP related activities. Rates are listed below.

Out-of-State Estimate for FY 2015: two trips, two days; average cost per trip approximately \$500. Total \$1,000



2012-14 NC DENR TRAVEL RATES

Item	In-State	Out of State	Overnight Trip	Day Trip
Breakfast	\$ 8.20	\$ 8.20	Leave Office before 6:00 AM	Leave Office before 6:00 AM; Extend workday by 2 hours
Lunch	\$ 10.70	\$ 10.70	Leave Office by 12:00 Noon; Overnight return after 2:00 PM	Never claimed on day trip
Dinner	\$ 18.40	\$ 20.90		Depart office before 5:00 PM Return after 8:00 PM Workday extended by 3 hours
Hotel (+ taxes)	\$ 65.90	\$ 77.90		

FY 2015 Projected Travel

Personnel	Date	Purpose	Location	Estimated Cost
APNEP Staff & volunteers	October 2014 to September 2015	Normal program activities in the region	Albemarle – Pamlico Region	\$3,000
APNEP Staff	October 2014	NEP national fall meeting	TBA	\$3,000
APNEP Staff	February 2015	NEP national spring meeting	Washington, DC Area	\$2,000
APNEP Staff	October 2014 to September 2015	Additional relevant national meetings	Various	\$2,000



APPENDIX A: 2013 Program Review

2013 Program Review

The EPA Coastal Management Branch conducted an on-site program evaluation of APNEP with staff and program partners between April 29 and May 1. APNEP submitted the required evaluation materials in February. A copy of the review package is available from the APNEP Office.

A September 30, 2013 letter stated that the EPA found that APNEP continues to make “significant progress” in implementing its CCMP and determined that the APNEP “passed” the 2013 Program Evaluation and is eligible for continued funding under §320 of the Clean Water Act. A copy of the review letter is attached.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP. 30 2013

OFFICE OF WATER

John E. Skvarla, III, Secretary
North Carolina Department of Environment
and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

Dear Secretary Skvarla:

The purpose of this letter is to provide the results of the U.S. Environmental Protection Agency's (EPA) 2013 Program Evaluation (PE) of the Albemarle-Pamlico National Estuary Partnership (APNEP). We want to thank APNEP's Director and staff, as well as their many partners, for the PE package, the site visits, and their responses to our follow-up questions about the package. We also appreciate APNEP's facilitation of the PE Team's site visit that enabled the Team to meet APNEP staff and visit project sites and leaders in the Program's study area.

The PE benefited from the voluntary participation of Troy Rice, Director of the Indian River Lagoon National Estuary Program, who served in an ex officio capacity on the PE Team. Mr. Rice's participation provided other Team members (Marilyn Katz, EPA Headquarters, and Rhonda Evans, EPA Region 4) with an invaluable National Estuary Program (NEP) director's perspective on the perceived strengths and challenges of the Program. He also shared ideas that might be useful for the Program and received insight into APNEP work that he can apply to his own NEP.

The primary purpose of a PE is to help the EPA determine whether the 28 programs included in the NEP are making adequate progress implementing their Comprehensive Conservation and Management Plans (CCMPs). The evaluation process has considerably enhanced EPA Headquarters and Regional knowledge of each individual NEP and promoted sharing of innovative projects and approaches across the NEPs. In addition, EPA uses the evaluation process to assess how the NEPs support Clean Water Act (CWA) core programs and to evaluate the extent and effectiveness of the NEPs' contributions to achievement of one relevant EPA *2011-2015 Strategic Plan* goal—Goal 2: Protecting America's Waters, Objective 2.1, Protect Human Health and Objective 2.2, Protect and Restore Watersheds and Aquatic Ecosystems.

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Based on the PE Team findings, APNEP made significant progress implementing its original 1994 CCMP during the first three years of the review period and demonstrated that it was making significant progress implementing its 2012 CCMP during the fourth year of the review period. We are pleased to announce that APNEP has passed the 2013 PE and is eligible for continued funding under §320 of the CWA.

2013 Program Evaluation Findings

The following summary highlights the PE Team's key findings by identifying APNEP's: (I) Progress Made in the Areas Highlighted in the 2009 Program Evaluation, (II) Support of CWA Core Programs, (III) Strengths, and (IV) Challenges. This summary is intended to recognize the Program's successes and to recommend efforts to further strengthen the Program. The Program's response to these recommendations will be evaluated in the next PE cycle.

I. Progress Made in the Areas Highlighted in the 2009 PE Review

Program Implementation and Reporting--Maintaining Visibility and Independence

The 2009 PE findings letter recommended that the North Carolina Department of Environment and Natural Resources (DENR) re-locate APNEP from the Division of Natural Resource Planning and Conservation (Division) to which the Program had been moved in 2007 to a different organizational home in which the Program would be more visible, independent, and able to fully play a leadership role in the Albemarle-Pamlico estuarine system protection and restoration. While DENR did not re-locate APNEP during the 2009-2012 period, it moved APNEP from a "division" to an "office", which helped to make the Program more visible and influential. The move enabled APNEP and the entire Management Conference to develop more credibility as an autonomous entity independent of any particular political party, agency, stakeholder, or interest group. It ensured that the Program complied with the governance provisions of NEP authorizing language--§320 of the Clean Water Act and associated policy.

As a result, during the review period the Program:

- continued to increase the number of important partnerships with other DENR programs as well as with federal agency, non-governmental organization, and academic research scientist groups in order to complete and begin full-scale implementation of its significantly-enhanced CCMP;
- made full use of social media tools, which greatly enhanced the Program's on-line presence and raised awareness of estuarine protection and restoration issues on the part of the general public, and
- worked to engage the public in development of the 2012 CCMP.

Ecosystem Status and Trends--Demonstrate Environmental Progress

The 2009 PE findings letter also called for expedited completion of the Program's Science and Technical Advisory Committee monitoring plan, implementation of the monitoring program, and initiation of a State regional ecosystem assessment that would influence decision makers' allocation of



monitoring resources. In addition, the findings letter recommended that APNEP draft a strategy for measuring the achievement of environmental results stemming from Program-supported projects.

The PE Team found that during the 2010-2013 review period, the Program took very important steps to set the stage for demonstrating environmental progress. The Program focused considerable effort on reforming its approach to estuarine protection and restoration by completing both the new *2012-2022 Comprehensive Conservation and Management Plan* that reflects an ecosystem-based management approach to estuarine protection and restoration and the *2012 Albemarle-Pamlico Ecosystem Assessment (Assessment)*. The Assessment provides information about the study area's ecosystems and is intended to guide policy and management decision making about monitoring and priority efforts to sustain the region's significant resources. The NEP Science and Technical Advisory Committee (STAC) Executive Board guided development of the Assessment and oversaw the peer review of individual indicator assessments included in the document.

The Program also supported research that helped identify significant data gaps that warrant additional monitoring or sampling. The Assessment includes discussion of those gaps and presents a common indicator monitoring proposal template for a long-term monitoring strategy. In the coming years, the Program will continue to develop indicators, including socioeconomic indicators, and identify ecosystem targets necessary to track CCMP implementation.

The Program acknowledged in 2013 PE documentation that it deferred new monitoring plan development until APNEP was in a position to identify ecosystem outcomes, metrics, and targets. Over the next five years EPA expects that the Program will have completed development of an integrated monitoring strategy and that priority monitoring will be well underway. The Ecosystem Assessment provides a strong foundation for the development of the monitoring strategy. Based on mapping completed last year, seagrass abundance/distribution could be a measure to which the Program might aspire. Other metrics could be chlorophyll *a*, total nitrogen, or total phosphorus concentrations.

II. Support of CWA Core Programs

EPA commends APNEP for working with its partners to reduce potential nutrient inputs to the system. The Program's assessment of water quality trends and monitoring needs, DENR's stakeholder forum on nutrient loadings, the Program's development of a *Nitrogen Loss Estimation Worksheet*, and the STAC's support of science-based standards are all evidence of an increased focus on nutrient issues.

Annual work plans for the years 2009-2012 included the following activities that supported CWA core programs:

- the Chowan Healthy Waters Initiative—APNEP was instrumental in coordinating with the bi-state team working on this initiative, which targets protection of the healthiest waters in the Chowan River Basin watershed;
- wastewater infrastructure risk analysis and planning—APNEP garnered federal, state, and local resources to analyze wastewater treatment systems in the towns of Columbia and Manteo (North Carolina) and provided recommendations to municipal staff about how to improve the resiliency of those systems in a cost-effective manner;

- restoration projects—APNEP initiated, funded, and participated in numerous restoration projects including hydrologic restoration at Dismal Swamp and Alligator River National Wildlife Refuges, several oyster restoration projects, demonstration projects for stormwater treatment and detention projects, rain gardens, nature trails, natural landscaping demonstrations and a number of wetlands and riparian buffer restoration projects;
- local area leadership activities—APNEP funded a number of projects aimed at enhancing local government and teacher knowledge about CWA programs and ways to enhance CWA program implementation. Projects included: (1) a “Coastal Growth Leadership Training for Local Governments” event, (2) sponsorship of annual teacher training institutes and outdoor classroom symposia, (3) sponsorship of an agricultural BMP symposium, (4) funding of several county water reuse and rainwater harvesting demonstration projects, and (5) sponsorship of a Coastal Explorations Workshop for formal and informal educators; the workshop purpose was to develop curricula for 3rd to 5th grade teachers;
- research and monitoring initiatives—APNEP provided funds and assistance to a number of area universities and non-governmental organizations for research on the effectiveness of restoration projects, river herring sampling, and water quality monitoring efforts like FerryMon—a partnership among North Carolina Department of Transportation ferries, University of North Carolina-Chapel Hill, and Duke Universities, and the DENR Division of Water Quality that monitors water quality and habitat changes within the Sounds; and
- supported the Citizen’s Advisory Committee and the Science and Technical Advisory Committee in their efforts to provide leadership on identification of, initiation and completion of numerous projects that support CWA core program implementation.

III. Strengths

Program Implementation and Reporting--Publication of Two Crucial APNEP Documents

The PE Team was very impressed by the Program’s completion and release of two key documents—the *2012-2022 Comprehensive Conservation and Management Plan (CCMP)* and the *2012 Albemarle-Pamlico Ecosystem Assessment (Assessment)*. The PE Team found the updated CCMP to be a holistic, ecosystem-based management plan that lays the groundwork for effective watershed management of the study area’s natural resources in the coming years. The PE Team noted the fact that the CCMP’s three over-arching goals derive from ecosystem-based management principles, i.e., the goals take into account the need for both natural resource health and human well-being. The PE Team also was impressed by the fact that CCMP outcomes, objectives, and priority actions are based on the Program’s rigorous analyses of study area conditions and established partner actions. In addition, the PE Team liked the straightforward and comprehensive focus of the three CCMP goals—the sustenance of human communities, the health of native living resources, and healthy and abundant water resources.

The PE Team also appreciated that the Assessment brings together in one document essential data about the biological, physical, and chemical characteristics of the estuarine ecosystem as well as data about human population and extent of land cover across the study area. In addition, like the CCMP, the Assessment is a major tool to inform policy and natural resource decision making. The Program and its partners will use the Assessment to help establish protection and restoration priorities, identify emerging issues that need heightened management attention, and determine where there are gaps in scientific understanding of particular ecosystem conditions.

The PE Team congratulates DENR leadership--Dr. Crowell and Dr. Carpenter--for having had the vision, collaborative skills, and determination to lead the development and completion of the updated CCMP and the Assessment. Also, the Team acknowledges that collaborative effort between DENR and the Virginia Institute of Marine Sciences that was crucial to development of the CCMP. Adoption of the ecosystem-based management plan and the Assessment, both of which are based on widely-accepted watershed-management principles, has put APNEP in a leadership role within the wider estuarine management community as well as within the community of federal, non-governmental organization, and academic partners focused specifically on the Albemarle-Pamlico system. The Program now has the standing to inform decision makers about policies and programs to effectively address current and emerging challenges to that system.

Ecosystem Restoration and Protection (Habitat and Water Quality)--Partnerships with Expert Scientists

APNEP is one of many NEPs that has forged extensive partnerships with applied research scientists from federal agencies like the U.S. National Oceanic and Atmospheric Administration, the U.S. Fish and Wildlife Service, and from the North Carolina Division of Marine Fisheries. During the review period, the Program formed partnerships with scientists who have expertise in such areas as: (1) shallow habitat nitrogen cycling and oyster de-nitrification, (2) native fish populations, essential fish habitat, and fish hatcheries; (3) stormwater runoff microbial source tracking, (4) impacts of land use on nutrient and sediment loadings in coastal streams, (5) aerial mapping of submerged aquatic vegetation, (6) sentinel site restoration and monitoring, and (7) sea level rise.

In addition, during the review period senior scientists from federal and state agencies as well as from academic institutions demonstrated their commitment to the Program and its mission by serving on the Science and Technical Advisory Committee (STAC), which helped develop the Assessment. By forging partnerships with a variety of scientists, the Program brought world-class expertise to bear on CCMP priority issues and challenges and reinforced the importance of fully engaging the scientific community in evidence-based approaches to addressing stubborn challenges in the study area like excess nutrient loads, loss of fish habitat, coastal erosion, and sea level rise.

Outreach and Public Involvement--Development and Implementation of a Social Media Strategy

The PE Team was very impressed by the development and implementation of a social media strategy and associated tools. The Program now has an important on-line presence, and is well-positioned to raise awareness about study area natural resources and to educate even more audiences than it already has via its intensive teacher education workshops and school demonstration projects. The strategy is a model for how NEPs can effectively use new media to expand the number of individuals and communities with a basic knowledge of the ecosystem and with a good understanding of ways that they can participate in its protection and restoration. The PE Team recommends that the Program take advantage of opportunities to present information about the strategy at local and national meetings, especially at EPA-NEP national meetings and those sponsored by the Association of National Estuary Programs.

IV. Challenges

Program Implementation and Reporting--Maintaining Visibility and Independence

Given the success of APNEP efforts to increase the Program's visibility and influence and the importance of Program independence to effective CCMP implementation, EPA looks forward to DENR's continued support of APNEP autonomy to manage and implement its programs and activities as specified in the terms and conditions of every future assistance agreement and as called for by the APNEP Policy Board. However, the PE Team remains concerned about APNEP's visibility and independence, and notes that the Program must operate under a governance scheme that supports the decisions of its Management Conference as called for by §320 of the Clean Water Act. The Governor's Executive Order establishing APNEP provides important guidance about governing principles for the Program.

In light of recent personnel policy changes announced by DENR, the Department is reminded that APNEP staff positions are funded via the annual federal EPA assistance agreement and that Program staffing levels as well as Program and position assignment decisions require the consensus of the APNEP Policy Board. To continue effective program operations and successful CCMP implementation, APNEP should maintain current staffing levels, which include the Program's established positions of Program Director, Program Scientist, Project Manager, Policy and Engagement Manager, and Coastal Habitat Coordinator. Also, information gathered during the PE Team's site visit indicated that the Program has lacked adequate administrative support for many years. To better support APNEP, the PE Team encourages DENR to provide the Program with much-needed direct administrative support.

Ecosystem Status and Trends—Need for Assessment and Monitoring

Now that the 2012-2022 CCMP and 2012 Assessment are in place, the Program needs to focus on development of a long-term monitoring plan and of indicators of ecosystem and socio-economic conditions. The PE Team recognizes that the size of the study area, its diversity of natural resources, and the distribution of its human population pose special challenges to those attempting to assess and monitor ecosystem conditions. The Program will need support from DENR senior and division leadership while also leveraging other state and federal agency partner resources in order to develop and implement a full-scale monitoring plan and to effectively track indicators of condition.

Ecosystem Restoration and Protection—Need to Measure and Report on Short-term Project Outcomes

The Program should work to develop a protocol for measuring the short-term outcomes of projects and to establish and document project baselines against which to measure, track, and report on progress. These steps would move the Program beyond CCMP Update and Assessment to measurement of project success. They would also promote the Program as an entity committed to producing environmental results. Additionally, the Program's engagement with the North Carolina Watershed Restoration and Improvement Team, Chowan River Roundtable, the South Atlantic Landscape Conservation Cooperative, and the Southeast Natural Resource Leadership Group Pilot Project Development should provide APNEP opportunities to enhance regional partnerships and can facilitate

the joint achievement of both CCMP goals and the goals of these collaborative networks. This would place the Program in a regionally significant leadership position to leverage projects with new partners and focus these larger groups toward meeting the goals of the CCMP.

Ecosystem Restoration and Protection—Need to Address Nutrient Criteria

The multiple ecosystem outcomes under APNEP's CCMP Goal 3 are intended to ensure that contaminants do not harm species dependent on waters of the Albemarle-Pamlico Estuarine System. One contaminant class long targeted by APNEP and included in CCMP Ecosystem Outcome 3b is nutrients, specifically, forms of nitrogen and phosphorus. A well-established regulatory tool in the water quality manager's toolbox is the establishment of state water quality standards, which include a designated use and criteria. Numeric nutrient criteria (NNC) are favored by EPA for the designated use of protecting aquatic life. While North Carolina's Division of Water Resources, has established a numeric chlorophyll-*a* criteria, it has yet to embrace NNC as a complementary water quality management tool.

EPA recognizes that as a non-regulatory entity, APNEP can't develop (in the case of nutrient concentrations) nor revise (in the case of chlorophyll-*a* concentrations) numeric water quality criteria per se. But, EPA proposes over the next five years to conduct the following activities to ensure that water quality criteria in the Albemarle-Pamlico Basin help meet CCMP Ecosystem Outcome 3b:

- work with partners to collect water quality monitoring data,
- support the development of models,
- facilitate stakeholder involvement in nutrient management,
- investigate relationships between contaminant loads and living resources, and
- propose scientifically-based targets that DWR may consider as numeric criteria.

Also, in the revised CCMP, nutrient management is addressed either implicitly or explicitly under multiple plan objectives. The PE team commends APNEP on its current approach to addressing the nutrient management issue by identifying several CCMP actions such as: C1.1--Establish contaminant strategies for waters not meeting water quality standards), C1.2--Facilitate the implementation of existing contaminant management strategies), and D1.4--Coordinate outreach efforts regarding the proper application of fertilizers to reduce nutrient runoff).

Program Implementation and Reporting—Financial Strategy

The PE Team recognizes that APNEP is dependent on §320 funding and state match for most of its financial resources and that it can sometimes be challenging to collaborate across program boundaries. However, the Team encourages DENR to assist the Program in leveraging the resources of other DENR and state programs. Those efforts will help promote the Program's mission and to raise its visibility among those who are unfamiliar with APNEP. These efforts also may provide new opportunities to leverage projects with new partners, and may promote the adoption of holistic approaches to estuarine protection and restoration by those partners.

The PE Team also recommends that over the next three years, APNEP develop a strategy and funding plan for its communications efforts and identify a tool for assessing the impact of its

investments in communications and outreach, including in social media. By following up on this recommendation, the Program will effectively engage planning and adaptive management tools to set goals for and assess the effectiveness of its outreach and communications efforts. Program follow-up on this recommendation will also demonstrate that the Program is results-driven and works to provide deliverables in the most efficient manner.

Thank you again for participating in the PE process and for DENR's support of APNEP. The Program is poised to make significant progress implementing the 2012-2022 CCMP. We welcome any additional thoughts you may have either about the evaluation process itself or about EPA's involvement in the implementation of the APNEP CCMP. If you have any questions or comments, please contact me at (202) 566-1244.

Sincerely,



Bernice L. Smith, Ph.D., Chief
Coastal Management Branch

cc: Brad Ives, DENR, Assistant Secretary for Natural Resources
Dr. William L. Crowell, Jr., Director, APNEP
Todd Miller, Chair, APNEP Policy Board
Linda Pearsall, DENR, Director of Office of Communications,
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Benita Best-Wong, U.S. EPA Headquarters
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Dr. Linda Rimer, U.S. EPA Region 4
Troy Rice, Director, Indian River Lagoon
National Estuary Program
Rhonda Evans, U.S. EPA Region 4
Marilyn Katz, U.S. EPA Headquarters



APPENDIX B: Giattina Memo



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

January 6, 2014

Memorandum

To: Cecilia Holden
Special Assistant to the Secretary
North Carolina Department of Environment & Natural Resources

From: Jim Giattina 
Director, Water Protection Division
U.S. Environmental Protection Agency

Subject: Combined Management Structure – APNEP and CWMTF

Thank you for reaching out to me to discuss your plan to implement a common management structure for the Albemarle-Pamlico Nation Estuary Program and the Clean Water Management Trust Fund programs. The Environmental Protection Agency fully supports your plan and we recognize the benefits of having one manager overseeing both of these business units. I understand the manager will be jointly funded and will provide personnel management and on-going oversight over program results. As you know the EPA is a strong supporter of the National Estuary Program, recognizing the significant benefits this type of locally-led, collaborative effort has provided and will continue to provide to the Albemarle-Pamlico ecosystem. Similarly, while not a federal program, we recognize the significant contribution the CWMTF has made to restoring and protecting the waters of North Carolina. As I understand your plan, the intent in joint funding is to have additional money available to further the core mission of each program. For example, money saved can be used for grants management automation that can result in more efficiently managing grants and a quicker turnaround time on the overall administration of the grants. Long-term, the savings in administrative costs can be used to award additional grants, again ensuring maximum use of the total funding available.

As you noted in our telephone conversation today, NCDENR staff will accurately account for time spent on each of these programs through proper time accounting and recording. This will ensure resources working on APNEP versus CWMTF are charged according to the program benefiting from hours worked. If you encounter any unexpected problems or determine that the shared management structure is no longer functioning as expected, we stand ready to work with you to reassess the situation and develop further approaches that are mutually beneficial to the State and the EPA in accomplishing our shared objectives of restoring and protecting the waters of the Albemarle-Pamlico estuary and the waters of North Carolina.

Again, thank you for seeking our input on this effort. We look forward to continuing to work with you as you implement these changes. We realize the importance and necessity of continually improving administrative processes as we both face ongoing budget challenges. Feel free to contact me directly with any questions (404)562-9345.

cc: John Skvarla, NC DENR Secretary
Bill Crowell, NC APNEP Director
Bryan Gossage, Office of Land and Water Stewardship Director

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Jennifer Derby, Acting Chief of the Wetlands, Coastal and Oceans Branch
Rhonda Evans, Albemarle-Pamlico NEP Coordinator



APPENDIX C: 2012 CCMP GOALS AND OUTCOMES

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

Ecosystem Outcomes:

- a. *Waters are safe for personal contact.*
- b. *Designated surface and ground water supplies are safe for human consumption.*
- c. *Surface hydrologic regimes sustain regulated human uses.*
- d. *Fish and game are safe for human consumption.*
- e. *Opportunities for recreation and access to public lands and waters are protected and enhanced.*

Goal 2: A region where aquatic, wetland, and upland habitats support viable populations of native species

Ecosystem Outcomes:

- a. *The biodiversity, function, and populations of species in aquatic, wetland, and upland communities are protected, restored, or enhanced.*
- b. *The extent and quality of upland, freshwater, estuarine, and near-shore marine habitats fully support biodiversity and ecosystem function.*
- c. *Non-native invasive species do not significantly impair native species' viability or function, nor impair habitat quality, quantity, and the processes that form and maintain habitats.*

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

Ecosystem Outcomes:

- a. *Appropriate hydrologic regimes support ecological integrity.*
- b. *Nutrients and pathogens do not harm species that depend on the waters.*
- c. *Toxics in waters and sediments do not harm species that depend on the waters.*
- d. *Sediments do not harm species that depend on the waters.*

Mission

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

