



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.

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

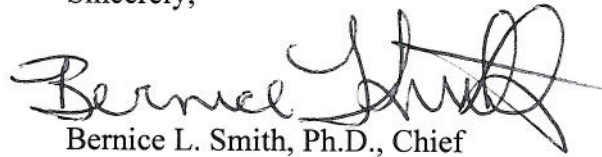
The PE Team recognizes that APNEP is dependent on §320 funding and state match for most of its financial resources and that it can sometimes be challenging to collaborate across program boundaries. However, the Team encourages DENR to assist the Program in leveraging the resources of other DENR and state 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,



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