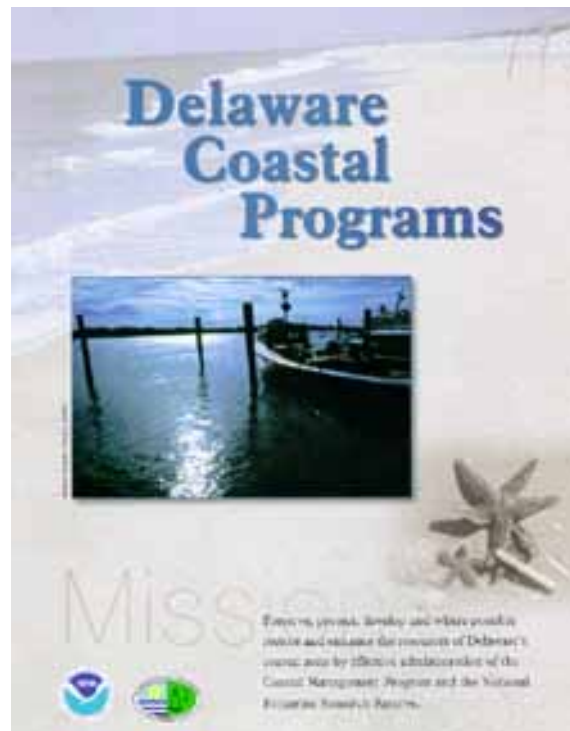


Final Evaluation Findings

**Delaware Coastal Management Program
and
Delaware National Estuarine Research Reserve**

September 2002 – December 2005



Office of Ocean and Coastal Resource Management
National Ocean Service
National Oceanic and Atmospheric Administration



TABLE OF CONTENTS

I. Executive Summary1

II. Program Review Procedures

A. Overview

B. Document Review and Issue Development

C. Site Visit to Delaware

III. The Delaware Coastal Programs

A. Delaware Coastal Programs Description

B. Accomplishments, Review Findings and Recommendations

 1. Coordination and Collaboration

 a. Horseshoe Crabs and Shorebirds Research

 b. Delaware Bay Benthic and Sub-Bottom Mapping

 2. Land Acquisition

IV. The Delaware Coastal Management Program

A. Coastal Program Description

B. Accomplishments, Review Findings and Recommendations

 1. Program Operations and Management

 a. Program Staffing and Succession Planning

 2. Coastal Habitat

 a. Open Space Issues

 3. Water Quality

 a. Implementation of the Delaware Coastal Nonpoint Pollution Control Program

 4. Coastal Hazards

 a. Shoreline Management

 5. Coastal Dependent Uses and Community Development

 a. South Wilmington Special Area Management Plan

 6. Government Coordination and Decision Making

 a. Grants Programs

 b. CZMA Performance Measurement System

 c. Federal Consistency

V. The Delaware National Estuarine Research Reserve

A. Reserve Program Description

B. Accomplishments, Review Findings and Recommendations

 1. Operations and Management

 a. Management Plan

 b. Reserve Advisory Committee

 c. Facilities

 2. Research and Monitoring

 a. Research for Coastal Management

- b. System-Wide Monitoring Program
- 3. Education, Interpretation and Outreach
 - a. K-12 Education
 - b. Public Education
 - c. Coastal Decision-Maker Workshops
- 4. Stewardship Program
 - a. Resource Management
 - b. Volunteer Program

VI. Conclusion

VII. Appendices

- Appendix A. Program Response to 2003 Evaluation Findings
- Appendix B. People and Institutions Contacted
- Appendix C. People Attending the Public Meeting
- Appendix D. Summary of Accomplishments
- Appendix E. Summary of Recommendations

I. EXECUTIVE SUMMARY

Sections 312 and 315 of the Coastal Zone Management Act (CZMA) of 1972, as amended, require the National Oceanic and Atmospheric Administration (NOAA) to conduct periodic performance evaluations of federally approved Coastal Management Programs and National Estuarine Research Reserves (NERRs). This review examined the operation and management of the Delaware Coastal Management Program (DCMP) and the Delaware National Estuarine Research Reserve (DNERR) during the period of September 2002 through December 2005. DCMP and DNERR compose the Delaware Coastal Programs (DCP) and are administered by the Delaware Department of Natural Resources and Environmental Control's (DNREC) Division of Soil and Water Conservation.

The fundamental conclusion of this evaluation is that DNREC is successfully implementing and enforcing its federally approved Coastal Management Program and National Estuarine Research Reserve. This document contains nine Program Suggestions that describe actions that NOAA believes DNREC should take to improve the programs but are not currently mandatory. Program Suggestions that are reiterated in consecutive evaluations due to continuing problems may be elevated to Necessary Actions that address programmatic requirements and *must* be implemented. This document contains no Necessary Actions. DNREC is expected to address the recommendations by the time of the next §312 program review.

II. PROGRAM REVIEW PROCEDURES

A. OVERVIEW

The Coastal Zone Management Act (CZMA) of 1972, as amended, established the Coastal Zone Management Program and the National Estuarine Research Reserve System. Sections 312 and 315 of the CZMA require the National Oceanic and Atmospheric Administration (NOAA) to conduct periodic performance reviews of federally approved Coastal Management Programs and National Estuarine Research Reserves. This document describes the evaluation findings of NOAA's Office of Ocean and Coastal Resource Management with respect to the operation and management of the Delaware Coastal Management Program (DCMP) and the Delaware National Estuarine Research Reserve (DNERR) during the period of September 2002 through December 2005. This document contains a description of the review procedures and the program, evaluation findings, major accomplishments during the review period, recommendations, a conclusion, and appendices.

NOAA began its review of DCMP and DNERR in October 2005. The §312 evaluation process involves four distinct components:

- An initial document review and identification of specific issues of particular concern;
- A site visit to Delaware including interviews and a public meeting;
- Development of draft evaluation findings; and
- Preparation of the final evaluation findings, partly based on comments from the state regarding the content and timetables of necessary actions specified in the draft document.

The recommendations made by this evaluation appear in boxes and bold type and follow the findings section where facts relevant to the recommendation are discussed. The recommendations may be of two types:

Necessary Actions address programmatic requirements of the CZMA's implementing regulations and of the *Reserve* approved by NOAA. These must be carried out by the date(s) specified;

Program Suggestions denote actions that the OCRM believes would improve the program, but which are not mandatory at this time. If no dates are indicated, the state is expected to have considered these Program Suggestions by the time of the next CZMA §312 evaluation.

A complete summary of accomplishments and recommendations are outlined in section VI.

Failure to address Necessary Actions may result in future finding of non-adherence and the invoking of interim sanctions, as specified in CZMA §312(c). Program Suggestions that are reiterated in consecutive evaluations to address continuing problems may be elevated to Necessary Actions. The findings in this evaluation document will be considered by NOAA in making future financial award decisions relative to the DCMP and DNERR

B. DOCUMENT REVIEW AND ISSUE DEVELOPMENT

The evaluation team reviewed a wide variety of documents prior to the site visit, including: (1) federally approved Environmental Impact Statements and program documents; (2) financial assistance awards and work products; (3) semi-annual performance reports; (4) official correspondence; (5) previous §312 evaluation findings; and (6) relevant publications on natural resource management issues in Delaware.

Based on this review and on discussions with the Office of Ocean and Coastal Resource Management's (OCRM) Coastal Programs Division and Estuarine Reserves Division, the evaluation team identified the following priority issues:

- The manner in which DCMP and DNERR coordinate with one another and meet individual program goals, as well as how they coordinate with other federal, state, and local agencies and programs;
- The status of both DCMP and DNERR grant tasks and reporting;
- The implementation of state and federal consistency authority;
- The status of DNERR facilities and resource management;
- The status and effectiveness of DNERR staffing and programs, and participation in national research, monitoring, and education programs;
- The visibility of DNERR research, monitoring, and education programs;
- The status of DNERR's management plan revision; and
- The manner in which DCMP and DNERR have addressed the recommendations contained in the §312 evaluation findings released in 2003.

C. SITE VISIT TO DELAWARE

Notification of the scheduled evaluation was sent to DNREC, DCMP, DNERR, relevant federal environmental agencies, Delaware's congressional delegation, and regional newspapers. In addition, a notice of NOAA's "Intent to Evaluate" was published in the *Federal Register* on September 29, 2005.

The site visit to Delaware was conducted on December 5-9, 2005. Keelin Kuipers and Kim Penn, Evaluation Team Leaders, OCRM National Policy and Evaluation Division; Diana Olinger, DCMP Program Specialist, OCRM Coastal Programs Division; Cory Riley, DNERR Program Specialist, OCRM Estuarine Reserves Division; Brian Lynn, Coastal/Shorelands Section Manager, Washington Department of Ecology; and Frank Lopez, Reserve Manager, Old Woman Creek NERR, Ohio, formed the evaluation team.

During the site visit, the evaluation team interviewed DCMP and DNERR staff, senior DNREC and other state officials, federal agency representatives, coastal researchers, environmental educators, civic group representatives and private citizens. Appendix B lists people and institutions contacted during this review.

As required by the CZMA, NOAA held an advertised public meeting on Wednesday, December 7, 2005, at 6:00 p.m., at the Delaware Reserve, 818 Kitts Hummock Road, Dover, Delaware.

The public meeting gave members of the general public the opportunity to express their opinions about the overall operation and management of DCMP and DNERR. There were no registered attendees at this public meeting.

The critical support of DCMP and DNERR staff with the logistics and planning of the site visit is gratefully acknowledged.

III. THE DELAWARE COASTAL PROGRAMS

A. DELAWARE COASTAL PROGRAMS DESCRIPTION

The Delaware Coastal Management Program (DCMP) and the Delaware National Estuarine Research Reserve (DNERR) are known as the Delaware Coastal Programs, which are housed within DNREC's Division of Soil and Water Conservation. The mission of the Delaware Coastal Programs is to preserve, protect, develop and where possible restore and enhance the resources of Delaware's coastal zone through effective administration of DCMP and DNERR. The programs coordinate their efforts throughout DNREC and with many outside public and private organizations in order to protect the state's coastal environment against increasing pressures ranging from residential development to the competing demands of recreation and commerce on state waters.

B. ACCOMPLISHMENTS, REVIEW FINDINGS AND RECOMMENDATIONS

1. Coordination and Collaboration

Many of the Delaware Coastal Programs' accomplishments during this evaluation period are due to successful collaborative efforts of the Programs' dedicated and creative staff. Both DCMP and DNERR staff demonstrate a strong understanding of current coastal management issues in Delaware, and of the opportunities for cooperative management of them. The evaluation team found that the coordination between the Programs is excellent. The success of this relationship stems from program-specific objectives which complement and enhance each other's particular goals.

A challenge of working in such close partnership is the ability of DCMP and DNERR to maintain strong individual identities. This was highlighted as a concern in the 2003 evaluation findings. Consequently, Coastal Programs' management identified the need to conduct a long-term planning exercise that would include defining Program (and staff) roles and responsibilities in accordance with the Coastal Zone Management Act goals. A series of retreats were consequently held that involved staff from both DNERR and DCMP. During these retreats, staff reviewed and discussed Program-specific missions and goals, and helped to identify future directions. These discussions helped to clarify the connections and distinctions between DCMP and DNERR and their individual statutory authorities.

New facilities and initiatives during this evaluation period have also increased the visibility and public knowledge of both Programs, further strengthening their individual identities. DNERR's exposure has greatly increased due to the physical presence of the expanded St. Jones Center and the Blackbird Creek land acquisition. The Reserve's facilities are used extensively by DNREC, community organizations and researchers from across the state and region. These visitors gain a better understanding of DNERR and NERR System programs and goals through close contact with Reserve staff. Newly acquired properties along the Blackbird Creek will provide much needed access to the Reserve component, as well as the ability to increase public programming in the area. Though the DCMP does not have a flagship facility that highlights its unique contributions to coastal management, specific Coastal Program initiatives, such as the Natural

Resource Management Grants, have significantly increased the visibility of the Program. Outreach tools, such as semi-annual newsletters, have also been effective tools in defining Program goals and identities for the general public.

OCRM believes that DCMP and DNERR have done a good job clarifying the unique and overlapping roles of the Programs and staff, both internally and for Program partners and the general public.

Highlights of Collaborative Efforts

a. Horseshoe Crabs and Shorebirds Research

Delaware Coastal Programs have worked extensively on research and management questions related to horseshoe crabs and shorebirds in the Delaware Bay. This long-term, collaborative research effort (discussed in depth in the 2003 Section 312 findings) continues to provide valuable information for a significant coastal management issue in Delaware and the surrounding states. Over many years, DCMP and DNERR have contributed to project elements, including program coordination, research, public outreach, and education. In the 2003 evaluation findings, OCRM encouraged Coastal Programs to clarify goals and objectives for the initiative. DCMP and DNERR have thus significantly refined the goals and objectives for future horseshoe crab and shorebird work. Coastal Programs plans to focus specifically on coastal shoreline habitat restoration and management, and the integration of habitat improvement techniques with coastal hazard protection projects such as beach replenishment.

In order to focus on these coastal management issues related to horseshoe crabs and shorebirds, Coastal Programs transitioned major aspects of the research initiative, including shorebird capture and banding efforts and telemetry studies, to DNREC's Division of Fish and Wildlife's (DFW) Nongame and Endangered Species program. This transfer of responsibilities is occurring over a three year period of capacity building in DFW. Coastal Programs' staff will continue serve on the US Fish and Wildlife Service Shorebird Technical Committee and may provide minimum support for monitoring efforts in the future, but will no longer oversee and fund the base monitoring program. DNERR will continue to support the long term volunteer spawning survey program and to be involved in the highly acclaimed "Green Eggs and Sand" education efforts. OCRM commends Coastal Programs on their commitment to this important coastal management issue, and also for identifying specific objectives to focus their involvement in the effort.

b. Delaware Bay Benthic and Sub-Bottom Mapping

Benthic habitat in Delaware Bay represents almost a quarter of the state's surface area, and supports many living marine resources on which Delaware relies for both consumptive and non-consumptive uses. The Bay is also heavily utilized by New Jersey, and both states make decisions regarding management of resources based on best available information. Delaware Coastal Programs has thus identified the lack of data regarding benthic habitat in the Bay as an important coastal management need, and is currently addressing it through an initiative to map benthic and sub-bottom resources. Mapping the Delaware Bay benthos will provide decision

makers with science-based information about the state of the resource, as well as about the impacts of human uses, such as commercial fishing and sediment dredging. This initiative is currently funded via both DCMP and DNERR.

The Coastal Programs' key partner in this initiative is the University of Delaware's Geology Department. DNREC's Division of Fish and Wildlife is also providing technical support. Currently, funding is largely from NOAA through DCMP and DNERR. Coastal Programs are also working with New Jersey to map their state waters in the Bay. This collaboration has not only increased the coverage of mapping projects, but also will provide good leverage for additional funding. Coastal Programs plans to work with New Jersey state staff to share information and assist with technical training.

The mapping initiative began in the summer of 2003, employing a suite of technologies and methodologies to collect comprehensive information on benthic habitat in the Bay. Technologies being used include: RoxAnn seabed classification system to map bottom characteristics using a single beam hydro-acoustic sensor; Chirp sub-bottom profiler that generates cross-sectional images of sub-bottom sediments up to 15 meters deep to characterize bottom sediment types and thickness; and a multi-beam hydrographic survey system to obtain images of benthic topography with 1 cm resolution. Field verification of imagery is done using methodologies such as Ponar grab samples, sediment cores and underwater video. The mapping project has provided a multitude of datasets that complement current Reserve monitoring and modeling efforts, and that will be invaluable to those managing Bay resources. It has also served to strengthen Coastal Programs' partnership with the University of Delaware and other state resource managers.

As of the evaluation site visit, Delaware Coastal Programs and their partners had conducted 1500 miles of benthic surveys, resulting in 150 square miles of mapping coverage and 300 grab samples. Outcomes from these surveys include: bottom sediment classification maps, 2- and 3-dimensional stratigraphic maps, macro-invertebrate habitat maps, and critical area imagery. Information obtained from the benthic and sub-bottom surveys will be imported into a geographic information system (GIS). This will allow easy access and interpretation of the data by various coastal decision makers. Maps will also be produced to provide a visual representation of the data collected for public distribution. Products from the surveys have already provided valuable information in response to current coastal management issues. For example, the ability to map sediment layers as deep as 15 meters sub-bottom via Chirp sonar has provided additional data with which to inform beach renourishment activities.

OCRM commends Delaware Coastal Programs for their rapid response to a current coastal management issue through their Delaware Bay benthic and sub-bottom mapping project. Valuable baseline data are being collecting that will have implications for coastal resource issues such as fisheries management, dredging, and shoreline management. This initiative demonstrates Coastal Programs role in the state's science-adaptive management continuum.

Accomplishment: Delaware Coastal Programs' initiative to map benthic habitats in Delaware Bay addresses a significant coastal management need. OCRM found that research conducted through DNERR and DCMP collaborative efforts is stimulated by current management needs, and in turn produces information that supports Reserve monitoring and modeling efforts as well as serves coastal resource managers statewide. This effort has also helped to develop strong partnerships with the state's research and coastal management communities.

The evaluation team had discussions with program partners that highlighted a number of potential uses for the data obtained through this effort. Primary users of the information include not only DNREC, but also the U.S. Army Corps of Engineers, other state and federal agencies addressing sediment and toxics issues, and researchers from various universities. Applications could include: determining essential fish habitat; monitoring dredge sites; emergency response (i.e. oil spill characterization); hydrodynamic modeling; locating and monitoring artificial reefs; providing information for horseshoe crab habitat management; river mapping (i.e. TMDL model refinement); archeological investigations; assessing benthic habitat damage from fish trawls, anchor scars and storms; and identifying important areas for marine protection.

Coastal Programs staff have put tremendous effort into this benthic and sub-bottom mapping initiative, and there is obviously significant demand for the resulting data and GIS products. Interpretation and integration of the new information would also greatly benefit state and federal coastal policy reviews and updates. OCRM thus believes that Coastal Programs should consider how to best disseminate the information to those who are involved in the management of Delaware Bay's benthic resources. For instance, the evaluation team noted the potential for outreach via DNERR's Coastal Decision-Maker Workshops. This venue would be ideal for providing coastal managers and decision makers with the information they need address Delaware Bay management issues.

Program Suggestion: OCRM encourages the Delaware Coastal Programs to develop a strategy to disseminate information obtained from the benthic mapping project to coastal managers and decision makers so that it can be used for coastal management applications, as well as policy updates.

2. Land Acquisition

Throughout this evaluation period, Delaware Coastal Programs has been coordinated with land protection agencies, land preservation NGOs, local governments and the Delaware Green Infrastructure Conservation Committee to develop their Coastal and Estuarine Land Conservation Program (CELCP) plan. OCRM expects to receive Delaware's draft plan in 2006, which will contain a description of the threats to the state's coastal and estuarine lands, the identification of the state's first and second tier priorities for protection, a description of the project application process, and the nomination and review process for projects before they are sent to the national level to compete for funding. Delaware's primary protection efforts will be focused along the coastal strip and the watersheds containing the two components of the

Delaware National Estuarine Research Reserve. The plan development process included a series of presentations around the state to educate interested individuals about CELCP. OCRM commends Coastal Programs on their collaborative approach to developing land acquisition priorities and strategies for the state's coastal and estuarine lands.

The acquisition of three large properties within DNERR boundaries along Blackbird Creek was a significant accomplishment for Delaware Coastal Programs during this evaluation period. DNERR land acquisition activities are coordinated not only with the Coastal Program, but also the Division of Parks and Recreation's Land Preservation Office and Delaware's Open Space Council. The latter two partners help with the real estate transactions and the identification of state matching funds. Since 2002, the Reserve has acquired four properties totaling 220 acres, all of which border the Blackbird. These parcels have provided greater public access to this Reserve component, as well as new opportunities for research and educational programming.

When Coastal Programs determined that they would have funding to acquire land along Blackbird Creek through CELCP and ERD, they partnered with the Division of Parks and Recreation to start the acquisition process. Thirty-one potential properties were identified within the Blackbird watershed and landowners were contacted to determine their interest in selling. Initially, two parcels were selected. Coastal Programs then worked through the Open Space Council, a part of the Open Space Program also housed in DNREC, to conduct the actual acquisitions. This 11-member Council advises the Secretary of the Department on the implementation of the Program and recommends specific land purchases. Recommendations to preserve properties are based on a rating of natural, cultural, recreational and geographic attributes, as well as a consideration of land use plans and purchase options. The Open Space Program receives nine million dollars a year for such projects. Though it was not mandatory for Coastal Programs to work with the Open Space Council for three of the acquisitions, their engagement in the process proved worthwhile. Coastal Programs thus demonstrated their ability to access federal funding for successful land purchases along the Blackbird, which ultimately played into the Open Space Council's recommendation to provide state funding for the fourth acquisition.

The success of the Blackbird Creek acquisitions was a direct result of the Delaware Coastal Programs' initiative, and of the state's proactive agenda for conserving open space in the Blackbird-Millington Corridor. It was also a good use and leveraging of CELCP funds. Delaware Coastal Programs' priorities will continue to include land acquisition where feasible, habitat restoration and increased public access along the Blackbird Creek.

Accomplishment: OCRM commends the Delaware Coastal Programs on the successful acquisition of properties along the Blackbird Creek. The new land holdings have opened the DNERR component for more extensive research and education programming as well as public use. (This also satisfies a recommendation from the 2003 Section 312 evaluation findings.)

IV. THE DELAWARE COASTAL MANAGEMENT PROGRAM

A. COASTAL PROGRAM DESCRIPTION

Delaware's Coastal Management Program (DCMP) was approved by NOAA in 1979. The Coastal Program's lead agency is the Division of Soil and Water Conservation, Department of Natural Resources and Environmental Control (DNREC). As a networked program it is administered through a number of agencies, including Divisions of Water Resources, Fish and Wildlife, Parks and Recreation, Air and Waste Management, and DNREC's Office of the Secretary.

Due to its small size, the entire State of Delaware is considered coastal; however the coastal zone is divided into two tiers, the "coastal strip" and the rest of the state. The coastal strip, averaging four miles in width, receives special zoning protection from industrial development, while the second tier only falls under general program provisions. The coastal population is estimated at 666,168. As Delaware's coastal landscape continues to develop in a low-density and sprawling manner, the health of valuable natural resources, many of which sustain local economies, is increasingly at risk. Managing the demands for protecting critical habitat areas, providing recreational opportunities, allowing port access, and managing water resources is a complex and continuously changing challenge in Delaware.

The DCMP manages the coastal zone and resolves conflicts related to coastal zone issues. The program's mission is to "Preserve, protect, develop and where possible restore and enhance the resources of Delaware's coastal zone."

The Division of Soil and Water Conservation is responsible for preserving and protecting the state's soil, water and coastal resources by managing the state's shoreline, coastal zone and navigable waterways. The Division regulates coastal and urban land use and construction activities, and promotes wise agricultural land management practices.

B. ACCOMPLISHMENTS, REVIEW FINDINGS AND RECOMMENDATIONS

Overall, NOAA finds that Delaware's management of the Delaware Coastal Management Program (DCMP) is satisfactory.

1. Program Operations and Management **a. Program Staffing and Succession Planning**

The DCMP is beginning to address succession planning issues to ensure that Program staff has the skills and experience to take on positions of greater responsibility. This will be essential as the Program matures and ensures that there will be qualified staff available when senior management positions within the Program become available. As part of this effort, DCMP is providing management training for senior staff and also providing opportunities for staff to take on additional responsibilities. For example, senior staff now have increased responsibility in

managing the DCMP's federal consistency team, a role that was previously filled primarily by the Environmental Program Administrator. Staff members are also assisting with grant writing for the Program. The DCMP is also looking into ways to create more promotion opportunities for staff, including potentially establishing a supervisory planner or scientist position. DCMP staff are also involved in these issues Department wide, as he is currently serving on the DNREC Future Workforce Task Force.

Accomplishment: OCRM commends the DCMP's efforts to provide promotion opportunities and prepare staff to take on management responsibilities. This will not only free up senior management to focus their time on critical issues for the Program rather than day to day management responsibilities, but will also ensure that new leaders are cultivated within the Program.

DCMP recently converted five contract positions to state merit positions. While these positions are still supported with federal funds, this does demonstrate increased commitment on the part of the state for the DCMP. However, DCMP staff is mainly supported with federal funding, with only 1 state supported General Fund position (the DNERR Manager- Environmental Program Manager I). Pursuing state funding for these positions will help free up federal funding to address priority coastal management issues for the Delaware Coastal Programs and will also demonstrate a long term commitment by the state to the Coastal Programs.

Program Suggestion: OCRM is encouraged by the conversion of five contract positions to state merit positions, but strongly encourages the Delaware Coastal Programs to continue to pursue opportunities to acquire state funding for Program positions. This will ultimately enhance the Delaware Coastal Programs' ability to invest federal resources to address priority coastal management issues for the state.

2. Coastal Habitat

a. Open Space Issues

The Delaware Coastal Programs have placed a strong emphasis on providing support and developing valuable tools to address current land use conditions and change in Delaware. During the evaluation period, the Delaware Coastal Programs have been strong partners in efforts to conserve the Blackbird Millington Corridor. The Blackbird Millington Corridor is recognized as a regional conservation priority due to its diversity ecological features and natural communities, history of balanced stewardship by private landowners, and the region's strong conservation oriented history. Approximately 10,000 acres in the Corridor are owned and managed by public agencies (including the DNERR) for a variety of conservation purposes. Another 10,000 are owned and managed privately for conservation or agricultural preservation purposes (conservation organizations and individual land owners). The state recognizes the Corridor as one of its most important *Green Infrastructure* areas as part of Governor Minner's *Livable Delaware* initiative. *Green Infrastructure* includes agricultural lands, forests and other natural areas and habitats. Through Executive Order 61, Governor Minner strengthened her *Livable Delaware* initiative and provided a framework to preserve *Green Infrastructure* through coordinated efforts of state agencies, conservation partners, and public and private landowners.

The DCMP partnered with The Nature Conservancy through a grant to address needs identified in the Blackbird-Millington Corridor Conservation Area Plan, including providing conservation program options and estate planning to residents who reside in the Blackbird Millington Corridor. The grant is being used to implement strategies to address obstacles to conservation identified by landowners. A key element of this partnership was a retirement and estate planning workshop held in September 2005 for Corridor landowners entitled “Conservation Options for Delaware Landowners: Can you afford to preserve your land?”. The DCMP and The Nature Conservancy invited lawyers, tax attorneys, accountants and conservation planners to speak at the workshop. The workshop also offered a voucher program for attendees to get one-on-one assistance from participating estate planning professionals with their estate planning documents. The workshop was very popular, with approximately 75 local landowners in attendance.

In an effort complementary to the workshop, the DCMP and The Nature Conservancy also developed a handbook to help landowners assess various options for conservation planning and their connections to financial and estate planning. The workshop and handbook are innovative ways to encourage conservation through financial and estate planning and OCRM encourages the DCMP to continue this outreach through additional workshops and other outreach outlets.

As discussed in the *Grant Programs* DCMP accomplishment below, the DCMP has established a grants and technical assistance program to ensure that the increasing amount of open space being set aside through sub-division development is managed effectively to promote natural resource protection.

Accomplishment: OCRM commends the Delaware Coastal Programs for being very aware of and responsive to current land use conditions and change in Delaware. Complementary to the DNERR’s land acquisition efforts in the Blackbird-Millington Corridor, the DCMP has established a partnership with The Nature Conservancy to promote private landowner conservation and has encouraged appropriate protection and management of open space through its Community Open Space Technical Assistance Grants.

3. Water Quality

a. Implementation of the Delaware Coastal Nonpoint Pollution Control Program

The DCMP has made significant strides over the past three years to implement their Coastal Nonpoint Pollution Control Program (CNP). The Delaware CNP was fully approved on March 1, 2002, becoming the 9th state to receive full approval by NOAA and EPA for their CNP. The Delaware CNP is a networked program and undertakes cooperative efforts with a variety of agencies and organizations. The Delaware CNP has achieved several significant accomplishments during the evaluation period, including:

- o Establishment of a coastal nonpoint grant program. Grant recipients include local governments (e.g., City of Rehoboth Beach), Delaware Sea Grant, universities (e.g.,

University of Delaware Sedimentation Study), and nonprofit organizations (e.g., Appoquinimink River Association). The CNP and Nonpoint Source/319 (NPS) programs also coordinate on grant funding, including serving on each others grant review committees.

- Launching the Delaware Clean Marina Program in 2003. Since its inception, two marinas have been certified as Delaware Clean Marinas and sixteen are pledged. Efforts are underway to increase the number of certified marinas. This program is managed by an executive committee that includes DCMP, Delaware Sea Grant, DNREC's NPS Program, Pollution Prevention and Compliance Program, Wetlands and Subaqueous Lands Program, Solid and Hazardous Waste Management Program, and the Coast Guard Auxiliary Program.
- Developed *Delaware Coast-A-Syst: Environmental Stewardship for Homeowners*, which provides information and a series of self-assessments to enable residents to identify and correct pollution sources and health risks on their residential property.
- Began revision of the Delaware NPS Management Plan, the first such update since 1999, to address programmatic changes and meet Environmental Protection Agency (EPA) requirements. At the time of the 4th Annual Nonpoint Source Advisory Committee Meeting (January 2006), the first draft of the revised plan was complete and available for comment.
- Active Nonpoint Source Advisory Committee, co-led by the Delaware CNP and NPS Program. Membership includes the Delaware Department of Agriculture, DNREC, Delaware Department of Transportation, University of Delaware Cooperative Extension, Conservation Districts, the U.S. Department of Agriculture, the U.S. Fish and Wildlife Service, Delaware Sea Grant, and two local National Estuary Programs. The Advisory Committee provides a valuable forum for information exchange, coordination, and project development. It has also been very active in the revision of the NPS Management Plan/Coastal Nonpoint Five Year Plan via issue based sub-committees. The Advisory Committee is also involved in grant proposal evaluation for the Delaware CNP. Information is shared with the Advisory Committee through annual meetings and a quarterly e-newsletter.

Accomplishment: The DCMP, together with the Delaware NPS Program, has made good progress in implementing the state's Coastal Nonpoint Pollution Control Program (Delaware CNP). The Delaware CNP has successfully established a Clean Marina Program to promote marina best management practices to control nonpoint source pollution and a grants program to promote best management practices among state, regional and local partners. The Delaware CNP has also effectively engaged the Nonpoint Source Advisory Committee to promote the implementation of Delaware's NPS Management Plan and Coastal Nonpoint Five Year Plan.

4. Coastal Hazards

a. Shoreline Management

DNREC's Division of Soil and Water Conservation/Shoreline and Waterway Management Section, in partnership with the DCMP, undertook an extensive effort to update Delaware's

coastal setback regulations, incorporating the most recent shoreline information for the state into the building line and updated construction standards. These regulations implement Delaware's Beach Preservation Act of 1972. The Act defines the beach as the area extending from the Mean High Water line of the Atlantic Ocean and Delaware Bay seaward 2,500 feet, and landward 1,000 feet and from the Delaware/Maryland line at Fenwick Island to the Old Marina Canal north of Pickering Beach. The Act established a Building Line for Delaware's beaches that restricts development seaward of the Line. The Building Line is defined in the Act's regulations (Regulations Governing Beach Protection and the Use of Beaches) and is designated on DNREC maps.

Updated coastal imagery was used to relocate the Building Line on the maps, where needed. In areas where re-nourishment has taken place, the Building Line has stayed in its existing location. The new Building Line maps also incorporate the state's new plane coordinate system, which will make updating the maps much easier as shoreline imagery changes.

The regulations were updated to reflect new construction standards, particularly the inclusion of vulnerability classifications. Three vulnerability classifications were established to reflect differences in wave energy on different parts of the beach—Beach Zone, Erosion/Wave Zone, and Overwash Zone. Different construction standards are established for each zone and the zones are included on DNREC's Coastal Vulnerability Assessment Maps.

Throughout the regulatory revision process, property owner education has been a major issue and as such DNREC has put a lot of effort into addressing this need. In particular, outreach focused on educating homeowners that the new regulations were designed to better reflect the requirements of the Beach Preservation Act and incorporate the most recent shoreline data. At the time of the evaluation, DNREC scheduled another public hearing for December 14 to allow the public the opportunity to review and comment on the revised Building Line maps and construction standards. Once the new regulations and maps are adopted, DNREC is planning to provide them to the public on CD and will hold a series of outreach workshops for surveyors, contractors, and the public. DNREC also plans to publish a booklet on the recommended construction practices, based on the updated standards.

OCRM commends the DCMP on efforts to date to update the state's shoreline regulations and looks forward to their completion. The new regulations will serve as a valuable tool to reduce the impacts of coastal hazards on Delaware's coastal resources and will help keep coastal development out of harm's way.

Accomplishment: The DCMP has undertaken a significant revision of Delaware's coastal setback regulations, incorporating the most recent shoreline information for the state into the Building Line and updated construction standards. The DCMP has also supported a significant effort to collect 2' contour LIDAR data for the Sussex County coast. This is a partnership effort with FEMA, USGS, NASA and DNREC and will have a variety of applications, including informing policy updates, improving understanding of the impacts of sea level rise, and supporting floodplain mapping.

5. Coastal Dependent Uses and Community Development

a. South Wilmington Special Area Management Plan

The DCMP initiated this collaboration in 2005 to bring together community members, city, county and state agencies to address environmental and social concerns in the South Wilmington area.

The City of Wilmington is located along the confluence of the Delaware, Christina, and Brandywine Rivers and was once a thriving regional industrial center that began an economic and population decline in the 1950's. Recent efforts have led to successful revitalization of parts of the City, but South Wilmington (the area encompassing the south side of the Christina River) has remained largely underutilized and represents one of the most significant opportunities for economic development and community revitalization in the region. At the center of the South Wilmington is the neighborhood of Southbridge, an underserved community of approximately 1,900 residents.

Southbridge is surrounded by manufacturing, commercial and former industrial uses, which have kept property values lower than in other areas of the region. As a result, Southbridge serves as a center for affordable housing. Its location, however, has also contributed to a number of problems, including: difficulty in attracting and retaining neighborhood serving businesses, no waterfront access and limited safe pedestrian access to the other side of the river, and numerous environmental problems due to the surrounding land uses. In addition, a large portion of South Wilmington lies within the floodplain and is prone to serious flooding. There are also concerns about haphazard development patterns leading to increased non-point source pollution, wetland loss, degradation of river vegetation, and lost opportunity to create community open space.

To address these problems and the diffuse regulatory and planning structure in the City, an effort to revitalize South Wilmington is taking place through a Special Area Management Plan (SAMP). The key goal for the SAMP is to encourage revitalization efforts that do not result in the displacement of Southbridge community. Partners in the SAMP include the DCMP, DNREC Division of Air and Waste Management, the City of Wilmington, community groups and service providers (including the Southbridge Civic Association), landowners, and businesses. The inclusive nature of the planning process has resulted in widespread community buy-in.

The South Wilmington SAMP will include six major components:

- Neighborhood Plan- will assess and identify housing and community service needs; prioritize environmental clean up and restoration; and identify recreation needs and promote waterfront access.
- Comprehensive Review of Legal Authorities- will outline existing local, state and federal policies applicable to redevelopment in South Wilmington; identify potential conflicts with the SAMP's goals; and include a plan of action to address conflicting policies.
- Environmental and Ecological Characterization and Enhancement Plan- Will describe the environment of South Wilmington (including water resources, wetlands, air quality, etc.) and provide recommendations for restoration, environmental remediation, and parks and natural areas.

- Non-Residential Area Sustainable Economic Development Plan- will make recommendations for the redevelopment of commercial and manufacturing areas based upon regional economic needs, community desires, and environmental constraints.
- Stormwater and Flood Relief Plan- will include an assessment of major flood and nuisance flood areas and will take a watershed approach to outlining steps to improve or correct flooding problems.
- Public Outreach and Public Participation- each phase of the project will have public participation and/or outreach components that will include traditional (e.g., civic meetings) and non traditional methods (e.g., community visioning, charettes).

Once complete, the SAMP will combine the results and recommendations of these components into a comprehensive action plan that will guide South Wilmington’s revitalization efforts. This effort is well on its way to being a national example of the benefits of SAMPs and their value in addressing coastal community redevelopment and revitalization issues.

Accomplishment: OCRM commends the DCMP for initiating this collaborative effort to bring together community members and city, county and state agencies to address environmental and social concerns in the South Wilmington area. The inclusive nature of the planning process resulted in widespread community buy-in. It is unusual to have a state program deal with urban and environmental justice issues at such a local level, and thus the South Wilmington SAMP will surely be an example at the national level.

6. Government Coordination and Decision-Making

a. Grants Programs

During the evaluation period, the DCMP has established the *Sustainable Coastal Communities Grant Program*, an innovative suite of grant opportunities that include not only financial assistance, but also grant writing and technical assistance provided by DCMP staff. This new process was established in response to concerns that only applicants with strong grant writing expertise applied for DCMP grants, potentially leaving out organizations that could benefit significantly from both financial and technical assistance to implement their projects.

The *Sustainable Communities Grant Program* was established to provide assistance to enable local governments and decision makers to develop tools and strategies to plan for growth and mitigate the resulting impacts. The Program provides “seed” money and technical assistance for the purpose of improving coastal and natural resource management at the local level. Grants are awarded competitively and a rigorous application and review process for proposals has been established. Since FY02, over \$500,000 has been awarded for 55 projects.

The Program includes two grant opportunities:

- Natural Resource Management Grants
- Community Open Space Technical Assistance Grants

Natural Resource Management Grants seek to enhance habitat and natural resource planning, management and protection. Eligible projects include:

- Developing ordinances or updating comprehensive plans to protect natural resources
- Planning/implementation of restoration projects on public lands
- Education/training targeted at community engagement
- Assessment and inventory of critical natural resources
- Requires 1:1 match of cash or in-kind services

Examples of grant recipients during the evaluation period include The Nature Conservancy, the City of Wilmington, the Appoquinimink River Association, and the Nanticoke Watershed Alliance.

Community Open Space Technical Assistance Grants were established when the DCMP began receiving proposals from sub-division maintenance corporations to improve their community and common space. Under Delaware law, an increasing number of sub-divisions are being required to set aside community open space during the development process- in New Castle County alone it is expected that 50% of the 70,000 acres of Suburban zoned land be set aside as open space. However, a key issue is who will maintain this open space and how. Because many homeowner associations' maintenance corporations lacked the technical expertise to manage these lands as natural areas with native vegetation, many were planting turf grass. Key assistance needs include:

- Working with civic and maintenance organizations to develop management plans
- Holding community meetings to discuss habitat options
- Financial support for start up costs and invasive species control
- Help and guidance with open space management to ensure success
- Help in seeking additional funds for project implementation

This program encourages match, but does not require it. Communities that provide match (in kind services, cash, volunteer hours, equipment rental) demonstrate a commitment to their project and therefore are ranked higher in the proposal evaluation process.

As part of this effort, DCMP and DNERR hosted a Community Open Space Workshop in 2003 (as part of the coastal decision maker workshop series) to present information on low cost and environmentally friendly options for subdivision open space. Over the past few years, the DCMP has refined its workshop format based on participant feedback and has also developed a video and manual, *Community Spaces, Natural Places: A guide to restoration, management, and maintenance of community open space*. The manual provides communities and land owners with a reference of open space management techniques that emphasize natural landscapes and potential options for funding and technical assistance. The guide also includes case studies that provide valuable information on effective techniques and lessons learned.

Accomplishment: The *Sustainable Coastal Communities* and *Community Open Space* grant programs are excellent examples of the benefits of providing both financial and technical assistance. Many recipients would not have been able to complete their projects without both of these valuable DCMP resources. DCMP's implementation of these grant programs has been well thought out and successful.

In addition to grants for external recipients, the DCMP also provides grant funds for internal DNREC projects. For example, DCMP provides funding to support efforts to map ecologically important areas under DNREC's BioLegacy initiative. This project will help guide the application of landowner incentive programs for improving and restoring wild habitat on private lands, and will help landowners and land stewards identify the types of wildlife habitat projects they can implement. While projects such as these are worthwhile and potentially further the objectives of the Delaware Coastal Programs, there is currently no application or progress review process in place for these types of projects. Establishing such a process will help ensure a level playing field for accountability for all projects supported by the Delaware Coastal Programs, whether they are conducted by DNREC or external partners.

Program Suggestion: OCRM encourages the DCMP to establish an application and performance review process for projects supported internally to DNREC. The DCMP has established an excellent grants program for recipients external to DNREC and should consider it a model for developing a similar process for DNREC recipients.

b. CZMA Performance Measurement System

DCMP has begun active participation in the National Coastal Management Performance Measurement System during the evaluation period. Delaware has begun the process of analyzing the CMPMS performance measures, further defining and establishing reporting criteria for the measures to ensure consistency throughout the process.

Delaware is currently in the Phase 1a collection process, which includes the public access and government coordination components of the CMPMS. DCMP will be coordinating with other programs and state agencies for data collection and is currently negotiating Memoranda of Understanding with these organizations. DCMP is also developing a database for data storage and analysis that will be useful for self-analysis and reporting purposes. As part of this effort, the DCMP will research indicators to identify existing data whose collection methods may need to be modified for reporting.

c. Federal Consistency

The previous evaluation findings included the following Program Suggestion: NOAA strongly encourages DCMP to continue improving the federal consistency process by strengthening current efforts, including: (1) targeted education and outreach to prospective applicants; and (2) coordination with DNREC's Division of Water Resources.

During the evaluation period, DCMP has implemented changes to its federal consistency program that have helped address these issues. DCMP established a staff team of topical specialists to make the federal consistency process more effective and efficient. One staff member is responsible for transportation, energy, and fisheries projects, another is responsible for marina and dock projects, and a third provides overall management and guidance for the team. Establishing topical specialists has allowed team members to improve coordination with applicants, federal agencies, and state agencies by making more one on one contacts and attending meetings relevant to the projects they are reviewing. It has also allowed them to more effectively manage their certification review workload, which averages about 141 applications

per year. DCMP staff regularly attends monthly Joint Permit Process meetings, where applicants are invited to present their proposed project and receive input from both federal and state resource agencies early in their project development process. DCMP staff also participates in quarterly Delaware Department of Transportation meetings to review and comment on upcoming projects. Delaware NERR staff is also becoming increasingly involved in the review of projects that potentially affect the NERR.

The Evaluation Team met with several federal and state agencies involved with DCMP federal consistency reviews (U.S. Army Corps of Engineers, DNREC Division of Fish and Wildlife, DNREC Division of Water Resources, DNREC Division of Air and Waste Management, Delaware Department of Transportation, and the U.S. Environmental Protection Agency) and all reported that they had a good working relationship with DCMP and appreciated the professionalism that DCMP staff brought to the process. They felt that the establishment of topical specialists has helped to enhance their working relationships with DCMP.

Major projects the team is currently reviewing and/or monitoring include the following:

- Liquefied Natural Gas (LNG) - In February 2005, the State of Delaware objected to a proposed BP LNG facility along the Delaware River in Logan Township, New Jersey. New Jersey has challenged Delaware's authority to review the project and case is currently being reviewed by the Supreme Court. In the meantime, the Federal Energy Regulatory Commission (FERC) has issued their approval for the project.
- Indian River turbines- Indian River Power is seeking a Nationwide Permit for the installation of new turbines as part of an effort to rehabilitate an idle hydro facility. The Indian River is an important area for recreational fishing.
- Wind Farms- beginning to see applicants come in for coastal wind farm projects.

In 2004, DCMP submitted to OCRM its most recent comprehensive update of the Program's enforceable policies. This update is part of a biennial process DCMP has established to regularly review and update its enforceable policies. This submittal was approved by OCRM as a Routine Program Implementation. The DCMP also initiated a comprehensive legal review of its policies to ensure that cornerstone coastal resource policies include appropriate language and to align the policies more closely with the focus of the CZMA.

Accomplishment: During the evaluation period, the DCMP has improved interagency coordination to make the federal consistency process more effective and efficient. Key elements include assigning specific staff as topical specialists who serve as liaisons with specific agencies and involving the DNERR manager in reviews for projects that affect the Reserve. The DCMP has also worked closely with OCRM to submit program changes in a timely manner. (This also satisfies a recommendation from the 2003 Section 312 evaluation findings)

V. THE DELAWARE NATIONAL ESTUARINE RESEARCH RESERVE

A. RESERVE SITE DESCRIPTION

NOAA's Office of Coastal Resource Management approved the Delaware National Estuarine Research Reserve (DNERR) in 1993. The lead agency is the Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Soil and Water Conservation in the Delaware Coastal Programs Section.

DNERR has two components that represent coastal habitats found within the Middle Atlantic subregion of the Virginian biogeographic region. These sites contain a range of natural and cultural features that make the reserve an excellent field laboratory for studying the impacts of human activity on ecosystems and for raising public awareness of the need for coastal conservation in Delaware. The more seaward St. Jones River component consists of approximately 3,750 acres distributed along five and a half miles of medium-salinity tidal river located in Kent County. Agricultural and military uses directly surround the lower St. Jones River where the reserve is located, whereas the upper and middle watershed is dominated by urbanized development. The more landward Blackbird Creek component, located approximately 20 miles northwest of the St. Jones component, consists of 1,180 acres in new Castle County. Blackbird Creek's watershed is still primarily agricultural and forested, although low-density residential development is increasing.

The St. Jones component contains 35 parcels of land held by 23 private landowners, DNERR and one other state agency. Within the St. Jones component's designated boundaries, about 698.5 acres of tidal marshes, upland fields, woodlots, and croplands were purchased or protected by DNERR in 1991-92, but the remaining majority of the component remains in private ownership.

The Ted Harvey Conservation Area is adjacent to the eastern side of the St. Jones component. The conservation area is owned and managed by DNREC's Division of Fish and Wildlife and consists of 2,019 acres of woodlands, upland fields, croplands, freshwater ponds and wetlands, coastal wetland impoundments, and Delaware Bay shoreline. Although the Ted Harvey Conservation Area is not included in DNERR's designated boundaries, it is available for use in DNERR research and educational activities through cooperative arrangements with the Division of Fish and Wildlife. On its far eastern end, the St. Jones component contains about 2,560 acres of Delaware Bay bottom and nearshore waters that run for two miles along the Ted Harvey Conservation Area's bay shoreline and extend outward two miles into open Delaware Bay.

Robert's Tract, a 176-acre parcel of the Little Creek State Wildlife Area owned by the Division of Fish and Wildlife, borders the St. Jones component along its western end. In conjunction with the Ted Harvey Conservation Area, the Roberts Tract provides conservation-oriented land ownership on both upstream and downstream ends of the St. Jones component. Also located adjacent to the component's western border, the John Dickinson Plantation and Mansion is owned and managed by the Delaware Division of Historical and Cultural Affairs and provides another 262.8 acres of protected area within the reserve's designated boundaries.

The Blackbird component contains 50 parcels of land held by 46 private landowners, DNERR, and the Division of Fish and Wildlife. Within the Blackbird component's designated boundaries, about 212 acres of tidal marshes, upland fields, woodlots and croplands were purchased by DNERR in 1990, but the majority of the component is still in private ownership. In 1996, the Division of Fish and Wildlife purchased an additional 183 acres of tidal marsh, woodlands, and croplands across Blackbird Creek and within the component's designated boundaries. The parcel was obtained as part of the Division's Cedar Swamp Wildlife Area and is available for use in DNERR activities. Acquisitions made between 2002-2005 increased the acreage owned and managed by DNREC by 220 acres.

Much of the expansive tidal marshes and uplands along Lower Blackbird Creek, downstream of the Blackbird component's designated boundaries, are owned and managed by the Division of Fish and Wildlife. This area primarily consists of a large parcel known as "The Rocks," which is also part of the Cedar Swamp State Wildlife Area. Extensive forested wetlands containing unique coastal plain ponds are located upstream of the component in nontidal areas. Much of the wetlands are within Blackbird State Forest, which is owned and managed by the Delaware Department of Agriculture's Forestry Section.

B. ACCOMPLISHMENTS, REVIEW FINDINGS AND RECOMMENDATIONS

Overall, NOAA finds that Delaware's management of the Delaware National Estuarine Research Reserve (DNERR) is satisfactory.

1. Operations and Management

DNERR operations have been greatly enhanced during this evaluation period and programming has reached a level of maturity that positions the Reserve well for future growth. Reserve management and staff have thoughtfully expanded research, education and stewardship activities, which reflect a clear focus on the state's priority coastal issues. They do a commendable job of collaborating with the DCMP and regional partners in research and education, and are continuously evaluating where the Reserve stands, and in which direction they hope to build programs. For example, the research and monitoring program has taken advantage of new opportunities resulting from greater access to the Blackbird Creek component, and the education program is poised to resume development and implementation of their Coastal Training Program. In addition, grant oversight and reporting has been excellent during this evaluation period.

DNERR has continued to develop program operations in this proactive way despite the challenge of limited financial match from the state. Though staff have been able to expand Reserve initiatives through creative partnerships, such as with Americorps, cash match is currently a limiting factor for program advancement. If there was a greater commitment from the state in the form of funding or staff, the Reserve would have many more opportunities for programmatic growth. For example, with additional financial support, DNERR could take advantage of federal Coastal Training Program funds; additional staff would allow for expanded management of the new Blackbird properties. OCRM encourages DNERR to explore options for addressing this issue with OCRM Estuarine Reserves Division (ERD) staff.

Program Suggestion: OCRM strongly encourages DNREC to explore means by which to increase state financial support for DNERR operations and management.

a. Management Plan

Reserves are required by federal regulation to have a current NOAA-approved management plan (15 C.F.R. Part 921.13). The plan should describe the reserve's goals, objectives and management issues, as well as strategies for research, education and interpretation, public access, construction, acquisition and resource preservation, and, if applicable, restoration and habitat manipulation. A management plan so written has four valuable functions: (1) to provide a vision and framework to guide reserve activities during a five year period; (2) to enable the reserves and NOAA to track progress and realize opportunities for growth; (3) to present reserve goals, objectives, and strategies for meeting the goals to constituents; and (4) to guide program evaluations. Regulations also require that a reserve's plan must be updated every five years.

DNERR successfully completed their management plan revision in 2004. The current plan covers the years from 2004 to 2009.

b. Reserve Advisory Committee

A Reserve Advisory Committee (RAC) composed of diverse and dedicated individuals can significantly assist a reserve in furthering its mission and increasing its visibility. Though described in their current management plan, DNERR does not at present have an active Advisory Committee. The management plan outlines a structure that includes structured management, research and education subcommittees. The evaluation team believes that even an informal meeting schedule of program partners and community representatives would be beneficial for the Reserve, particularly in identifying opportunities for collaboration and additional sources of match.

An Advisory Committee for DNERR could include representatives from the Reserve's key partners, as well as local government, community and industry interests. OCRM believes that more structured and regular dialogue with these partners could serve to increase support and advocacy for many Reserve initiatives, such as the Coastal Training Program and may help build a stronger volunteer base. In order to make the RAC most valuable to Reserve operations and management, DNERR should carefully consider program needs and align the Committee's composition and responsibilities accordingly. OCRM encourages DNERR to develop a strategy to address this issue over the next year.

Program Suggestion: DNERR should consider reinstating an Advisory Committee that could support program development and identify opportunities for collaboration.

c. Facilities

St. Jones River component

Expansion of facilities at DNERR's St. Jones River component was a significant accomplishment during this evaluation period. The St. Jones Center for Estuarine Studies now includes a 1700 square foot dormitory and a 3000 square foot conference facility. This additional space successfully combines both functional and interpretive uses of the Center. Both areas are already heavily utilized by the Reserve and program partners.

The first phase of the expansion, completed in fall 2003, was the visiting researcher quarters. This addition included four dorm-style rooms, bathrooms with shower facilities, and a small meeting space. The second phase of the construction was complete in 2005, and included a large conference room, state-of-the art bathrooms and an expanded exhibit area. The conference room can hold up to 75 people seated at tables, and can be divided into two separate rooms by a movable partition. This larger space provides an optimal facility for Coastal Decision-Maker Workshops conducted by the Reserve, as well as for conferences and meetings. The exhibit areas in the conference facility have yet to be designed. The Reserve is currently conducting a needs assessment and conceptual study for the use of the space, anticipating an emphasis on adult audiences and general NERR information. DNERR expects that the exhibits will be finished approximately two years after the needs assessment is complete. The Reserve also has plans to renovate exhibits in the original part of the Center, placing greater emphasis on Reserve research and engaging the public. Though there is not significant walk-through traffic due to the Center location (not directly off the highway), there has been an increase in visitors during this evaluation period, particularly since opening for part of the weekend. Visitor Center hours are currently restricted by Reserve capacity (i.e. volunteer staff).

Accomplishment: DNERR successfully completed the expansion of their facilities at the St. Jones River component. This facility provides space for visiting researchers and volunteers and an excellent conference room appropriate for meetings or educational programming.

One St. Jones' facility issue that remains, however, is the shortage of laboratory space for the research program. Though the original section of the building does include both a small research laboratory and a wet laboratory (used for both research and education), this space will not meet DNERR's needs as programs continue to develop. The research lab space is currently adequate for System-Wide Monitoring Program instrument maintenance and calibration, but little else. When visiting researchers require laboratory space at the Reserve, they often must use part of the wet lab instead if it is available. This is not only disruptive to the education program, but also could be a safety issue for Reserve visitors. Eventually, this lack of working laboratory space will limit the expansion of DNERR's research and monitoring program. OCRM encourages DNERR to evaluate the research program's laboratory needs and consider how to best address them.

The new St. Jones Center has improved DNERR visibility both in the community and within DNREC. Groups from both regularly take advantage of the conference facilities and additional dorm space. OCRM encourages the Reserve to consider how they envision the use of the

building, as demand will no doubt continue to increase in the future. DNERR will need to prioritize facility use particularly in regards to their expanding education and research programs. For example, Reserve educational programming and visiting researchers should constitute primary uses/users of the conference room and dormitory.

Blackbird Creek component

With the purchase of 220 acres along Blackbird Creek, DNERR now has a good access point for research and education on the Blackbird component. This addresses a Program Suggestion from the 2003 evaluation findings. The Reserve has already been able to increase their activity in the area, including providing new educational programming (canoe and walking tours), and conducting additional monitoring (sediment elevation tables) and habitat restoration (tree planting). OCRM commends DNERR on these efforts. Though one of the land purchases included a structure close to the Creek that DNERR thought could be of use, it was determined to be unsafe and will be removed. Without dedicated boat access and a facility on the component, DNERR's ability to increase research and education will be limited. The Reserve is considering building a pavilion in the area, but there are no formal plans as of yet.

Until there is a more regular Reserve presence in the area, public access and use will continue to be a challenge on the Blackbird component. DNERR will have to involve local landowners and user groups (i.e. hunters, kayakers) in developing access opportunities. This will require careful planning and increased community outreach. Vandalism on the Blackbird properties has also been an issue. DNREC's Division of Fish and Wildlife has been helpful in enforcement, however, in the future the Reserve may want to consider how to have a more active presence at the site. For example, the anticipated construction of canoe and boat ramps on the property will increase visitor use and the ability to conduct research on the component, which should lead to less vandalism.

Facilities Planning

As discussed above, DNERR has thoughtfully enhanced facilities and accessibility on both components during this evaluation period. The Reserve is also poised to increase both research and educational programming at both sites. OCRM commends DNERR on these efforts. However, in order for DNERR to successfully support additional growth, they should carefully consider program needs and plan current and future facility use accordingly.

DNREC also needs to consider how the Reserve will maintain these facilities for the long-term. Identifying and acquiring financial support for the day-to-day operation of a building such as the St. Jones Center is often quite challenging. Currently, the state provides funding for most of the electricity for the building, and NOAA provides funding for the remaining operations, maintenance and equipment. At the time of the evaluation, most building and grounds maintenance (on both components) was conducted by the Reserve Manager and the conservationist. However, given the expansion of the St. Jones Center, and the potential of additional facilities at the Blackbird Creek, OCRM does not anticipate that this arrangement will be sustainable. DNREC should plan for how these facility maintenance needs will be met. OCRM encourages DNERR to explore options for addressing this issue with OCRM ERD staff, including the possibility of developing a maintenance plan for Reserve facilities.

Program Suggestion: OCRM encourages DNERR to think critically about the long-term use and development of Reserve facilities at both the St. Jones and Blackbird components. The Reserve should consider how facilities will best support expanding programs and public use, while balancing the inevitable increase in site maintenance.

2. Research and Monitoring

DNERR's research and monitoring program focuses on the characterization of estuarine habitats and the anthropogenic impacts that contribute to habitat degradation or loss. The primary goals of the program are: 1) to identify types, quality and quantity of habitats in the watershed in order to facilitate the management and protection of estuarine resources, and 2) to identify, monitor and limit the anthropogenic impacts to the estuarine system. OCRM finds that DNERR is successfully implementing its research and monitoring program to address these goals.

The research coordinator position is shared between the Reserve and the Delaware Coastal Management Program (DCMP). This direct working relationship between DNERR and DCMP ensures that research activities at the Reserve are closely associated with, and directed towards, providing sound scientific information to support coastal management and decision-making. The research coordinator provides efficient management of joint projects and a stable link for information transfer to DNREC. For example, other DNREC divisions use Reserve research and monitoring data to develop TMDL models, dredging water quality assessments and sediment and stormwater control measures. In addition to his duties within DNREC, the research coordinator is strong leader within the NERR System for monitoring and telemetry related projects. He has taught SWMP technicians from around the country about how to use and maintain meteorological stations, and is a leader in bringing real time satellite telemetry to the NERRS, as well as in regional Integrated Ocean Observing System (IOOS) efforts. OCRM thus believes that the current balance of the research coordinator's responsibilities proves beneficial to both the DCMP and DNERR.

OCRM found that DNERR's research program has grown substantially during this evaluation period. The research coordinator has successfully focused research within the Reserve (an issue at the time of the previous evaluation), and has attracted new researchers and partnerships, in part, through an innovative small grant program. This grant program not only helps bring in researchers to work on relevant coastal and estuarine issues, but also provides monetary match for the Reserve. DNERR staff have developed strong partnerships with researchers from universities, such as Delaware State and University of Delaware, who greatly appreciate having the Reserve as a field site and view Reserve staff as colleagues.

DNERR's relationship with the Delaware State University (DSU) has grown tremendously during this review period, enhancing both the research program at the Reserve as well as student opportunities at DSU. Their partnership in the Environmental Cooperative Science Center (ECSC, funded via NOAA) has also continued to expand. DSU receives approximately one million dollars a year to participate in the ECSC, through which researchers and students work

with Reserves to develop tools for coastal resource managers and decision makers. Six graduate students are currently supported through this project. DSU also recently revised their curriculum for natural resource/aquatic science majors, incorporating DNERR into the programs by offering courses onsite at the St. Jones component. These initiatives, and the proximity of the Reserve as an ideal field site for research, have helped DSU to attract new researchers and to build their natural resources masters degree program. DNERR has also greatly benefited from the additional research focused in the St. Jones watershed.

DNERR has also been an active participant in the Graduate Research Fellowship program, hosting four graduate research fellows during the evaluation period. At the time of the site visit, DNERR was hosting two fellows. One is conducting research regarding weakfish habitats to help assess relative habitat value (including the St. Jones component) as nurseries. The general concepts developed in this project can also be applied elsewhere in the Mid-Atlantic region. The other current fellow is studying *S. vulgaris* (commonly known as the sandbuilder worm), a species recently discovered at the St. Jones component. These worms form reef like structures that are unique to Delaware Bay and provide valuable habitat for fish species, support high densities of invertebrates, and may protect coastal areas from erosion. The fellow's research is focusing on settlement and growth rates of both intertidal and subtidal worm populations at the St. Jones component.

Accomplishment: DNERR has successfully expanded research conducted for and within the Reserve by building partnerships with universities, state agencies, and federal agencies; and by developing an innovative small grant program. Research conducted by the Reserve and their partners is stimulated by current management needs, and in turn produces information that is valuable to coastal resource managers and decision makers.

DNERR also often provides visiting researchers with boat time, and research laboratory and dormitory space, when possible. While these collaborations have been beneficial to the Reserve's research program, they have understandably increased demands on Reserve facilities. The most challenging aspect has been inadequate space in the research lab. DNERR staff requires frequent use of the area for instrument calibration and maintenance, and thus opportunities for visiting researchers' use are limited. Eventually, the lack of laboratory capacity will not only hinder the further development of the Reserve's research program, but also the use of the site by outside researchers (see Facilities Program Suggestion).

a. Research for Coastal Management

In addition to conducting the successful benthic mapping initiative discussed previously in these findings, DNERR has identified specific research priorities for both the St. Jones and Blackbird components. Though each watershed has a unique land use pattern, both are being dramatically impacted by development. In order to address this important coastal and watershed management issue, the Reserve has identified current research priorities related to monitoring different impacts of land use change on estuarine resources. DNERR is thus focusing on contaminants in the St. Jones River and sedimentation in the Blackbird Creek.

Development, particularly the growing city of Dover in the upper portion of the St. Jones River watershed, has lead DNERR to focus on impacts of urbanization to the lower estuary. Currently, the Reserve's research emphasis in the St. Jones component is on estuarine contaminants associated with point and nonpoint source pollution.

Land uses changes in the Blackbird Creek watershed, such as deforestation and the conversion of farmland to residential development, have increased the amount of impervious surfaces surrounding the estuary, changing natural sedimentation patterns. In order to evaluate the effects of these land use changes along the Blackbird Creek, DNERR has begun a long-term monitoring project using sediment elevation tables (SETs). Data from these SETs will help the Reserve to quantify anthropogenic sedimentation of the marshes at the millimeter scale, as well as marsh response to sea level rise. DNERR currently has four sites in the Blackbird, two of which are located in the vicinity of System-Wide Monitoring Program stations, as well as one in the St. Jones, which is primarily used for educational purposes. Data collected by the SETs will be used in conjunction with that from other Reserve monitoring efforts and hyper-spectral images from a Delaware State University ECSC project. The SETs were place in the summer of 2005, and the Reserve anticipates that after 3-5 years enough data will have been collected to begin to show trends. This information will allow Reserve staff to model the effects of land use change on sediment transport in the estuary.

Though DNREC is obviously the primary user of Reserve research, other DNERR partners, local and regional resource managers, and the public also benefit from the science-based information gained via the research and monitoring program. Currently, however, there is no formal mechanism for the translation and transfer of Reserve research findings. OCRM encourages DNERR to consider how to best translate and disseminate research results to these groups, for example, through Coastal Decision-Maker Workshops.

Program Suggestion: OCRM encourages DNERR to develop a plan for the translation and dissemination of research findings to best inform and engage coastal managers and decision makers.

b. System-Wide Monitoring Program

The goal of the NERR System-wide Monitoring Program (SWMP) is to identify and track short-term variability and long-term changes in estuarine water quality, habitat and land use in each reserve. The data gathered through SWMP provides standardized information about how estuaries function and change over time, enabling scientists to predict how these systems will respond to anthropogenic changes. DNERR is fully compliant with NERRS SWMP requirements. The research coordinator has also taken a leadership role in the national SWMP as chair of the Data Management Committee for the System.

DNERR staff currently monitor six water quality stations (three in each component) and collect meteorological data from two weather stations. Data from four of the water quality sites and one weather station are submitted to the NERRS Centralized Data Management Office. A recent

accomplishment has been the successful telemetry of data from one water quality station and one meteorological station. The Reserve also monitors nutrients at five of the stations via monthly grab samples. These samples are analyzed by the Virginia Institute of Marine Science.

DNERR SWMP data is widely shared with partners to be used for modeling and research projects, and integrated into other data collection efforts. For example, various divisions in DNREC use the data for TMDL modeling, and the assessment of development pressures and aquatic habitat. Reserve staff rely on the data not only for research, but also for use as teaching and outreach tools, as well as for Delaware Envirothon preparation. DNERR regularly receives requests for SWMP data from outside researchers, Graduate Research Fellows and educators.

In addition, DNERR has become an integral part of the Mid-Atlantic Regional observing system, representing both DNREC and the NERR System. Involvement in the Integrated Ocean Observing System is a priority of the NERRS, and DNERR has taken a leadership role in regional efforts. This involvement is important to representing the NERR System not only as a source of quality data (via SWMP), but also for their potential to reach end users of that data in coastal management communities. OCRM commends the Reserve on their involvement in initiatives such as this, and for developing partnerships that extend the use and reach of their SWMP.

3. Education, Interpretation and Outreach

National Estuarine Research Reserves are federally designated "to serve to enhance public awareness and understanding of estuarine areas, and provide suitable opportunities for public education and interpretation." The reserve system provides a range of educational programming to key audiences depending on watershed and community needs and the specific capacity of each reserve. DNERR offers a variety of educational opportunities for school groups, teachers, coastal decision makers and the general public.

DNERR has two primary goals for their education, interpretation and outreach programming: to enhance public awareness and understanding of the value and functions of estuarine ecosystems, and to promote the wise use of estuarine resources, encouraging an environmental stewardship ethic among Reserve visitors as well as coastal decision-makers. In order to achieve these goals, the Reserve provides 1) on- and off-site educational programming for preschool through college undergraduate students, 2) interpretation for, and outreach to, the general public, and 3) Coastal Decision-Maker Workshops for adult professional audiences. OCRM finds that DNERR is successfully implementing its education program to address these goals.

The Reserve's ability to reach audiences was greatly enhanced this evaluation period with the expansion of their St. Jones Center for Estuarine Studies (discussed in detail in a previous section). The Center now includes more space for interpretive displays and a large conference facility, improving both educational and outreach opportunities for the program. In addition, the new meeting space will allow the education program to have a dedicated classroom in the original part of the building. The DNERR is currently working on a design concept for the development of the Center's new exhibit space. The DNERR is also considering updating the

existing indoor exhibits. The Reserve plans to involve teachers and other educators in the visioning process in order to design an education-minded facility as well as to increase their awareness of the building's possibilities. OCRM commends the Reserve on this careful consideration of interpretative exhibits at the St. Jones Center.

a. K-12 Education

DNERR provides a variety of hands-on, ecosystem-based educational opportunities for students both onsite at the Reserve and in the classroom. Science programs, on topics from beach ecology to watershed pollution, are delivered to over 1000 school children a year through curriculum that is content standard and performance-indicator correlated for grades 5-12 in science, math, social studies and language arts. DNERR also offers programs and workshops for professional educators to help guide them in the use of the facilities and resources of the Reserve.

The Reserve has developed strong partnerships with local institutions, such as John Dickinson Plantation, Delaware Association of Conservation Districts, and the Delaware Aquatic Resources Education Center, to provide some of their school programs (both at the DNERR and other institutions' classrooms). Partnerships such as these are a priority for the Reserve's education program, for they provide unique, interdisciplinary opportunities, as well as help to share the cost of education initiatives. For example, DNERR is currently collaborating on a program with John Dickinson Plantation, located adjacent to the St. Jones River component, to present ecology with a historical focus for 4th graders.

Another successful DNERR partnership is with the Delaware Association of Conservation Districts, through which the Reserve helps to prepare high school students for the state-wide Envirothon competition. Approximately 20 teams per year participate in the aquatics training offered by DNERR. DNERR uses Reserve generated science and monitoring data from various locations to have students practice identifying physical and chemical water parameters and biota found in different natural systems.

In addition to delivering programs directly to students, DNERR coordinates with partners to provide professional teacher development opportunities. For example, the Reserve continues to implement "Green Eggs and Sand: The Horseshoe Crab/Shorebird Education Project" educator workshops through a partnership with the Aquatic Resources Education Programs in Delaware, Maryland and New Jersey. "Green Eggs and Sand" (GES), developed with a variety of partners during the previous evaluation period, translates horseshoe crab and shorebird ecological research and resource management into a curriculum for middle and high school students. In 2005, this popular curriculum won the first place award for the curriculum category from the National Association for Interpretation, Interpretive Media Awards competition. Also in this evaluation period, DNERR produced the GES curriculum in CD/DVD form. The Reserve and partners have been distributing this valuable resource via teacher training workshops conducted throughout the Mid-Atlantic region.

Accomplishment: OCRM commends DNERR on the wide distribution of this excellent education program. The strength of the curriculum, and its broad reach, was acknowledged nationally in 2005, when “Green Eggs and Sand” received a prestigious award from the National Association of Interpretation.

The Reserve also works with the Delaware Teacher Center to make available a variety of teacher trainings on state-wide in-service days and periodically throughout the year. These workshops are open to teachers of all grade levels, with the aim to promote the use of the Reserve as a site for field trips by providing the educational tools and materials necessary for such instruction. They cover such topics as beach ecology, nonpoint source pollution and the link between cultural and natural resources. Currently, K-12 educational programs at the Reserve are limited by student to educator (school teacher or Reserve staff) ratios. DNERR therefore sees these workshops as an invaluable opportunity to accommodate more students at the Reserve by training teachers to use DNERR as an extension of their classroom. The Reserve continues to look for ways to enhance the education program by actively seeking information from Delaware teachers to assist in the re-development of school field trips and outreach programs. This needs assessment will primarily consider topic areas and means of presentation. OCRM commends DNERR on their proactive approach to this issue. OCRM also encourages the Reserve to brainstorm ideas on how to get alternative educators involved in the program, for example via volunteers or interns from local colleges' education programs.

b. Public Education

DNERR currently provides a range of educational opportunities for the general public, including community outreach events, walking/boating/canoeing tours, activities emphasizing interaction with the natural resources of the Reserve, and interpretive displays at the St. Jones Center. Public education programs such as outdoor activities and tours change with the seasons in order to take advantage of unique learning experiences afforded by the Reserve. A new program, the Preschool Naturalist, has been a great success this review period. These programs, offered approximately monthly to children ages 2-5, include a storybook reading, a craft and a hands-on experience. OCRM commends DNERR on the diversity of interesting and informative programs made available to the public.

DNERR continues to be involved in various community outreach events throughout the state, such as annual Coast Day and Earth Day celebrations. During this evaluation period, the Reserve also partnered with Comcast Cable to broadcast 2004 and 2005 EstuaryLive programs. The broadcast was seen in approximately 160,000 homes throughout Kent and Sussex Counties in Delaware and the Eastern Shore of Maryland.

Partnerships with other state and federal agencies have also resulted in successful public education programs. The Education Coordinator has been involved in the Delaware Division of Fish and Wildlife “Becoming an Outdoors Woman” effort to encourage women to participate in outdoor recreation activities.

A significant accomplishment for the Reserve's public outreach and education during this evaluation period was the production and distribution of the short video “Blackbird – Delaware's

Undiscovered Treasure”. The film highlights the importance of Blackbird Creek and the community of landowners in the watershed, and explains the role of DNERR in managing the resource. Initially presented through a series of public meetings, it was then distributed to public libraries, schools and community members. This video has greatly increased DNERR’s visibility throughout the Blackbird watershed, as well as improved the Reserve’s relationship with the Blackbird community.

Accomplishment: DNERR increased their visibility and further developed community relationships in the Blackbird watershed via the excellent video “Blackbird – Delaware’s Undiscovered Treasure.”

With the increased accessibility and visibility of the Reserve’s Blackbird Component, the education program will undoubtedly be challenged to provide more interpretation on that property. Staff have already begun to think strategically about what types of educational programming would be best suited for the Blackbird.

c. Coastal Decision-Maker Workshops

An important aspect of a reserve’s education program is the Coastal Decision-Maker Workshop (CDMW) series. These workshops are designed to inform coastal decision-making, improve coastal stewardship at local and regional levels through the application of science-based knowledge, and increase dialogue and collaboration among decision-makers.

DNERR currently conducts three to four Coastal Decision-Maker Workshops per year. Recent programs have included:

- “Community Open Space” in conjunction with the Delaware Coastal Management Program
- “Clean Marinas” in partnership with the Delaware Clean Marinas Program
- “Negotiating for Coastal Resources” in conjunction with the NOAA Coastal Services Center
- “Get the Grant” an environmental grant writing workshop

The Reserve’s target audiences include local and state government staff, municipal officials and land use planners. In order to best serve these audiences, DNERR has forged many strong partnerships to produce high quality, informative workshops. Partnerships with local agencies and organizations (i.e. the Delaware Coastal Management Program, Delaware SeaGrant) are critical in the exchange and sharing of expertise and resources to deliver relevant and accessible training programs that meet the needs of specific groups. DNERR CDMWs have been successful and well attended. The Reserve has already identified various opportunities to coordinate with partners on future decision-maker workshops, including topics such as benthic mapping (with DCMP), managing visitor use, and Marine Protected Area management (with CSC).

If a reserve chooses to, they can develop a more formal version of Coastal Decision-Maker Workshops, via a Coastal Training Program (CTP). Reserve CTPs are funded in part with additional 315 funds from the Estuarine Reserves Division (ERD). Planning for the CTP includes establishing a training advisory committee, conducting a market survey of training

providers and an audience needs assessment, developing a program strategy that outlines priority coastal issues to be addressed, prioritizing target audiences, and creating a marketing plan. Using ERD pre-operational planning funds, DNERR has already completed (and ERD has accepted) their market survey and audience needs assessment. The evaluation team noted a strong desire on the part of Reserve staff to proceed with CTP development. Given the success of DNERR's Coastal Decision-Maker Workshops, the demonstrated need for these types of trainings, and the Reserve's wealth of opportunities for partnering, OCRM encourages the Reserve to move forward on implementation of their Coastal Training Program and to discuss options for how they might do this with ERD staff.

Program Suggestion: OCRM strongly encourages DNERR to proceed with the development and implementation of their Coastal Training Program.

In order to continue Coastal Training Program development, DNERR needs to establish a CTP Advisory Group, complete a Program Strategy document and marketing plan and recruit a Coastal Training Program Coordinator for the site. In addition, discussions with staff at the Reserve suggested that the needs assessment could be updated. Currently, operational funding for the first year of implementation following completion of the planning process, and document approval by the CTP Oversight Committee, is allocated at \$85,000. The second year is assumed to be at a "fully operational" status and reserves are eligible (in FY 06) for \$90,000. As discussed previously, the availability of state match has been the limiting factor for the Reserve's CTP thus far.

4. Stewardship Program

The national NERR System has recently been focused on developing a stewardship component to complement its existing research and education programs. At most reserves, stewardship programs include activities such as research, monitoring, education, and direct resource management. According to the current management plan, stewardship at DNERR is focused on the protection of existing resources within the Reserve as well as the acquisition of land within the core and buffer areas of the two components. In addition to this natural resource management component, however, DNERR stewardship staff are the primary providers of facilities management and maintenance. It is this latter function that seems to take most of the stewardship program's time and attention.

a. Resource management

DNERR goals for resource protection include: promoting the adoption of conservation practices; protecting the Reserve from disruptive practices occurring inside its boundaries; developing invasive species monitoring and control strategies; and, providing education and outreach programs that focus on stewardship. The Reserve addresses these goals in a variety of ways, and with the help of a suite of partners.

One of DNERR's strategies for promoting the adoption of conservation practices is to support the implementation of Best Management Practices on the agricultural lands surrounding (and

within) both Reserve components. A significant accomplishment of the stewardship program during this evaluation period has been the development and maintenance of a Best Management Practices Demonstration Site. DNERR is working with the Kent County Soil Conservation District on this project to demonstrate various Best Management Practices (BMPs) that promote the conservation of natural resources. As part of Delaware's voluntary Conservation Reserve Enhancement Program (CREP), the USDA's Farm Service Agency pays farmers to implement BMPs such as these in order to improve stream water quality and to increase wildlife habitat. The 12 acre site includes fifteen species of trees, three types of wetlands, and different types of warm season grasses. DNERR provides interpretation of the site via signage, and also held a 'field day' there in conjunction with the University of Delaware Cooperative Extension Service tour.

Accomplishment: DNERR has partnered with the Kent County Soil Conservation District and a local farmer to demonstrate Best Management Practices on the Reserve that improve water quality and increase wildlife habitat.

DNERR habitat restoration activities have also increased during this evaluation period, in part as a result of land acquisition along Blackbird Creek. The Reserve successfully coordinates its restoration work with a variety of organizations, including other DNREC Divisions, the U.S. Fish and Wildlife Service, the Nature Conservancy, and the St. Jones Greenway Commission. Partnerships such as these greatly enhance the capacity to do restoration on the Reserve, as do collaborations with Americorps and the Boy Scouts, who often provide the staff for projects. For example, a forest restoration plan for the Blackbird Component was completed during this review period and has been implemented. Per this plan, the Reserve, in cooperation with the Delaware Native Plant Society and Americorps volunteers, planted approximately five acres of the Blackbird land with native Delaware hardwoods.

As discussed previously, DNERR has had much success with land acquisition and facilities enhancement during this evaluation period. The Reserve has also further developed their stewardship activities. With expansion in these areas, however, comes the need for an increase in land management and facilities maintenance capacity. Currently, the DNERR's staff conservationist is responsible for everything from implementing restoration projects to vehicle and building maintenance. However, given DNERR's recent growth, this situation is simply not sustainable. Facilities maintenance, especially, will continue to increase. OCRM thus believes the Reserve's stewardship program would be greatly enhanced with the addition of a part-time, or, ideally, full-time, stewardship coordinator. This would allow DNERR to build a stewardship program with direct oversight and management capacity for land and estuarine resources within the Reserve, while still addressing facilities maintenance responsibilities. Expanding the stewardship program's function will allow DNERR the opportunity to conduct more science-based demonstration projects and studies to compliment the ongoing research, education and training programs at the Reserve.

One way to potentially access funding for this position is via the Open Space Council. The Council currently provides some financial support for the stewardship of lands acquired by the state. These funds (about \$1 million annually derived via transfer taxes) get divided between

land owning agencies depending on the amount of land and facilities overseen. Since the Division of Soil and Water Conservation cannot own land, any DNERR acquired property is held in the Division of Fish and Wildlife, who is then eligible for the stewardship funding. OCRM encourages DNREC to consider making some of this funding available to Coastal Programs for stewardship activities on Blackbird properties.

Program Suggestion: DNERR should consider the stewardship program's current and future direction and needs and work with DNREC to identify how to best address them, such as through the hiring of a stewardship coordinator.

Given not only the increased land area managed by DNERR, but also the rise in demand for public access to the Blackbird Component, a stewardship coordinator with specific expertise in conservation planning and public use issues would greatly increase capacity at the Reserve. One of DNERR's primary public access goals is to maintain each Reserve component's integrity for research, long-term resource protection and education while permitting traditional uses that do not conflict with the Reserve's mission. One of the traditional uses along the Blackbird Creek is hunting. With the purchase of several hundred acres of land along the Creek, DNERR will need to keep the hunting community informed and involved as Reserve research programming and public access opportunities are planned. To date, long term conservation plans have not been developed for either of the DNERR components, and it will be important to balance the mission of the Reserve with public access demands such as these when doing so. DNERR has a grant task to develop a public access plan for Blackbird Creek, which will contribute to addressing this need.

b. Volunteer Program

Another means of increasing capacity at a Reserve is through an active volunteer program. A dedicated group of volunteers can support a variety of Reserve efforts from field data collection to invasive species control to maintaining reserve facilities. DNERR successfully calls upon volunteers (i.e. Americorps, Boy Scouts) to help with episodic events such as maintenance and tree plantings, but does not have a committed volunteer base to support regular programmatic efforts. Unfortunately, getting such a volunteer program implemented at DNERR has been a challenge.

During this evaluation period, DNERR had a fulltime volunteer coordinator, courtesy of Americorps, for a little over a year. This individual worked closely with the volunteer administrator for Delaware State Parks (who is also the coordinator for Americorps volunteers in Delaware) to develop a DNERR program and to attract a volunteer base from the community for the Reserve. While the Reserve continues to have success engaging the public in one-time opportunities, it has had a difficult time keeping an active cadre of volunteers that are trained and reliable. Volunteer program development efforts included identifying specific Reserve needs, creating position descriptions for volunteers, and conducting hours of community outreach. DNERR also invited the volunteer coordinator from the Chesapeake Bay – Maryland NERR to share their strategies for developing a sustainable volunteer program. From these efforts, the organizational capacity is apparent and ready at DNERR, however, it seems the consistency of a

fulltime, long-term volunteer coordinator is lacking. Though Americorps volunteers are undoubtedly great resource for the Reserve, OCRM believes that if volunteer program development is considered a priority, this particular position would be better served by a permanent staff member. Such a volunteer coordinator would provide a consistent face for community outreach events and have the time to develop an in depth understanding of Reserve needs.

VI. CONCLUSION

For the reasons stated herein, I find that the State of Delaware is adhering: (1) to its approved Coastal Management Program and is making satisfactory progress implementing the provisions of its approved Coastal Management Program (DCMP); and (2) to the programmatic requirements of the NERRS in its operation of its approved National Estuarine Research Reserve (DNERR).

DCMP and DNERR have made notable progress in the following areas: development of successful collaborative efforts between the DCMP and DNERR; successful acquisition of properties along Blackbird Creek; partnerships and grants programs to enhance open space management; addressing succession planning issues; partnerships to address coastal water quality issues; revision of the state's coastal setback regulations; initiation of the South Wilmington Special Area Management Plan to address environmental and social issues; enhanced interagency coordination via the federal consistency process; completed expansion of the DNERR's St. Jones River component facilities; successful expansion of the DNERR research program; wide distribution of the award winning "Green Eggs and Sand" education program; production of the "Blackbird- Delaware's Undiscovered Treasure" video; and DNERR partnership with the Kent County Soil Conservation District to demonstrate water quality and habitat best management practices.

These evaluation findings also contain nine recommendations. These recommendations are Program Suggestions that DNREC should consider prior to the next §312 evaluation of DCMP and DNERR, however they are not mandatory at this time. Summary tables of program accomplishments and recommendations are provided in the Appendix E.

This is a programmatic evaluation of DCMP and DNERR that may have implications regarding the state's financial assistance awards. However, it does not make any judgment on or replace any financial audits.

/S/ Laurie McGilvray for David M. Kennedy
David M. Kennedy
Director

November 6, 2006
Date

VII. APPENDICES

APPENDIX A. DELAWARE'S RESPONSE TO 2003 EVALUATION FINDINGS

Delaware Coastal Programs

1. NOAA strongly encourages DCMP and DNERR to maintain strong, individual identities. Also, each program should clearly define management staff roles and responsibilities. Administrative decision-making processes must involve appropriate management staff in major program decisions.

Delaware Coastal Programs Response: DCMP and DNERR have continued to closely coordinate and effectively partner on projects while maintaining increasingly strong and visible identities. Significant progress in understanding mutually beneficial opportunities, and needs, for independent program recognition were highlighted by a joint staff retreat. This retreat helped staff understand the direct connection between the programs and their statutory authorities. It also clearly demonstrated the similarities in the goals of the programs that help guide cooperative project selection.

DNERR's individual identity is now very prominent due to the physical presence of the St. Jones Center expansion and the Blackbird properties. These facilities are used extensively by organizations and researchers from across the state and region, increasing visibility and the DNERR identity. Both the St. Jones and Blackbird Component locations are also now in use as demonstration and research sites for land stewardship activities. During the last 3 years the DNERR has continued to conduct well attended public events at both components, research projects, workshops and field trips that highlight the role of the Reserve. All publications and displays that were developed with partner organizations feature the Reserve logo. The relationship with DCMP remains strong and both programs continue to collaborate. Recognition by the community at large of the Reserve as a place for research and education is evidenced by the amount of new projects that occur within the Reserve boundaries, the number of conferences held on-site, the popularity of teacher professional development programs and the interest of landowners in each watershed in the stewardship activities at DNERR.

While DCMP also has a strong individual identity, it does not have the facility or programs to have as high a profile for public visibility as DNERR. However, other programs such as the Natural Resource Management Grants program have significantly increased the visibility and identify of DCMP. DCMP also provides significant support to DNERR both in direct administrative and financial project support, and in staff funding, such as for the Research Coordinator. Coastal Programs believes the positive benefits to Delaware's coastal resource far outweigh any concern about which NOAA based program these results are attributed too.

Both programs now produce and distribute a quarterly newsletter. Staff from both programs provide input and articles for the newsletters and layouts are completed by the DCMP's network support specialist. These have been effective tools to strengthen the identities of both programs. That said, both DCMP and DNERR still struggle with their visibility in DNREC and in the Division of Soil and Water Conservation. They are often seen by many as a "funding

opportunity” for special projects or as a place to hold a meeting, with minimal interest and understanding of the responsibilities and directives of these programs under the CZMA. This conflict comes from the difference in the federal perspective of NOAA wanting to elevate the visibility of these programs and the very different perspective of DNREC Department Secretary and Division of Soil of Water Director that want to build “cohesive” state agencies. For example, DCMP and DNERR have both developed program specific logos, but have been instructed to use a new Division Logo.

Administrative decisions of the Administrator and Program Manager II always include the appropriate management or senior staff involvement of the programs and projects. By standard practice, the Reserve manager and key staff are consulted on all decisions impacting DNERR. Likewise, senior DCMP staff are included in decision involving major programs such as Federal Consistency, Coastal Nonpoint Source Program, Natural Resource Management Grant Programs, etc.

While DCMP and DNERR have clearly defined staff roles, the Administrator and Program Manager II also recognize the need to extend and expand these responsibilities into broader areas to mentor and further develop staff. This cross training is part of the professional development of the Reserve manager, all senior staff, and other program staff, and helps build flexibility within the programs. It is also vital to long term succession planning for the future of the programs. The DCP Administrator and Program Manager II consider it a high priority to actively transfer their long term institutional knowledge to other staff as both will likely retire in the coming decade. Failure to accomplish this cross training and development of younger staff could be detrimental to the long term success of these two NOAA partnership programs in the State of Delaware. In recent years, the programs long range planning has included the full involvement of the program staff from both DNERR and DCMP to set the directions of these two programs in accordance with the Goals and Objectives of the CZMA. This was done through a series of retreats that are now being implemented.

DCMP is currently using some senior staff (scientist & planner) in a “managerial” role for specific projects. There is recognition on the part of the Administrator and Program Manager II that these positions would be more appropriately classified as Program Manager I positions. To correct this problem and further clarify roles and responsibilities, both of these staff members are being provided supervisory and management training courses. It is expected that efforts will be undertaken to have two positions reclassified to correct this problem in the future. Finally, the two programs have been able to get approval to establish 5 new state merit positions to replace long term contractual positions since the last 312 review. This will help achieve equity among staff and provide more long term continuity for both NOAA funded programs.

2. Prior to grant submission, DCMP, DNERR and NOAA should jointly discuss all annual grant tasks for both programs. It is important for the DCMP Manger, DNERR Manger, NOAA DCMP Liaison, and NOAA DNERR Liaison to develop grant proposals cooperatively prior to grant submission to NOAA. Specifically, the DCMP Manager, DNERR Manager, NOAA DCMP Liaison, and NOAA DNERR Liaison should identify grant tasks with crossover funding. They should also ensure that resource sharing is mutually beneficial and supports both individual and national program missions and goals.

Delaware Coastal Programs Response: The Administrator and Program Manager II consider the development of grants an ongoing effort year round. They have continuous dialogue with the DNERR manager and all staff from both programs on ongoing projects, potential new projects, and program needs. Grants for both programs are developed with participation of staff throughout the programs, not simply by the managerial staff. DCMP projects are always shared in a conceptual stage with the NOAA program specialist well in advance of preparation of a draft grant. DNERR manager shares grant projects and tasks with the DNERR program liaison.

Cooperative projects are always developed with full and active involvement from key staff from the two programs. A Section 306 task for “DNERR Support” is provided by the DCMP to provide additional support to the DNERR program as a direct result of the valuable contribution they provide for coastal resource management in Delaware with applied research projects, special projects, and decision maker workshops.

One of the best and most formal examples of the cooperative planning of these programs occurred during a formal retreats held on December 16, 2003 and July 15, 2004. These retreats engaged all staff from both programs in a detailed assessment of grant activities, highlighted the mutual benefits of cooperative activities of various projects for both programs, and clearly outlined links of these projects to program activities and to each programs federally established missions and goals. It also provided an evaluation of how well these programs activities are in accordance with the goals of the CZMA as well as the distribution of activities among the various CZMA goals.

3. NOAA encourages DCMP and DNERR to continue to refine the objectives and goals for the implementation of the horseshoe crab and shorebird research and its application to management. Long-term management priorities and strategies should be clearly defined.

Delaware Coastal Programs Response: DCMP and DNERR have significantly refined the goals and objectives for all future work on horseshoe crabs and shorebirds. Future efforts will focus specifically on coastal shoreline habitat restoration and management and the integration of habitat improvement techniques with coastal hazard protection projects such as beach replenishment. Targeted shoreline restoration projects currently include Port Mahon (1 Million in USACE budget for Oct. 1, 2006), Mispillion Jetty repair and development of a long term dredge disposal plan that creates and maintains beach habitat, and routine involvement in the monitoring and design of Delaware Bay Beach replenishment projects. This will include a significantly reduced and more focused effort of beach front monitoring of bird use through passive observations and horseshoe crab spawning data.

The other major aspects of the shorebird work, including shorebird capture and banding efforts, telemetry studies, and other intensive studies, have been successfully transferred to the Division of Fish and Wildlife’s (DFW) Nongame and Endangered Species program during a three year process of capacity building and monitoring program transfer. DCMP and DNERR efforts have gradually been reduced in each of the past three years while the DFW efforts have increased.

Coastal Programs staff will still serve on the US Fish and Wildlife Service Shorebird Technical Committee and may provide minimum staff support for monitoring efforts in the future, but will no longer oversee and fund the base monitoring program.

DNERR may make some facilities and equipment available, but at a significantly reduced level that does not interfere with any other DNERR programs during the spring of the year. Essentially, all future work will be treated like any other research activity at the DNERR and expected to pay the minimal dorm room fees or equipment use fees for use. DNERR will continue to support the long term volunteer spawning survey program for selected beaches in the reach of the Delaware Bay that are in the vicinity of the DNERR. The Reserve will also continue to be an active partner on the highly successful “Green Eggs and Sand” education program.

Delaware Coastal Management Program

1. NOAA encourages DCMP to continue improving the federal consistency process by strengthening current efforts, including: 1) targeted education and outreach to prospective applicants; and 2) coordination with DNREC’s Division of Water Resources.

DCMP Response: Not provided.

2. NOAA encourages the DCMP to expand the application of data and products generated by the environmental indicators process to coastal management. NOAA also urges DNREC to ensure use and refinement of the environmental indicators as an integral part of the effort to achieve the coastal zone environmental goals identified in the process.

DCMP Response: Not provided.

3. NOAA encourages DCMP to continue implementation of the Pea Patch Island Heronry Region SAMP. DCMP should coordinate the efforts of cooperating agencies, nongovernmental organizations and individuals to reevaluate their commitment to the SAMP, to outline the strategies that align with their programs’ missions and goals, and to commit the resources needed to accomplish these strategies. DCMP should explore options to provide incentives to cooperating organizations, including outside funding such as a management plan implementation grant that could provide funds for additional staff to assist with implementation or for cooperating organizations to participate more fully.

DCMP Response: Not provided.

Delaware National Estuarine Research Reserve

1. NOAA strongly encourages state funding support for DNERR's Education Coordinator and Research Coordinator.

DNERR Response: We strongly support the establishment of state funded positions for both programs. In addition, we support the request for a modest state line item in the budget for

these programs. Since 2002 DNERR, through Delaware Coastal Programs, has requested state funding support for the Education Coordinator each funding cycle. Funding has been denied at the Division and Department level. The only dedicated state general fund money is limited to the DNERR Program Manager I position.

2. NOAA strongly encourages DNREC to explore options for expediting the land acquisition process and for gaining access to the Blackbird Component. Until permanent access is obtained, DNERR should work with local landowners to determine their willingness to provide access for occasional, short-term event. This approach could be explained at a "town meeting" with the neighboring landowners to address any questions and concerns as well as to explain DNERR's mission as a nonregulatory program that provides coastal management information and training. DNERR should also work with local land trusts and other land acquisition groups, such as The Nature Conservancy, that have expresses interest in acquiring lands within the reserve boundary.

DNERR Response: In 2003 an 8.6 acre parcel of land along Blackbird Creek was purchased, using DCMP 306a funds, to allow for canoe access to Blackbird Creek. Since that time, a 2.5 million dollar federal appropriation combined with several hundred thousand dollars in state open space funds had allowed the purchase of three additional properties. Two purchase and settled in 2004 and 2005 for a total of 147 acres, and one for an additional 58 acres settled just prior to this evaluation. All four properties are contiguous waterfront properties that provide access to approximately 2.5 miles of riverfront. Boat access through reserve property, however, is still not possible.

Despite this new waterfront property and potential access, the DNERR will continue to cooperate with Mr. Deelon Smith for access and use of his private boat ramp that can accommodate larger research boats. DNERR is in the planning process of installing its own ramp on one of the recently acquired properties; however it will not provide access for motorized boats. DNERR's Blackbird access area is a shallow water "drowned forest" area that could be significantly damaged by moderate increases in motor boat use. Access in the deeper water areas exists at the Division of Fish and Wildlife - owned "Rocks" property or by permission at private property for research and educational uses. Access is also available on the Delaware River just upstream and downstream of the Mouth of the Blackbird Creek at state public boat ramps at Augustine Beach and Collins Beach.

To proactively address any potential issues and conflicts of increased demand for public access on the recently purchased properties to the environmentally fragile area, the DCP has funded and is undertaking a public access planning effort for both the Blackbird Creek and adjacent Appoquinimink River System. With major success in acquire properties for access, it is vital that a thoughtful plan be developed to manage any increased access without damaging the environmental resources or negatively impacting or conflicting with traditional uses of private lands such as waterfowl hunting, deer hunting, farming, etc.

Land acquisition activities have primarily focused on the Blackbird Component over this last evaluation period. DCMP and DNERR have also worked closely with The Nature Conservancy

on the development of the “Blackbird Millington Conservation Corridor” plan for the protection of the entire Blackbird Watershed. This process pulled together all land protection agencies and organizations in the area to map priority acquisitions and explore partnerships. DNERR and DCMP staff were directly involved in these workshops, providing the opportunity to build better and more cooperative relationships with area landowners and the opportunity to highlight the DNERR program as an asset to the local community. As a result the DNERR has had a positive relationship with The Nature Conservancy, the Conservation Fund and Delaware Wildlands. While we have not partnered yet to acquire property, all three organizations are knowledgeable of the DNERR acquisition plan and have expressed support for our land protection efforts.

Coastal Programs has also included both the St. Jones River and Blackbird Creek Watersheds as our highest priority for land protection in the State of Delaware Coastal and Estuarine Land Conservation Program (CELCP) Plan, which will target these areas as the highest priority for land protection funds should CELCP be adequately funded at the federal level. The recently updated DNERR management plan has expanded the potential area of acquisition to better protect the ecological integrity of the Blackbird Creek and St. Jones Component. Due to the intensive development pressure in the vicinity of the Blackbird, this site is expected to continue to be the primary target area for land protection in the coming 5 years.

3. NOAA strongly encourages DNERR to detail all boundary and property arrangements between Delaware and landowners related to the Blackbird Creek and St. Jones components in the reserve's revised management plan (2002-2007), with particular attention to arrangements with private property owners in the Blackbird Creek component. Copies of all Memoranda of Understanding should be included.

DNERR Response: All boundaries and property arrangements between DNERR and landowners are detailed in the reserve Management Plan (2004-2009).

4. DNERR should continue to strengthen its visibility and identity as part of the NERRS within DNREC, nationally, and among researchers, educators, and the general public.

DNERR Response: DNERR has continued to improve its visibility in-house and to outside organizations. DNERR researchers frequently present posters and discussions at local and national symposia. All DNREC employees receive e-mails regarding programs and volunteer activities at the reserve. Reserve meeting facilities are used by all Divisions within DNREC. DNERR activities include teacher professional development training, chair of the aquatics committee of Delaware Envirothon, membership in the St. Jones Greenway Commission and steering committee membership in the St. Jones tributary action team.

5. DNERR should develop a long-term management strategy for transitioning the CDMW program into a robust and strategic Coastal Training Program.

DNERR Response: DNERR has completed all required planning documents to implement the CTP program however two significant obstacles to program implementation remain. Matching funds for the increased federal funding provided by the CTP program have not been identified. DNERR and DCMP management are very supportive of implementing CTP

but have each been unsuccessful in identifying appropriate long term matching funds. Until match is identified Delaware will be unable to participate in the CTP program. The CTP program also mandates that a full-time CTP coordinator must be in place to receive full program funding. Until stable long term match is identified a coordinator will not be hired.

6. NOAA strongly encourages DNERR to strengthen research conducted at the reserve. DNERR staff should develop a list of potential research questions relevant to coastal management issues that need to be addressed within the reserve and its watersheds that could be provided to local colleges and universities. NOAA also strongly encourages the Research Coordinator to look for creative sources of outside funding to increase research conducted at the reserve. Instead of limiting research projects on the reserve mainly to those which the Research Coordinator has time to conduct, DNERR could seek outside sources of research funding and additional incentives for other researchers to conduct studies at the reserve.

DNERR Response: Not provided.

APPENDIX B. PERSONS AND INSTITUTIONS CONTACTED

Delaware Coastal Programs Representatives

Name	Title	Affiliation
Tricia K. Arndt	Environmental Scientist	DCMP
Dave Carter	Program Manager II	DCMP and DNERR
Kim Cole	Environmental Scientist	DCMP
Wes Conley	Conservation Technician	DNERR
Sarah Cooksey	Program Administrator	DCMP and DNERR
Mark Del Vecchio	Environmental Program Manager	DNERR
Lonnie Dye	Application Support Specialist	DCMP
Marcia Fox	Environmental Scientist	DCMP
Pat Hoffman	Administrative Specialist	DCMP
Susan Love	Planner	DCMP
Kate Marvel	Estuarine Educator	DNERR
Mike Mensinger	Environmental Scientist	DNERR
Katy O'Connell	Education Coordinator	DNERR
Bob Scarborough	Research Coordinator	DCMP and DNERR
Bonnie Willis	NOAA Coastal Management Fellow/Environmental Scientist	DCMP
Bart Wilson	Environmental Scientist	DNERR
Carl Yetter	Environmental Engineer	DCMP

State of Delaware Representatives

Name	Title	Affiliation
John A. Hughes	Department Secretary	DNREC
Robert S. Baldwin	Director	DNREC, Division of Soil and Water Conservation
Dennis Brown	Planner	DNREC Office of the Secretary
Kevin Coyle	Administrative Planner	DNREC Office of the Secretary
Bob Zimmerman	Environmental Program Administrator	DNREC Office of the Secretary
Mike Powell	NFIP Coordinator	DNREC, Division of Soil and Water Conservation
Tony Pratt	Administrator	DNREC, Division of Soil and Water Conservation, Shoreline & Waterway Management
Maria Sadler	Environmental Scientist	DNREC, Division of Soil and Water Conservation, Shoreline & Waterway Management

DELAWARE COASTAL MANAGEMENT PROGRAM AND DELAWARE NATIONAL ESTUARINE RESEARCH RESERVE
 CZMA §312 FINAL EVALUATION FINDINGS

Karen Bennett	Environmental Program Manager	DNREC, Division of Fish and Wildlife, Natural Heritage Program
Dawn Failing	Trainer/Educator	DNREC, Division of Fish and Wildlife
Gary Kreamer	Training Administrator	DNREC, Division of Fish and Wildlife, Aquatic Resources Education Program
Stew Michaels	Environmental Scientist	DNREC, Division of Fish and Wildlife, Fisheries Section
Roy Miller	Administrator	DNREC, Division of Fish and Wildlife, Fisheries
Shelly Tovell	Private Lands Biologist	DNREC, Division of Fish and Wildlife
Bill Whitman	Green Infrastructure Coordinator	DNREC, Division of Fish and Wildlife
Matt Chesser	Administrator	DNREC, Division of Parks and Recreation, Planning and Preservation
Tim Kaden	Land Preservation Specialist and Planner	DNREC, Division of Parks and Recreation, Planning and Preservation
Glen Stubbolo	Volunteer Services Coordinator	DNREC, Division of Parks and Recreation
Laura Herr	Environmental Program Manager	DNREC, Division of Water Resources, Wetlands and Subaqueous Lands
Bryan Hall	Urban Forester	Department of Agriculture

Federal Agency Representatives

Name	Affiliation
Greg Breese	DOI, Fish and Wildlife Service, Bombay Hook NWR
Terry Villanueva	DOI, Fish and Wildlife Service, Bombay Hook NWR Manager
Steve Allen	USACE, Philadelphia District, Planning Division
John Brundgage	USACE, Dover Field Office

South Wilmington SAMP Representatives

Name	Affiliation
Jane Allison	4 th District Planning Council
Peter Besecker	City of Wilmington, Department of Planning
Arthur Boswell	Executive Director, Neighborhood House
Wayne Brown	Mt. Joy United Methodist Church, Southbridge
Kara Coates	City of Wilmington, Legal Department
Hanifa G. N. Shabazz	Councilwoman, 4 th District, Wilmington
Marvin Thomas	Southbridge Civic Association

Academic Representatives

Name	Title	Affiliation
Nancy Targett	Acting Dean	University of Delaware, College of Marine Studies
Jack Gallagher	Professor	University of Delaware, College of Marine Sciences
Daniel Leathers	Professor, Department Chair, Delaware State Climatologist	University of Delaware, Department of Geography
George Luther	Professor	University of Delaware, College of Marine Studies
John Madsen	Professor	University of Delaware, Geology Department
Joseph G. Farrell	Marine Resource Management Specialist	University of Delaware, Sea Grant, Marine Advisory Service
Dewayne Fox	Associate Professor	Delaware State University, Agriculture and Natural Resources
Michael Reiter	Associate Professor	Delaware State University, Agriculture and Natural Resources
Dot Abbott-Donnelly	Extension Agent	University of Delaware, Cooperative Extension

Local Government, Community and NGO Representatives

Name	Affiliation
Rick Barker	Millwood Maintenance Corporation, New Castle County
Chip Irons	Fox Hunter Crossing Maintenance Corporation, New Castle Co.
Ed Lewandowski	Executive Director, Center for the Inland Bays
Andy Manus	The Nature Conservancy
Mike Oates	Videographer, Anew, Inc.
Carl Solberg	Kent County Parks and Recreation
Sara Wozniak	Appoquinimink River Association

APPENDIX C. PERSONS ATTENDING THE PUBLIC MEETING

No one attended the DCMP/DNERR public meeting.

APPENDIX D. SUMMARY TABLE OF ACCOMPLISHMENTS

The evaluation team documented a number of the Delaware Coastal Programs’ accomplishments during the review period. These include:

Program	Issue Area	Accomplishment
DCMP DNERR	Coordination and Collaboration	Delaware Coastal Programs’ initiative to map benthic habitats in Delaware Bay addresses a significant management need. OCRM found that research conducted through DNERR and DCMP collaborative efforts is stimulated by current management needs, and in turn produces information that support Reserve monitoring and modeling efforts as well as serves coastal resource managers statewide. This effort has also helped to develop strong partnerships with the state’s research and coastal management communities.
DCMP DNERR	Land Acquisition	OCRM commends the Delaware Coastal Programs on the successful acquisition of properties along Blackbird Creek. The new land holdings have opened the DNERR component for more extensive research and education programming as well as public use.
DCMP	Operations and Management	OCRM commends the DCMP’s efforts to provide promotion opportunities and prepare staff to take on management responsibilities. This will not only free up senior management to focus their time on critical issues for the Program rather than day to day management responsibilities, but will also ensure new leaders are cultivated within the Program.
DCMP	Coastal Habitat	OCRM commends the Delaware Coastal Programs for being very aware of and responsive to current land use conditions and change in Delaware. Complementary to the DNERR’s land acquisition efforts in the Blackbird-Millington Corridor, the DCMP has established a partnership with The Nature Conservancy to promote private landowner conservation and has encouraged appropriate protection and management of open space through its Community Open Space Technical Assistance Grants.
DCMP	Water Quality	The DCMP, together with the Delaware NPS Program, has made good progress in implementing the state’s Coastal Nonpoint Pollution Control Program (Delaware CNP). The Delaware CNP has successfully established a Clean Marina Program to promote marina best management practices to control nonpoint source pollution and a grants program to promote best management practices among state, regional and local partners. The Delaware CNP has also effectively engaged the Nonpoint Source Advisory Committee to promote the implementation of Delaware’s NPS Management Plan and Coastal Nonpoint Five Year Plan.
DCMP	Coastal Hazards	The DCMP has undertaken a significant revision of Delaware’s coastal setback regulations, incorporating the most recent shoreline information for the state into the Building Line and updating construction standards. The DCMP has also supported a significant effort to collect 2’ contour LIDAR data for the Sussex County coast. This is a partnership effort with FEMA, USGS, NASA and DNREC and will have a variety of applications, including informing policy updates, improving understanding of the impacts of sea level rise, and supporting floodplain mapping.
DCMP	Coastal Dependent Uses and Community Development	OCRM commends the DCMP for initiating this collaborative effort to bring together community members and city, county and state agencies to address environmental and social concerns in the South Wilmington area. The inclusive nature of the planning process resulted in widespread community buy-in. It is unusual to have a state program deal with urban and environmental justice issues at such a local level, and thus the South Wilmington SAMP will surely be an example at the national level.

DELAWARE COASTAL MANAGEMENT PROGRAM AND DELAWARE NATIONAL ESTUARINE RESEARCH RESERVE
 CZMA §312 FINAL EVALUATION FINDINGS

DCMP	Government Coordination and Decision Making	<p>The <i>Sustainable Coastal Communities</i> and <i>Community Open Space</i> grants programs are excellent examples of the benefits of providing both financial and technical assistance. Many recipients would not have been able to complete their projects without both of these valuable DCMP resources. DCMP's implementation of these grants programs has been well thought out and successful.</p>
		<p>During the evaluation period, the DCMP has improved interagency coordination to make the federal consistency process more effective and efficient. Key elements include assigning specific staff as topical specialists who serve as liaisons with specific agencies and involving the DNERR manager in reviews for projects that affect the Reserve. The DCMP has also worked closely with OCRM to submit program changes in a timely manner.</p>
DNERR	Operations and Management	<p>DNERR successfully completed the expansion of their facilities at the St. Jones River component. This facility provides space for visiting researchers and volunteers and an excellent conference room appropriate for meetings or educational programming.</p>
DNERR	Research and Monitoring	<p>DNERR has successfully expanded research conducted for and within the Reserve by building partnerships with universities, state agencies, and federal agencies; and by developing an innovative small grant program. Research conducted by the Reserve and their partners is stimulated by current management needs, and in turn produces information that is valuable to coastal resource managers and decision makers.</p>
DNERR	Education, Interpretation and Outreach	<p>OCRM commends DNERR on the wide distribution of this excellent education program. The strength of the curriculum, and its broad reach, was acknowledged nationally in 2005, when "Green Eggs and Sand" received a prestigious award from the National Association of Interpretation.</p>
		<p>DNERR increased their visibility and further developed community relationships I the Blackbird watershed via the excellent video "Blackbird- Delaware's Undiscovered Treasure."</p>
DNERR	Stewardship	<p>DNERR has partnered with the Kent County Soil Conservation District and a local farmer to demonstrate Best Management Practices for the Reserve that improve water quality and increase wildlife habitat.</p>

APPENDIX E. SUMMARY TABLE OF PROGRAM SUGGESTIONS

In addition to the accomplishments listed in Appendix D., the evaluation team identified several areas where the program could be strengthened. Recommendations are in the form of Program Suggestions. There are no Necessary Actions included in these findings. Areas for improvement include:

Program	Issue Area	Program Suggestion
DCMP DNERR	Coordination and Collaboration	OCRM encourages Delaware Coastal Programs to develop a strategy to disseminate information obtained from the benthic mapping project to coastal managers and decision makers so that it can be used for coastal management applications, as well as policy updates.
DCMP	Operations and Management	OCRM is encouraged by the conversion of five contract positions to state merit positions, but strongly encourages the Delaware Coastal Programs to continue to pursue opportunities to increase state funding for Program positions. This will ultimately enhance the Delaware Coastal Programs' ability to invest federal resources to address priority coastal management issues for the state.
DCMP	Government Coordination and Decision Making	OCRM encourages the DCMP to establish an application and performance review process for projects supported internally to DNREC. The DCMP has established an excellent grants program for recipients external to DNREC and should consider it a model for developing a similar process for DNREC recipients.
DNERR	Operations and Management	OCRM strongly encourages DNREC to explore means by which to increase state financial support for DNERR operations and management.
		DNERR should consider reinstating an Advisory Committee that could support program development and identify opportunities for collaboration.
		OCRM encourages DNERR to think critically about the long-term use and development of Reserve facilities at both the St. Jones and Blackbird components. The Reserve should consider how facilities will best support expanding programs and public use, while balancing the inevitable increase in site maintenance.
DNERR	Research and Monitoring	OCRM encourages DNERR to develop a plan for the translation and dissemination of research findings to best inform and engage coastal managers and decision makers.
DNERR	Education, Interpretation and Outreach	OCRM strongly encourages DNERR to proceed with the development and implementation of their Coastal Training Program.
DNERR	Stewardship	DNERR should consider the stewardship program's current and future direction and needs and work with DNREC to identify how best to address them, such as through the hiring of a stewardship coordinator.

DELAWARE COASTAL MANAGEMENT PROGRAM AND DELAWARE NATIONAL ESTUARINE RESEARCH RESERVE
CZMA §312 FINAL EVALUATION FINDINGS