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National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Silver Spring, Maryland 20910

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AUG 24 2009

Dear Dr. Sullivan:

Enclosed are the final evaluation findings for the Narragansett Bay National Estuarine Research Reserve (NERR) for the period from September 2004 through May 2008. The fundamental conclusion of this evaluation is that Rhode Island is adhering to the programmatic requirements of the NERR system in its operation of the approved Narragansett Bay NERR. This document contains eight recommendations, one of which is mandatory. In response to the State's comments on the NOAA draft evaluation findings, we have made factual corrections and clarified some of the discussion and findings sections.

We appreciate your cooperation and assistance and that of your staff during the accomplishment of this evaluation.

Sincerely,

David M. Kennedy
Director

Enclosure

cc: Bob Stankelis, Manager, Narragansett Bay NERR
Laurie McGilvray, Chief, Estuarine Reserves Division, OCRM, NOAA
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FINAL Evaluation Findings
**Narragansett Bay National Estuarine Research Reserve
Rhode Island**

September 2004 – May 2008

August 2009



Photo by Wendy Allen

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



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I. EXECUTIVE SUMMARY

The Coastal Zone Management Act (CZMA) of 1972, as amended, established the National Estuarine Research Reserve System (NERRS). Sections 312 and 315 of the CZMA require the National Oceanic and Atmospheric Administration (NOAA) to conduct periodic performance reviews or evaluations of all federally approved National Estuarine Research Reserves (NERRs). The review described in this document examined the operation and management of the Narragansett Bay National Estuarine Research Reserve (NBNERR) during the period of September 2004 through May 2008. The NBNERR is administered by the Rhode Island, Department of Environmental Management (RIDEM).

This document describes the evaluation findings of the Director of NOAA's Office of Ocean and Coastal Resource Management (OCRM) with respect to NBNERR during the review period. These evaluation findings include discussions of major accomplishments as well as recommendations for program improvement. The fundamental conclusion of the findings is that RIDEM is successfully implementing and enforcing its federally approved NERR.

The evaluation team documented a number of NBNERR accomplishments during this review period. Management of the Reserve has improved with the: hiring of one full-time Reserve manager; the hiring of a part-time administrative assistant; developing a contractual relationship with the Audubon Society of Rhode Island to administer non-state employee salary and benefits, and the development of a competitive hiring process for contract staff. Reserve staff have also actively participated in and made significant contributions to the national system during the evaluation period. Notable Reserve efforts during this evaluation period included: the incorporation of Reserve research into educational activities; Conservation Development trainings facilitating the adoption of conservation development ordinances, and expansion of the Reserve's stewardship program and partnerships resulting in the completion of various restoration projects during the review period.

In addition to these numerous accomplishments, the evaluation team identified areas where the Reserve and its programming could be strengthened. All but one of the recommendations for NBNERR are in the form of Program Suggestions and describe actions that OCRM believes RIDEM could take to improve or enhance the program but that are not mandatory. The Reserve also has one Necessary Action, regarding the completion of the final draft of its management plan. As mentioned above, NBNERR has had many achievements during this review period, including the development of new partnerships and building upon existing partnerships to expand its programming. Recommendations focus on continuing to build and strengthen partnerships, reexamining the role of Advisory committees to consider how they can best contribute to the Reserve, and timely completion of a NOAA facilities grant.

II. PROGRAM REVIEW PROCEDURES

A. OVERVIEW

NOAA began its review of NBNERR in March 2008. The §312 evaluation process involves four distinct components:

1. An initial document review and identification of specific issues of particular concern;
2. A site visit to Rhode Island including interviews and a public meeting;
3. Development of draft evaluation findings; and
4. Preparation of the final evaluation findings, partly based on comments from the state regarding the content and timetables of recommendations 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 NBNERR 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 Appendix A.

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 NBNERR.

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 Statement and program documents; (2) financial assistance awards and work products; (3) semi-annual performance reports; (4) official correspondence; (5) previous evaluation findings; and (6) relevant publications on natural resource management issues in Rhode Island.

Based on this review and on discussions with OCRM's Estuarine Reserves Division, the evaluation team identified the following priority issues:

- the Reserve's general administration, including grants and fiscal management;
- status of the Management Plan;
- facilities development and operations planning;
- implementation of the Reserve's research, monitoring, and education programs;
- Reserve staffing and needs;
- the manner in which the Reserve coordinates with other governmental and non-governmental organizations and program in the state and region; and
- major accomplishments during the review period.

C. SITE VISIT TO RHODE ISLAND

Notification of the scheduled evaluation was sent to RIDEM, NBNERR, Rhode Island's congressional delegation, and regional newspapers. In addition, a notice of NOAA's "Intent to Evaluate" was published in the *Federal Register* on April 1, 2008

The site visit to Rhode Island was conducted May 20-23, 2008. Carrie Hall, Evaluation Team Leader and Kim Penn, Evaluator, OCRM National Policy and Evaluation Division; Amy Waggener, NBNERR Program Specialist, OCRM Estuarine Reserves Division; and Wendy Allen, Reserve Manager, North Inlet-Winyah Bay National Estuarine Research Reserve, SC formed the evaluation team.

During the site visit, the evaluation team interviewed NBNERR staff, RIDEM management and staff and other state officials, federal agency representatives, coastal researchers, educators, nongovernmental representatives, and private citizens. Appendix B lists persons and institutions contacted during this review.

As required by the CZMA, NOAA held an advertised public meeting during the evaluation on May 21, 2008, at 12:00 p.m., at the Hope Brown Center, Farnham Farm, Prudence Island, Rhode Island. The public meeting gave members of the general public the opportunity to express their opinions about the overall operation and management of NBNERR. Appendix C lists individuals who registered at the meeting.

The excellent support of NBNERR staff with the site visit's planning and logistics is gratefully acknowledged.

III. RESERVE PROGRAM DESCRIPTION

NOAA's Office of Ocean and Coastal Resource Management designated the Narragansett Bay National Estuarine Research Reserve (NBNERR or Reserve) in 1980. The lead agency is the Rhode Island Department of Environmental Management (RIDEM). The Reserve is located in the geographic center of the Narragansett Bay, 12 miles north of Newport and 12 miles south of Providence.

Narragansett Bay's watershed encompasses approximately 1,900 square miles with 39 percent of the watershed located within Rhode Island, and 61 percent located within Massachusetts. The NBNERR manages 4,295 acres on and around Prudence, Patience, and Hope Islands in the center of the Bay. All of the acreage is owned by the state except for 160 acres on Prudence which is owned by the Prudence Island Conservancy.

Prudence Island, the largest of the three islands which make up the Reserve, is approximately seven miles long and one mile across at its widest point. The Reserve's Learning Center, which contains educational exhibits, a library that serves as a public meeting area, and research labs is located at the south end of the island. About 75 percent of Prudence Island is protected with NBNERR managing approximately 60 percent of the Island's land. The Island is sparsely populated. Though there are only about 150 year-round residents, the population swells to more than 10 times that number during the summer. A variety of large wading birds, such as great and little blue herons, snowy and great egrets, green herons, green backed herons and glossy ibis use the large salt marshes at the north end of the Island as feeding areas. The dominance of secondary growth habitats on the Island reflects the extensive farming that occurred in the area until the early 1900s. Once the fields were abandoned, woody plants gradually replaced herbaceous species. The Island's uplands are now covered with a dense shrub growth of bayberry, blueberry, arrowwood and shadbush interspersed with red cedar, red maple, black cherry, pitch pine, and oak. Invasive plants such as Asiatic bittersweet and autumn olive are also found on the Island.

The 214-acre uninhabited Patience Island lies to the west of northern Prudence Island. The common tall shrubs of bayberry, highbush blueberry and shadbush are interspersed with red cedar and black cherry. Much of the Island also is covered by brier, Asiatic bittersweet and poison ivy. A deciduous forest is gradually replacing the shrub growth on some parts of the island. A small salt marsh on the southeastern shore provides habitat for seablite, a rare plant species in Rhode Island.

Hope Island is a small, uninhabited, 78-acre island that lies west of southern Prudence Island. The island's topography is very irregular, with numerous low hills, ledges, rocky outcrops and a steep and rocky shoreline. One small freshwater wetland is located in an isolated depression in the south-central part of the island. Grasses compose much of the vegetation on the northern end of Hope Island, but other areas have shrubs such as bayberry, rose and poison ivy. The central part of the Island contains tall shrubs and trees, including red cedar, staghorn sumac, shadbush and black willow. The Island is a major rookery for colonial nesting wading birds.

IV. REVIEW FINDINGS, ACCOMPLISHMENTS AND RECOMMENDATIONS

A. OPERATIONS AND MANAGEMENT

1. Reserve Administration

NBNERR has taken significant steps during the review period to strengthen and enhance Reserve administration. These changes, primarily with regard to staffing, have also addressed administrative concerns raised in the previous 312 evaluation. A single full-time Reserve manager was hired in July 2005 allowing the manager to focus on successfully carrying out the Reserve's mission. In 2006, the Reserve also expanded its partnership with the Audubon Society of Rhode Island (ASRI). ASRI was given a three year contract to administer non-state employee salary and benefits. ASRI and RIDEM worked together to develop an open and competitive hiring process that includes the wide advertisement of open positions, a search committee of at least three individuals, and standard interview questions. This agreement is an important vehicle for the reserve and allows qualified staff to be hired and have benefits. OCRM commends the Reserve for successfully addressing a program suggestion in the previous program evaluation to establish a single, full-time manager position, provide consistent, long-term support for reserve staffing and operations, and to develop a competitive process for recruiting new staff.

Accomplishment: RIDEM improved the management of the Reserve by: (1) hiring one full-time Reserve Manager; (2) hiring a part-time administrative assistant; (3) developing a contractual relationship with ASRI to administer non-state employee salary and benefits; and (4) working with ASRI to develop a competitive process for recruiting new staff.

NOAA provides funding for the Reserve program through annual grants. During the previous evaluation period the Reserve was found to have a number of issues with grant administration including: (1) delinquency in submitting performance reports; (2) submitting performance reports that covered multiple award periods; and (3) having multiple awards open at once due to difficulties completing tasks. The Reserve has successfully resolved delinquent reporting issues during this evaluation period and has been submitting performance reports covering a single reporting period. However, the Reserve still needs to work on completing grant tasks in a timely manner to ensure multiple grants are not open at once. OCRM acknowledges that during this evaluation period, there was significant staff turnover which made completion of certain tasks challenging. OCRM encourages the Reserve to place a priority on timely completion of tasks and close out of operation and facilities grants in the future.

2. Advisory Committee

During the evaluation period, NBNERR reestablished its Advisory Committee to provide input into the future role of the Reserve. The membership includes the RIDEM Director and various RIDEM division chiefs, the Executive Director of the Coastal Resources Management Council, directors of local non profits, university representatives, community leaders, and local constituents. The Committee's input guided the development of the revised management plan

for 2009-2013. Committee members also reviewed and approved the draft plan. Since its involvement with the management plan revision, however, the Reserve Advisory Committee has not been playing a role in the management of the Reserve. OCRM encourages NBNERR staff to continue to consider how to use their Advisory Committee to further the development and implementation of Reserve initiatives. Reserve Advisory Committees can play many valuable roles including: engaging a broad array of stakeholders that can advocate for the Reserve; members can serve as a liaison to other resources; members can provide input to improve the effectiveness of the Reserve's annual priorities and work plans; and the committee can serve as a mechanism to engage other entities and resources to address specific problems and issues identified as a priority by the reserve.

Program Suggestion: OCRM encourages NBNERR to reexamine the role of the Advisory Committee and consider how it could best contribute to the successful management of the Reserve.

3. Staffing and Program Integration

At the time of the evaluation site visit, the Reserve was located within the Sustainable Watershed Office in the Bureau of Environmental Protection, one of three bureaus within RIDEM. Since the site visit, the Sustainable Watershed Office and the Reserve have been moved to the Division of Planning and Development within the Bureau of Natural Resources. RIDEM provides state funding and positions for a full-time caretaker and a .8 FTE for a Research Coordinator. At the time of the review, all core positions were filled and NBNERR had recently hired a much needed part-time administrative assistant to manage the office and support the procurement of supplies and services, track budget expenses, and provide information technology support.

The National Estuarine Research Reserve System is a federal-state partnership. OCRM asks to see state commitment to the program demonstrated through the funding of core Reserve positions: Reserve Manager, Research Coordinator, and Education Coordinator. OCRM acknowledges that many state budgets, including Rhode Island's, have been affected by the ongoing recession, but encourages the state to continue to explore options to convert the core Reserve Manager and Education Coordinator to state funded positions.

Program Suggestion: To ensure the long-term stability of the Reserve Manager and Education Coordinator positions, NBNERR and RIDEM should continue to pursue a permanent source of state funding for these positions.

With a new manager and several new staff members during the evaluation period the Reserve's programming has grown and expanded in new directions. The Reserve has identified the addition of a part-time volunteer coordinator, funded from outside sources, as a staffing priority in its draft 2009-2013 Management Plan. As programming continues to grow and mature, OCRM recommends that the Reserve look to the future, determine the priority growth area(s) and develop a long term staffing plan that supports the Reserve's vision. The Reserve might choose to build upon the management plan planning and implementation process or develop a separate long term staffing plan. For example, the Reserve might choose to target one activity in

its management plan and pursue grant funding to hire limited term staff to initiate and complete a project(s) or the Reserve might determine there is a need to hire new staff, or change the duties of current staff.

RIDEM provides the Reserve with key support to further the goals of the Reserve. For example, the Office of Management Services provides oversight on all NBNERR grants and processes expenditures. During this evaluation period, the Division of Planning and Development, which provides land acquisition services worked with NBNERR on the Ballard property acquisition. The Reserve also works closely with the Division of Fish and Wildlife which provides assistance with land management activities such as conducting controlled burns to maintain approximately 90 acres of fire-dependent natural communities.

The Reserve also provides key support to projects within RIDEM through its education and research efforts. For example, the Coastal Training Program (CTP) provides outreach support to the Sustainable Watershed Office through the development and provision of Conservation Development workshops for local governments and developers (see Section IV, D. Coastal Training Program for more information). The Reserve also conducts research that will enable managers to make more informed habitat management decisions, including determining the habitat and feeding preferences of wading birds which are declining in Narragansett Bay (see Section IV, B. Research and Monitoring Program for more information).

The evaluation team however, observed areas where increased communication and partnership between the Reserve and RIDEM's Division of Fish and Wildlife (DFW) would be beneficial. For example, deer management and tick-borne illnesses are of high concern to Prudence Island residents. The community continues to be very concerned about the high population of deer ticks on the Island and the significant risk of contracting serious debilitating tick-borne illnesses such as Lyme disease. The RIDEM DFW manages the Prudence Island deer herd population and the provision of hunting licenses. Since the time of the last evaluation, the deer herd population has been reduced due to changes in management of the herd.

Although the size of the deer herd has recently been reduced, the residents of Prudence Island continue to feel left out of the RIDEM planning process. Residents thus look to the Reserve to provide them with information on deer hunting plans as Reserve staff are the employees of RIDEM that are most easily accessible to island residents. NBNERR staff are uniquely positioned to communicate RIDEM's plans to island residents and to encourage input during open comment periods. The DFW should collaborate with Reserve staff to ensure that they are involved and knowledgeable regarding the planning process in order to capitalize on their relationships with Prudence Island residents.

At the time of the evaluation site visit, the Stewardship and Research Coordinators were planning to undertake a tick survey to determine if there has also been a reduction in the tick population. Since the evaluation site visit, the Reserve has initiated a tick survey to address this identified need. OCRM commends the Reserve for initiating the tick survey.

Program Suggestion: OCRM encourages the Division of Fish and Wildlife and NBNERR to continue to work on increasing communication and collaboration with regard to relevant issues, e.g. deer management planning.

4. National Estuarine Research Reserve System

The National Estuarine Research Reserve System (NERRS) relies on the expertise and time of its staff both at the national and state level to move the system forward and to undertake and successfully complete new initiatives. The previous evaluation found that NBNERR needed to reengage with, and contribute to, the national system including attending and actively participating in sector and manager meetings and workgroups. During the current evaluation period the NBNERR staff attended sector and manager meetings and participated on a number of committees in every sector including the National CTP Oversight Committee, CTP-System-Wide Monitoring Program, Integration Group, Habitat Mapping and Change Committee, and Restoration Science Workgroup.

Not only did NBNERR staff participate on various committees, they also volunteered to take on leadership roles. The Research Coordinator volunteered to be the NERRA Research Representative for two years, a significant time commitment. In addition, the Research Coordinator and staff planned and hosted the annual sector meeting in 2007. NBNERR hired a new Education Coordinator during the evaluation period, who also volunteered to take on a national leadership role as the NERRA Education Representative. The Education Coordinator has continued to show leadership and has been willing to take on new topics and leadership roles in the national system, such as taking an active role in the development of the NERRS K-12 Estuarine Education Program (KEEP).

Accomplishment: NBNERR staff reengaged with the national system and actively contributed to and supported various national initiatives.

5. 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 reserve 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.

The previous management plan covered the time period of 1998 to 2003. The previous 312 review conducted in 2004 had as a necessary action the completion of a management plan covering 2004-2008 but due to management turnover, the planning and writing of a new management plan was delayed. Beginning in December 2005, the NBNERR initiated a

collaborative planning process involving resource professionals involved in research, education, training, and stewardship at the Reserve and elsewhere in Rhode Island. A series of facilitated focus group meetings were held to identify management issues and solicit input for the plan. The Reserve also commissioned a telephone survey of island residents. The Reserve also used its reestablished advisory committee to provide input into plan development and as reviewers of the draft management plan. The draft management plan was submitted to NOAA before the site visit and comments were provided by NOAA. A second draft was submitted in September 2008 and NOAA provided comments on this draft in January 2009.

Accomplishment: The Reserve initiated an inclusive process to develop a new management plan and focus for the Reserve's next five years. This process helped to ensure the Reserve is addressing key management issues in the region.

Necessary Action: A revised draft of the NBNERR's Management Plan must be submitted by September 25th, 2009.

6. Partnerships

During the evaluation period reserve management and staff focused on building partnerships. The evaluation team heard throughout the evaluation, from many different partners, how much their relationship with the Reserve had improved. The Reserve partners with environmental organizations, Prudence Island residents, research institutions, and other organizations to complete a wide variety of projects and initiatives related to research, education, training, and stewardship. While a detailed discussion of all of the Reserve's partnerships is beyond the scope of this report the following deserve special mention.

a. Audubon Society of Rhode Island

One of the Reserve's key partnerships is with the Audubon Society of Rhode Island (ASRI). The Audubon Society provides essential administrative assistance to the Reserve and manages a contract for all but two Reserve employees. This contract provides a means of fully staffing the Reserve and ensuring that staff have basic benefits, while maintaining low overhead.

ASRI has been very patient with the difficulties of working in the state system in a time of budget crisis and reduced staff. Often the state is several months behind in processing payment requests and reimbursing ASRI for costs it has already incurred. OCRM encourages RIDEM to reimburse ASRI in a timely manner to ensure no disruptions of the Reserve's programming.

The Audubon Society also partners with the Reserve on various activities including promoting education opportunities. The Audubon Society has a strong focus on education and publishes a quarterly *Audubon Nature Tours and Programs* educational activity guide that is available on-line and mailed to approximately 30,000 people. Reserve education staff use the guide to advertise educational opportunities including Island bike tours, seal watching outings, and other educational events. Reserve tours are often at full capacity.

b. Prudence Island Residents

The Reserve's relationship with Island residents has improved during the review period. Previously, community members didn't feel connected to the Reserve and were less likely to volunteer or look to the Reserve for information. Reserve staff have taken the time to reach out to island residents and to engage them in Reserve activities. During the public meeting the evaluation team heard from island residents who were appreciative of reserve staff efforts to more openly and frequently communicate with them with regards to Reserve activities. Residents appreciated the initiation of an e-mail list serve providing residents with information on activities. Residents also appreciated that Reserve staff had listened to their concerns and for the first time in many years opened up the north end on a very limited basis for public access. Reserve staff also held two groundwater workshops at the request of island residents which are further described in the Coastal Training Program section. In return, island residents have pitched in to help the Reserve on various stewardship activities including providing home cooked meals to college students, who volunteered to help remove exotic species during their spring break.

Accomplishment: Reserve staff have improved relations between the Reserve and residents and successfully engaged islands residents in various stewardship and educational activities.

c. Rhode Island Coastal Management Program (Coastal Resources Management Council (CRMC))

One of the goals of the NERRS is to help address priority coastal management issues through scientific research conducted at reserves. Attaining this goal requires strong two-way communication and collaboration with the coastal management community. OCRM considers this to be important because the Coastal Zone Management Act calls for NERRS to provide management-oriented research necessary to support the development of state coastal management priority issue areas.

Historically, the NBNERR and Rhode Island CRMC have not worked closely together. The NBNERR and CRMC have recently made small steps towards working more closely together. For example, the Reserve Manager and CTP Coordinator are now participating on the Rhode Island Aquatic Invasive Species Council and the CTP Coordinator engaged CRMC and other organizations to plan the delivery of a Coastal Community Planning and Development course. That said, collaborative efforts are limited. During the site visit both the Reserve and CRMC staff noted the need for, and advantages of, working together more closely. In particular, CRMC staff noted areas where they were interested in potential partnerships including ocean management and managing conflicting uses, flood zone management, and special area management. NBNERR staff noted that there could be opportunities to partner in outreach and training activities as CRMC is already using RIDEM materials to conduct trainings. OCRM acknowledges that both programs must invest time and energy to develop the partnership in order for it to progress but encourage the NBNERR to continue to work with the CRMC to find

opportunities where partnering will be mutually beneficial. One potential means of enhancing collaboration is to build upon participation by CRMC on reserve advisory committees.

Program Suggestion: OCRM encourages the NBNERR and Rhode Island CRMC to continue to explore opportunities for future collaboration.

7. Facilities

In 1972, the U.S. Navy relinquished a base on Prudence Island and gave the land to the state of Rhode Island. In 1992, NBNERR expanded to include the south portion of Prudence Island and acquired several dilapidated buildings and docks that had been part of the Navy base. In 1993, RIDEM's Division of Planning and Development completed a master plan to assess the facilities' existing conditions and to identify necessary renovations and construction. Given funding constraints, the facilities plan outlined a phased approach.

The last phase of this project began in FY03 with federal funding assistance through NOAA grant NA03NOS4200180 and included the removal of asbestos, lead abatement, and demolition of an unsafe metal building and the addition of a new steel frame structure built to U.S. Green Building Council standards to support reserve operations.

In 2004, the Reserve reprogrammed funding from the construction of a new steel frame structure to the development of waterfront facilities around Prudence Island. At the time of the site visit, the removal of the unsafe metal building and the construction of a new weather station building were completed, as was the structural analysis of the T-wharf and a new design for the reconfigured T-wharf. The completion of the T-wharf renovations, restoration of the education annex, and installation of composting toilet at the T-wharf remained in process.

The NBNERR construction grant has been open for over six years and has been extended several times. OCRM acknowledges that there were difficulties in spending funds and changes to the scope of the project but strongly urge the Reserve finish the grant tasks by the end of the award period, August 31, 2010.

Program Suggestion: OCRM strongly encourages the Reserve to complete and begin closeout of NOAA grant NA03NOS4200180 for facility development, by August 31, 2010.

The Reserve does maintain two floating docks for small vessel access to the Reserve. One is located adjacent to the T-wharf at the South End and the other is located at Potters Cove at the North End. Both are limited to temporary docking for visitor transfer.

During the review period, the Reserve has focused on upkeep and improving its existing space. The Reserve headquarters, located in the South Prudence unit, provides approximately 5,000 square feet of lab and office space, a small conference room, visitor center, and workshop. The Reserve also has a dormitory that can house up to 12 individuals. There is an adjacent cottage that can provide temporary housing for visiting scientists, and a three-bay garage for housing equipment and workshop space. The Education Coordinator upgraded existing exhibits and

developed new exhibits. The new exhibits provide information on the Reserve to casual visitors, those on formal tours, and student groups. Landscaping on the Reserve site, including some minor landscaping done during the evaluation period, is comprised mainly of non-native plants. OCRM encourages the Reserve to landscape with native plants and to provide interpretive signage highlighting the advantages of landscaping with native plants. OCRM commends the Reserve for pursuing funding in FY09 to develop native landscaping around its facilities.

Now that the initial facilities development plan is wrapping up, OCRM encourages the Reserve to strategically consider and plan for the next phase of the Reserve's facility development. The Reserve has proposed modest improvement to facilities to address immediate needs in its draft 2009-2013 Management Plan. The Reserve's programming is growing in new directions and new facilities or facility improvements beyond those listed in the draft management plan may be needed as programs continue to expand. OCRM encourages the Reserve to tie future facility development to its public visitation goals and the growth of its education and community involvement programs. It may be helpful, to consider and plan for a longer time frame than the five years covered by the Management Plan. For example, if the Reserve is successful in drawing additional researchers to the Reserve and expanding its volunteer program there will likely be an increased need for temporary housing and storage for supplies. If the Reserve successfully expands its volunteer base and education program there may also be an increased need for workspace, a multi-purpose meeting room, or other facilities.

B. RESEARCH AND MONITORING PROGRAM

The mission of the NBNERR's Research and Monitoring Program, as outlined in the 1998 Management Plan, is to expand the scientific knowledge of estuarine processes to help address coastal resource management issues. This it to be accomplished through five goals:

- Promote opportunities for basic and applied research to advance the understanding of estuarine processes;
- Support the use of the reserve as a natural laboratory and reference site to assess environmental quality status and trends;
- Encourage and assist in a science-based multi-agency approach to ecosystem and watershed management to protect Narragansett Bay;
- Develop and integrate appropriate scientific and technical information into coastal decision-making; and
- Transfer scientific and technical information to the general public through integration with the reserve's Education and Outreach Program.

During the evaluation time period the Research and Monitoring Program has strengthened partnerships with the academic and research community including partnering with USEPA to research wading bird habitat preferences and hosting and mentoring a URI IGERT fellow who conducted priority research on the Reserve. The Program is staffed by a Research Coordinator who is supported with a .8 FTE by the state and a Marine Research Specialist and seasonal SWMP Assistant funded with federal funds through ASRI.

1. Reserve Research

The Reserve's Research and Monitoring Program has been a valuable leader and partner in conducting research that provides information to managers so that they can better address coastal management needs. For example, bird counts have shown that wading birds are decreasing in number in the Bay's salt marshes. In order to better determine wading bird preferences and needs, the Research Coordinator partnered with USEPA to look at differences in nekton and habitat availability along a human disturbance gradient at multiple study sites. This multi-year study will enable managers to make better informed management decisions when taking action to increase wading bird populations.

The Research and Monitoring Program has strengthened partnerships with academic and research communities and expanded existing studies. These partnerships are particularly important now, as the state of Rhode Island has a budget shortfall. The Research and Monitoring Program has worked with institutions and organizations such as EPA Atlantic Ecology Division, Save the Bay, and University of Rhode Island Marine Affairs and the Reserve to ensure resources are used efficiently and to partner with them to obtain outside funding for new research projects. For example, the University of Rhode Island conducted an initial human use mapping project in part of Narragansett Bay with the Reserve's participation and support. In 2007, this study was expanded to include areas in and around the Reserve, at the Reserve's request, and human use maps of the Reserve were produced. The new maps showed a few unexpected results including higher than expected use at Potters cove, a big boating area. It was hypothesized that this might relate to people camping without a permit. At the time of the review the Reserve had not yet analyzed this data to inform management efforts. OCRM encourages the Reserve to continue building on this project and to look for ways to incorporate the information into management decision making.

The Research and Monitoring and Stewardship Programs also successfully partnered with four other reserves and the NOAA Restoration Center to obtain NOAA Restoration Center funding to conduct a three-year evaluation of the success of 18 restoration projects. The five reserves will be monitoring salt marsh habitats within their boundaries to establish reference conditions and also nearby restoration projects. NBNERR will be monitoring a reference site and five restoration sites. Two of the restoration sites have recently been restored and three sites will be restored during the three year grant time frame. The project began in fall 2007.

The Reserve has struggled in the past to draw researchers to the Reserve as it can only be accessed by boat or ferry and the site has a high population of ticks. Despite these drawbacks, the Reserve has made progress in increasing the use of the site as a research site

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.

The NBNERR is fully compliant with NERRS SWMP requirements, monitoring four water quality stations for submission to the Centralized Data Management Office (CDMO). The four SWMP stations are located at 1) Potter's Cove, which is affected by boating waste; (2) Nag Creek, a tidal marsh, (3) water surface at the T-wharf; and (4) water bottom at the T-wharf. An automated on-site weather station collects meteorological parameters including air temperature, wind speed, wind direction, relative humidity, barometric pressure, photosynthetically active radiation, and precipitation at 15-minute intervals for the entire year. During the review period, real-time telemeter equipment was added to the weather station.

The NBNERR continues to contribute data to the Bay Window, which is a cooperative program that gathers broad, comprehensive data on the state of Narragansett Bay. The Reserve led the development of the monitoring and data quality control protocol for Bay Window in 2004, during the previous evaluation period.

The Reserve has also undertaken biological monitoring. For example, NBNERR completed its tier 1 submerged aquatic vegetation biomonitoring project. Reserve Research staff partnered with Save the Bay, Narragansett Bay Estuary Program, and URI Environmental Data Center to secure funding from the NOAA Restoration Center. They obtained and analyzed aerial photography to map and inventory eel grass distribution throughout the Bay, and published a report titled *Analysis of True Color Aerial Photography to Map and Inventory Zoster marina L. in Narragansett Bay and Block Island*.

During the site visit, Reserve staff discussed their plans to develop an annual water quality and meteorological report. OCRM encouraged the Reserve to devote resources to this project during the site visit. Since the site visit, the first annual report synthesizing water quality and weather data from monitoring sites on Prudence Island during 2007 was published.

2. Site Profile

NERRS implementing regulations require each reserve to develop a comprehensive site profile. A site profile is designed to: (1) compile scientific datasets relating to the reserve, (2) characterize the physical and biotic components of the environment, (3) synthesize the known ecological relationships within the reserve and its watershed (4) trace the impact of natural and human disturbances, and (5) explore the need for future research, education, and management initiatives.

During the previous review period, a Necessary Action highlighting the need to complete the Site Profile within a year of receipt of findings was included. The completed draft Site Profile is a valuable resource for partners in Narragansett Bay and is already being used as a reference document. The evaluation team heard from Reserve partners that the Site Profile was the most comprehensive look at Bay available, and a document critical to a large audience of researchers and students. Reserve staff should consider how the site profile and the management plan, once

it is finalized, might be used to bring more researchers and research projects to the site. OCRM commends the Research Program on finalizing the text of the Site Profile, after the site visit. The Site Profile is currently being published.

3. Graduate Research Fellowship (GRF) Program and other Fellowships

The NERRS GRF Program supports management-related research projects that enhance scientific understanding of the reserve system, provide information needed by reserve managers and coastal decision-makers, and improve public awareness and understanding of estuarine ecosystems and management issues. GRF funds are available on a competitive basis to students enrolled in a full-time Masters or Doctoral program at accredited colleges and universities in the United States. NBNERR successfully expanded the research being conducted at the reserve by focusing on recruiting students to work on research project through a variety of fellowship programs.

The Research and Monitoring Program supported a total of two GRFs during the evaluation period. In 2005, a GRF began researching the effects of winter temperatures in Narragansett Bay on the timing and size of ctenophore blooms. Ctenophores prey on zooplankton and in recent years blooms have been occurring earlier and are larger in response to warming water temperatures. Marsh vegetation die off has been an increasing problem in New England. In 2006, a GRF was awarded to research and quantify the impact of several factors; drought, eutrophication, and insect herbivory that are potentially contributing to salt marsh die-off.

The Reserve has also hosted student interns as part of the Integrative Graduate Education and Research Traineeship (IGERT) Program. The IGERT Program is run through the University of Rhode Island and funded by the National Science Foundation to promote multi-disciplinary science. The Research Coordinator has also collaborated on various projects with URI graduate students. As described earlier, the NBNERR location and deer tick problem present significant challenges to attracting researchers. OCRM commends the Program on expanding the use of the Reserve as a research site through the recruitment and mentoring of graduate students. OCRM encourages the Reserve to continue to focus on recruiting and supporting student researchers as a means to draw researchers to the Reserve.

C. EDUCATION AND OUTREACH

NBNERR's Education and Outreach Program's mission, as outlined in the 1998 Management Plan, is to increase awareness, understanding, and appreciation of estuarine systems and estuarine stewardship by facilitating access to information about estuarine systems and by providing opportunities for personal experiences with estuaries. This is to be accomplished through three goals:

- Provide high quality estuarine information and estuarine contact opportunities related to Narragansett Bay and to regional estuarine issues;
- Promote understanding by coastal zone decision makers within the Narragansett Bay watershed and the Northeast; and

- Collaborate in the study and development of statewide estuarine education and interpretation programs.

The NBNERR's Education and Outreach Program has grown and the Program now engages more children and members of the public in Reserve education as well as in stewardship and research activities. The Education Coordinator has also developed the Reserve's Outreach Program with an updated website, new e-mail list serve, 'branding' of the NBNERR, and upgrades to the visitor center. The Education and Outreach Program is staffed by an Education Coordinator who is funded with federal funds through ASRI. The Reserve also has a seasonal Naturalist who staffs the education kiosk at the T-wharf during the summer and assists with the Reserve's summer programming.

1. Education Program

Education programming at NBNERR is focused on onsite activities and introducing students and teachers to the Bay's ecosystem. During the evaluation period the Reserve expanded its education and public outreach programming and actively participated in regional marine education groups such as the South Eastern New England Marine Educators Association to promote marine education in the region. As discussed previously, (*see Section IV 3. Staffing and Program Integration*), the Education Coordinator also volunteered to be the Education Sector Representative and made significant contributions towards developing a national estuarine curriculum.

One priority of the Education Program is reaching children through summer camps. Many families that vacation on Prudence Island plan their vacation around specific summer camps. Initially, the Education Coordinator developed and held a week long NBNERR sponsored summer camp at the Reserve. The Educational Coordinator quickly realized that that the Reserve could more effectively provide learning opportunities to a far larger number of students by partnering with existing summer day camps on the island. The Reserve now partners with Prudence Island Conservancy and URI's W. Alton Jones Camp to provide environmental education to 100 kids with less effort than 12. In addition, the Education Coordinator has also begun working with home schooled children on the island to introduce them to the ecology of the Reserve.

The Reserve also conducts teacher trainings. During the tourist off-season the Reserve has initiated professional development workshops for teachers in partnership with the URI Office of Marine Programs, Save the Bay, and the South Eastern New England Marine Educators Association. These partnerships allows the Reserve to build upon the formal relationships other organizations hold with school districts.

During the evaluation period, the Education and Research Programs have made an extensive effort to integrate their programs. The Education Coordinator has incorporated the Reserve's eel grass report into educational activities including having students participate in snorkeling transects to determine eel grass coverage. The Education and Research Programs also worked to develop a pilot invasive crab monitoring program that will provide important research data and

educational opportunities. Visiting students and teachers now actively participate in the process of data collection for this research. At the time of the evaluation site visit, the Reserve had partnered with other New England National Estuarine Research Reserves to apply for a NOAA B-WET grant in order to hold 3-day teacher development workshops over three summers called Teachers on the Estuary (TOTE). The courses focus on topics of Research at the Reserves and are to be developed in conjunction with teacher advisory groups. The grant was successfully obtained and courses will be held in 2009, 2010, and 2011.

Accomplishment: The Education and Research Coordinators have successfully collaborated to incorporate Reserve research activities into summer camp programs and other educational activities.

2. Public Outreach

While year round island residents number about 150, the island population grows to over 2,000 during the summer. Getting participation from island residents in Reserve activities has proven to be a challenge as there are many competing activities and volunteer opportunities throughout the year, especially during the summer months. In order to better reach the community, the Reserve has chosen to hold a few large events to reach residents, including: a summer Bay block party with food, music, and educational activities; a sustainable fishing contest; holiday open house; and bi-annual beach cleanups. The Education Program has also chosen to be flexible and to hold impromptu education opportunities when they arise instead of focusing on organized programming for the islanders. OCRM commends the Reserve on identifying where and how it can increase island resident participation in Reserve events.

The Education Program has also developed different day trips to provide year-round programming. Trips offered include bike tours, seal watches, journal workshops and fall tours of gardens and pumpkin patches of Prudence Island. The trips are very popular, and some such as the seal watch tours, are full every year. The Education Program partners with Audubon to advertise guided day trips in the quarterly Audubon Nature Tours and Program Guide which has a circulation of over 30,000. The trips also provide non island residents with a chance to explore and learn about the island.

3. Visibility and Outreach Products

During the evaluation period, the Education Program has raised the Reserve's visibility through various activities including developing a "brand," updating and improving the website, creating new outreach venues, and providing information on Reserve activities and accomplishments. The Education Program has worked to raise the profile of the Reserve through the creation of a unique NBNERR logo and development of promotional items such as t-shirts, hats, stickers, and vehicle decals which are available for a recommended donation in the visitor center. The Education Program also upgraded and created new Learning Center and outdoor exhibits and is continuing to work on improvements. The Reserve staff updated the graphics and content of a tide calendar, a signature product that provides information on the Reserve's resources and programs. The calendars are distributed through partners, local shops and the Reserve. The

calendars are very popular locally. Future opportunities to increase outreach include continuing to work with the private owner of the ferry dock to encourage them to provide information on the Reserve.

In addition, the Education Coordinator set up an e-mail list to provide citizens with information on Reserve activities. Island residents at the public meeting noted that this e-mail list serve was very helpful in providing them with information so that they could better understand the Reserve's efforts. Anyone can join the mailing list through the Reserve's website and the distribution list is currently over 1,000 recipients.

In 2007, the Reserve published its first accomplishments report. The report provides a succinct overview of ongoing activities and accomplishments at the Reserve and has become an annual endeavor. The Reserve has also continued to publish a quarterly newsletter, also available online that provides information on Reserve activities. OCRM commends the Reserve for initiating an annual accomplishments report and increasing its venues for communicating with interested members of the public.

Websites are often the first place people search for information and are a valuable tool for distributing information. During the review period, Reserve staff upgraded the content, graphic layout and site map, and developed an electronic calendar of events for the NBNERR website, found at www.nbnerr.org. OCRM commends the Reserve for this work and encourages the Reserve to continue to invest time in updating the website to ensure it incorporates the latest knowledge in web usability and meets web accessibility guidelines.

Accomplishment: OCRM commends NBNERR on increasing the quality of its outreach products and developing new venues for outreach and information sharing, in particular an e-mail list serve and annual accomplishment report.

D. COASTAL TRAINING PROGRAM

An important aspect of a Reserve's education program is the Coastal Training Program (CTP). The CTP is 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. Planning for the program 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.

NBNERR's Coastal Training Program was fully implemented in November 2003. The overall strategic objectives of the Reserve's CTP, taken from the August 2008 draft Management Plan, are to:

- Provide training and tools to coastal decision-makers within the Narragansett Bay watershed;

- Enhance collaboration, coordination and communication among trainers who provide coastal decision-makers with training and technical support on issues related to Narragansett Bay and its watershed;
- Facilitate networking and information exchange between coastal decision-makers both within communities and between communities; and
- Provide ongoing technical assistance and science updates that supplement and support CTP trainings and products.

During the evaluation period the NBNERR has provided local governments and developers with the planning and GIS information necessary to improve development design and promote conservation oriented subdivisions, increased coordination among training providers in the region, and held various training workshops on topics such as riparian buffer restoration. The CTP is staffed by a CTP Coordinator funded with federal funds through ASRI.

The NBNERR is located within RIDEM's Sustainable Watersheds Office. The mission of the Office is to assist communities plan for sustainable development that minimizes negative impacts to the environment and preserves community character and meaningful open space. The NBNERR CTP plays a key role in implementing this mission and enables the Sustainable Watershed Office to reach municipal staff, volunteers, and those in the development industry.

The NBNERR CTP's primary audience is municipal staff (including town planners and managers), municipal volunteers (including planning and zoning board members and town council members), designers and developers, landscape architects, engineers, and attorneys. Secondary audiences include tax assessors, economic development boards, conservation commissions, and state regulators. Tertiary target audiences include watershed councils, land trusts, and other non-profit organizations.

The Narragansett Bay area is seeing increasing sprawl outside of metro Providence and local governments and their planning boards are tasked with managing this growth. Planning board members are often volunteers and are not required to have any training before resuming their roles as board members.

Therefore, one key effort of RIDEM's Sustainable Watersheds Office is promoting Conservation Development, a creative land use technique that allows a community to guide growth to the most appropriate areas within a parcel of land to avoid impacts to the environment and to protect the character-defining features of the property. It differs from traditional development in that assessment of natural resources, not identifying building sites, is the first step in the process. The Office developed a Conservation Development Manual, building and expanding on Randall Arendt's work. Arendt is an expert on creative development design as a conservation tool. This Manual is a model that could be applied in other areas nationally. The Office had a great tool but no way to deliver it to the appropriate audiences. The CTP Coordinator has filled this gap and developed and delivered 14 Conservation Development workshops and presented at various other venues, reaching over 600 people. As of the site visit, seven towns had adopted the model ordinance and 17 towns have ordinances pending. It is expected that most rural towns will adopt this ordinance. OCRM commends the CTP for successfully providing town planners, planning

board members, and others with information and tools to better manage development in their communities.

The Town planners that the evaluation team met with felt that the Conservation Development workshop held by the CTP was essential to the success of getting the ordinances passed in their town. The town planning boards appreciated hearing from outside experts that the ordinances were a valuable tool that the towns could use to improve their planning in a legally defensible manner. The town planners also identified a need for incorporating low impact development ideas into subdivision regulations and to work with and educate other town organizations such as fire and police departments who have traditionally promoted wide roads for easy access.

In collaboration with RIDEM, the CTP Coordinator also assisted with the delivery of five trainings on a mapping product that accompanies the Conservation Development Manual. The mapping product, a Conservation Design DVD, allows developers to create maps with different data layers and to present the maps to the planning board. Planning board members can also use the DVD to develop maps and look at a development's impacts. GIS software isn't required to be able to use the DVD which has all the necessary data layers making it easy and free for anyone to use to make maps.

Accomplishment: The CTP's Conservation Development trainings have led seven towns to adopt conservation development ordinances and seventeen towns had ordinances pending, as of the evaluation site visit.

The CTP Advisory Committee is large, with about 20 different groups represented who are all involved in outreach and training within the state. The groups coordinate on various activities such as partnering to conduct surveys and peer reviewing each others' workshops, but there is room for improved coordination and communication. To help coordinate these many efforts the CTP program developed an online community calendar with GrowSmart Rhode Island, that provides timely and comprehensive announcements of training events throughout the Narragansett Bay watershed at www.communityconnectionri.org. All groups are encouraged to submit information on their trainings to ensure that people know about training opportunities and to maximize limited resources. The idea for the online calendar came out of a CTP Advisory Committee meeting.

The CTP Advisory Committee provides a good venue for trainers to get together and strategize, partner, and share. The Committee met twice in 2006 and 2007 but had not met yet in 2008 as of the evaluation site visit and partners were relying on individual phone calls for planning and sharing. Although one-to-one communication was addressing most needs, the evaluation team noted that there were still opportunities where engaging a larger group in sharing ideas or coordinating efforts might be beneficial. OCRM encourages the CTP to continue to consider how an advisory committee can best benefit the CTP. Based on the results of this analysis, the CTP may wish to consider restructuring the Committee. During the evaluation, the team noted that the CTP Advisory Committee was large and one option might be to restructure the Committee to involve a smaller number of key partners more regularly and other groups on an as needed basis for implementing specific programs.

Program Suggestion: OCRM encourages the NBNERR to reexamine the role of the CTP Advisory Committee and consider how it could best contribute to the success of the Coastal Training Program.

As noted previously, there are many groups that are conducting outreach and training activities in Rhode Island. OCRM encourages the CTP to consider updating its strategy which could be based on an updated market analysis and/or needs assessment. This could help the Reserve continue to focus where its efforts are of most value. The CTP may also wish to explore opportunities for collaboration with the Waquoit Bay NERR in Massachusetts as two-thirds of Narragansett Bay's watershed is in Massachusetts.

The CTP Coordinator has successfully partnered with organizations in the state to provide training on relevant topics. The CTP partnered with Grow Smart Rhode Island to deliver a smart growth conference called the "Power of Place Summit" in both 2006 and 2008. Approximately 500 people attended the Summits. Participants heard from local and national experts on a variety of development-related topics from the environmental impacts of sprawl to water availability and learned about specific tools for implementing smart growth. Additionally the CTP, in cooperation with the Rhode Island Rivers Council and the Rhode Island Land Trust Council, cosponsored and exhibited at the Land and Water Conservation Summit in 2006, 2007, and 2008. The Summit is a day-long conference that provides over 300 land trust and watershed council members, municipal staff, volunteers, and others interested in land and watershed conservation with the information, skills, and connections they need to be effective. The Summit offers 30 workshops on topics ranging from stormwater mitigation strategies to protecting stream flows to coastal buffer restoration and enhancement. Participation in these statewide conferences brings RIDEM and Reserve resources and knowledge to planners and natural resource managers throughout the state.

E. STEWARDSHIP PROGRAM

Stewardship is a functional role at each reserve, involving aspects of research, monitoring, education, policy, and implementation of resource management actions. Stewardship provides long-term protection of natural resources within the system and serves to model responsible management practices to coastal communities.

The primary goals of the Reserve's Stewardship Program as described in the 1998 Management Plan are:

- Protect and preserve the diverse estuarine habitats representative of the region;
- Restore or manipulate the structure and functional diversity and dynamics of native biotic communities in Reserve lands and waters to emulate the ecological conditions of specific periods in time; and
- Participate and cooperate with resource protection activities for the Narragansett Bay ecosystem and watershed.

The NBNERR has conducted and facilitated various stewardship projects under each of these three priorities. During the review period, the Stewardship Coordinator had made significant progress in restoring and maintaining habitat, initiated and facilitated partnerships to further the protection of the Reserve's resources, and assisted with land acquisition and protection. The Stewardship Program is staffed by a Stewardship Coordinator funded with federal funds through ASRI.

1. Habitat Restoration

Prudence Island, Hope Island, and Patience Island were farmed in the 1700s and early 1800s and the Islands have experienced ongoing disturbance by human activities including residential and recreational use. Reserve restoration activities have focused on Prudence Island which includes pine barren, forested wetland, coastal dune, upland grass, and shrub communities. The uplands of the Reserve contain over 80 exotic species but the biggest infestation is by Asiatic bittersweet. Other notable invasive plants include the autumn olive and European larch.

During the evaluation period the Stewardship Coordinator expanded the active restoration of upland areas and communities such as grassland and shrubland. Grasslands are declining in Rhode Island but provide habitat to several endangered and threatened species. In order to increase and maintain grasslands in the Reserve, the Stewardship Coordinator partnered with the RIDEM Division of Fish and Wildlife (DFW) to clear approximately 18 acres of a grassland/shrubland complex as part of a long-term strategy to restore more than 80 acres of grassland which has been declining state wide. The NBNERR also contains 91 hectares of coastal pine barrens, a regionally and globally rare ecosystem which is dependent upon fire. The NBNERR partnered with DFW, the town of Portsmouth, the Prudence Island Volunteer Fire Department, and others to complete two burns in 2007 to help manage and maintain the pine barren ecosystem. The Stewardship Coordinator also conducted a pilot program to create habitat for the Tiger Beetle, listed as threatened by the U.S. Fish and Wildlife Service. The Tiger Beetle prefers to live in open compacted mineral soil and a tractor harrow was used to compact the soil and create open space. OCRM commends NBNERR and DFW for partnering to successfully restore native communities on the Reserve.

Addressing invasive plants and their impacts is usually a time and labor intensive process. Some areas of the Reserve are significantly impacted by invasive exotics. The Stewardship Coordinator has successfully pursued outside funding, built partnerships, and developed innovative programs and opportunities for island residents and others to assist the Reserve in addressing this issue. For example, the Stewardship Coordinator established a Cooperative Weed Management Area (CWMA) for Prudence Island. CWMA's are local organizations that provide a mechanism for sharing invasive plant management resources across jurisdictional boundaries in order to achieve widespread invasive plant prevention and control. As part of the CWMA's efforts to remove autumn olive, the Reserve held its first alternative spring break in 2008 for college students. The students removed large amounts of autumn olive in the Reserve. In support of the program, island residents brought the students home cooked meals every night. The Stewardship Coordinator also developed the weed whacker and woodcutters program which are described below in the Community Partnerships section. OCRM commends the Stewardship

Program on expanding the restoration activities at the Reserve and involving the local community through various volunteer opportunities.

Accomplishment: The Stewardship Coordinator expanded the Reserve’s active habitat restoration work and created and built on existing partnership to complete various restoration projects during the review period.

Although exotic and invasive species are a significant problem, the Reserve does not have a comprehensive long-term plan for how to address this overwhelming issue in the Reserve’s upland areas. OCRM recommends that the Stewardship Program consider building upon the CWMA planning efforts and developing a comprehensive long-term plan that would include priority areas for restoration, options for action, research opportunities, and possible resources. Reserve research is currently focused on issues related to the Reserve’s marsh areas. A long-term stewardship plan should also look at upland land management research needs and highlight priority research opportunities. Research on how to best address upland exotics may lead to changes in management practices and revisions to the stewardship plan. OCRM encourages the Reserve to implement and expand upon its draft 2009-2013 Management Plan strategy to “Eliminate or reduce the spread and introduction of invasive species and their impacts on ecosystem function.” A detailed stewardship plan may also be used as a tool to highlight needs and draw additional resources to the reserve.

Program Suggestion: OCRM encourages the Reserve to develop a long-term plan to address exotics and invasive species, including those in upland areas. The plan should consider research opportunities to determine what management techniques are most effective.

2. Community Partnerships

During the evaluation period community engagement in NBNERR initiatives has been increased through a number of stewardship programs. For example, the Stewardship and CTP Coordinators have partnered with island community groups to address concerns about the groundwater resources on Prudence Island. The Reserve held a community workshop in 2007 which led to the establishment of a groundwater level and stream flow monitoring program. This initial workshop led to a second workshop at the request of the community that focused on how to conserve water. The Stewardship and CTP Coordinators continue to serve on a local taskforce to better understand the island’s groundwater resource and to promote conservation practices.

Another popular community program that was previously allowed in the Reserve was the “Home Fuel Program.” This program was revamped into the “Volunteer Woodcutting Stewards Program.” The Program now includes community education and woodcutting stewards cut the invasive European Larch in areas targeted for restoration in exchange for the opportunity to harvest hardwoods for fuel. Thirty five volunteers have contributed approximately 550 volunteer hours towards removing the European larch which is encroaching on pine barren habitat. The Stewardship Coordinator also engages the community in other restoration events. Twice a year, in partnership with the Prudence Conservancy, a Weed Whacker event is held and volunteers

remove invasive species. During the public meeting it was noted that the Reserve's controlled burns and multiple clearing efforts were positive changes.

Public access to Reserve managed land was noted by residents as an area of improvement during the evaluation period. For many years, vehicular access to the north end has been cut off due to safety and the need to monitor access if allowed. Long-time residents, though, have fond childhood memories of visiting and having free run over the north end of the Island. In 2007, the north end was opened for a weekend and this was greatly appreciated by residents. Residents suggested that the Reserve continue to provide this opportunity on a regular basis. OCRM commends the Reserve for opening the north end and encourages the Reserve in its efforts to continue to open the north end several times a year. Occasionally opening the north end could increase support within the community without over-taxing Reserve staff resources.

An emerging issue in the Reserve is the migration of coyotes onto Prudence Island. Residents expressed concern about their personal safety. OCRM encourages the Reserve to monitor the coyote population to inform management decisions and to explore the need for community education on how to discourage human-coyote interactions.

3. Land Acquisition

The Reserve land holdings include nine property units located on three islands. The smaller islands, Patience Island and Hope Island, are fully owned by the state except for three very small private in-holdings on Patience Island. The majority, 75 percent, of Prudence Island is protected including smaller parcels owned by Audubon and the Prudence Island Conservancy. With the approval of a new management plan the Reserve anticipates adding Dyer Island and the 128-acre Ballard property on Prudence Island to the Reserve.

The 128-acre Ballard property was acquired with Coastal and Estuarine Land Conservation Program (CELCP) funds. CELCP provides funds to state and local governments to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical or aesthetic values. Priority is given to parcels that are identified by Reserves for acquisition. The state program is administered by the CRMC with the assistance of the RIDEM Division of Planning and Development. The Reserve's previous manager had helped to identify key parcels for acquisition but since this time there has been little communication between the Reserve and CRMC regarding CELCP. OCRM recommends that the Reserve and CRMC coordinate to make sure that key parcels that would enhance the Reserve are included as priority acquisitions in the state's CELCP plan. This recommendation is especially timely, as CELCP legislation was passed in 2009 setting aside 15 percent of CELCP funds for land acquisition projects that benefit Reserves.

The Stewardship Coordinator worked with the Prudence Conservancy to help develop their land acquisition criteria. The Conservancy has chosen to focus on acquiring the three large parcels remaining in the watershed that feed into the major town well. The Stewardship program has also provided technical and GIS assistance to the Prudence Conservancy in support of their land acquisition and management efforts.

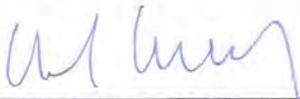
V. CONCLUSIONS

For the reasons stated herein, I find that the State of Rhode Island is adhering to the programmatic requirements of the National Estuarine Research Reserve System in the operation of its approved Narragansett Bay National Estuarine Research Reserve (NBNERR).

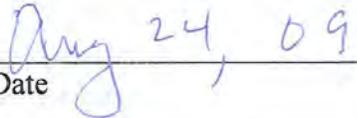
NBNERR has made notable progress in the following areas: reserve management; engagement at the national program level, enhancement of its Education and Outreach Program; the implementation of the Reserve's Coastal Training Program; and the Stewardship Program's expansion of active habitat restoration activities.

The findings contain one Necessary Action which must be addressed according to the timeline provided. These evaluation findings also contain recommendations in the form of Program Suggestions. The Program Suggestions should be addressed before the next regularly scheduled program evaluation, but 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 NBNERR that may have implications regarding the state's financial assistance awards. However, it does not make any judgment on or replace any financial audits.



David M. Kennedy, Director
Office of Ocean and Coastal Resource Management



Date

VII. APPENDICES

APPENDIX A. Summary of Accomplishments and Recommendations

The evaluation team documented a number of the NBNERR's accomplishments during the review period. These include:

ISSUE AREA	ACCOMPLISHMENT
Operations and Management	RIDEM improved the management of the Reserve by: (1) hiring one full-time Reserve Manager; (2) hiring a part-time administrative assistant; (3) developing a contractual relationship with ASRI to administer non-state employee salary and benefits; and (4) working with ASRI to develop a competitive process for recruiting new staff.
Operations and Management	NBNERR staff reengaged with the national system and actively contributed to and supported various national initiatives.
Operations and Management	The Reserve initiated an inclusive process to develop a new management plan and focus for the Reserve's next five years. This process helped to ensure the Reserve is addressing key management issues in the region.
Operations and Management	Reserve staff have improved relations between the Reserve and residents and successfully engaged islands residents in various stewardship and educational activities.
Education and Outreach	The Education and Research Coordinators have successfully collaborated to incorporate Reserve research activities into summer camp programs and other educational activities.
Education and Outreach	OCRM commends NBNERR on increasing the quality of its outreach products and developing new venues for outreach and information sharing, in particular an e-mail list serve and annual accomplishment report.
Coastal Training Program	The CTP's Conservation Development trainings have led seven towns to adopt conservation development ordinances and seventeen towns had ordinances pending, as of the evaluation site visit.
Stewardship	The Stewardship Coordinator expanded the Reserve's active habitat restoration work and created and built on existing partnership to complete various restoration projects during the review period.

In addition to the accomplishments listed above, the evaluation team identified several areas where the NBNERR could be strengthened. Recommendations are in the form of Necessary Actions and Program Suggestions. Areas for improvement include:

ISSUE AREA	NECESSARY ACTION
Operations and Management	A revised draft of the NBNERR's Management Plan must be submitted by September 25 th , 2009.

ISSUE AREA	PROGRAM SUGGESTION
Operations and Management	OCRM encourages NBNERR to reexamine the role of the Advisory Committee and consider how it could best contribute to the successful management of the Reserve.
Staffing	To ensure the long-term stability of the Reserve Manager and Education Coordinator positions, NBNERR and RIDEM should continue to pursue a permanent source of state funding for these positions.
Operations and Management	OCRM encourages the Division of Fish and Wildlife and NBNERR to continue to work on increasing communication and collaboration with regard to relevant issues, e.g. deer management planning.
Operations and Management	OCRM encourages the NBNERR and Rhode Island CRMC to continue to explore opportunities for future collaboration.
Facilities	OCRM strongly encourages the Reserve to complete and begin closeout of NOAA grant NA03NOS4200180 for facility development, by August 31, 2010.
Coastal Training Program	OCRM encourages the NBNERR to reexamine the role of the CTP Advisory Committee and consider how it could best contribute to the success of the Coastal Training Program.
Stewardship	OCRM encourages the Reserve to develop a long-term plan to address exotics and invasive species, including those in upland areas. The plan should consider research opportunities to determine what management techniques are most effective.

APPENDIX B. PERSONS AND INSTITUTIONS CONTACTED

Narragansett Bay National Estuarine Research Reserve

NAME	TITLE
Bob Stankelis	Manager
Kenny Raposa	Research Coordinator
Kristin Van Wagner	Education Coordinator
Robin Weber	Natural Resources/GIS Specialist
Jennifer West	Coastal Training Program Coordinator
Daisy Durant	Marine Research Assistant (SWMP program)
Nan Jurnak	Administrative Assistant
Scott Millar	Chief, Sustainable Watersheds Program, RIDEM (Program Oversight)

Rhode Island Department of Environmental Management

NAME	DEPARTMENT OR PROGRAM	TITLE
Lynne Keller	Rhode Island Department of Environmental Management	Administrator, Financial Management
Alan Gates	Rhode Island Department of Environmental Management	Principal Sanitary Engineer
Lisa Primiano	Rhode Island Department of Environmental Management	Supervisor, State Land Conservation and Acquisition Program
Paul Jordan	Rhode Island Department of Environmental Management	Supervising GIS Specialist
Dr. W.M. Sullivan	Rhode Island Department of Environmental Management	Director
Larry Mouradjian	Rhode Island Department of Environmental Management Bureau of Natural Resources	Associate Director
Alicia Good, P.E.	Rhode Island Department of Environmental Management Office of Water Resources	Assistant Director
Brian Teft	Rhode Island Department of Environmental Management	Principal Wildlife Biologist
Lori Gibson	Rhode Island Department of Environmental Management	Supervising Wildlife Biologist

State of Rhode Island

Name	Organization	Title
Dr. Malia Schwartz	Rhode Island Sea Grant Research and Development	Assistant Director
Jennifer McCann	Rhode Island Sea Grant Coastal Programs	Extension Leader

Richard Ribb	Narragansett Bay National Estuary Program	Director
Dr. Chris Deacutis	Narragansett Bay National Estuary Program	Chief Scientist
Meg Kerr	Narragansett Bay National Estuary Program	Watershed and Community Outreach Coordinator
Mike Bradley	University of Rhode Island Environmental Data Center	Research Associate
Gail Skowcroft	University of Rhode Island Office of Marine Programs	Associate Director
Maryann Scholl	University of Rhode Island Office of Marine Programs	Education Programs Coordinator
Dr. Pete August	University of Rhode Island Coastal Institute	Director
Kevin Cute	Coastal Resources Management Council	Policy and Planning

Program Partners

NAME	AFFILIATION	TITLE
Dr. Rick McKinney	Environmental Protection Agency	Research Ecologist
Dr. Cathy Wigand	Environmental Protection Agency	Research Ecologist
Kristin Swanburg	Audubon Society of Rhode Island	Senior Director of Education Programs
Bob Marshall	Prudence Conservancy	Chairman
Harry Sterling	Prudence Island Planning Commission	Chairman
Cathy Cressy	Audubon Society of Rhode Island	Senior Director of Administration
Susan Mansolillo	Audubon Society of Rhode Island	Finance and Information Systems Manager
Sheila Brush	Growsmart Rhode Island	Director
Roland Wolanski	Town of Middletown	Director of Planning and Economic Development
Chris Spencer	Town of Tiverton	Planner
Dr. Marci Cole-Eckberg	Save the Bay	Coastal Ecologist
Bridget Kubis-Prescott	Save the Bay	Director of Education
Rob Hudson	Save the Bay	Restoration Ecologist
Eric Pfirrmann	Save the Bay	Lead Captain

APPENDIX C: PERSONS ATTENDING THE PUBLIC MEETING

NAME	AFFILIATION
Richard Owen	Citizen
Brian Weber	Resident
Matthew C. Rehor	Resident
Bob Marshall	Prudence Conservancy
Frank Jurnak	Resident
P. Richard	Resident

APPENDIX D: NOAA'S RESPONSE TO WRITTEN COMMENTS

OCRM received no written comments regarding the Narragansett Bay NERR, Rhode Island.

APPENDIX E: NB NERR'S RESPONSE TO 2004 EVALUATION FINDINGS

Program Suggestion: NOAA encourages DEM and NBNERR to develop a staffing plan that identifies: (1) the Reserve Manager as a single, full-time position; (2) staffing needs that may arise as the reserve's programs grow; (3) ways to provide consistent, long-term support for reserve staffing and operations; and (4) a competitive process for recruiting new staff.

NB NERR Response: In July 2005 The Rhode Island Department of Environmental Management (RIDEM) hired a single manager to be responsible for all Reserve operations. The manager is a state employee and reports to the Administrator of the Sustainable Watersheds office within the Office of Water Resources. This position also spends 25% of their time regarding Reserve activities. In January 2006 the Manager initiated an expansion of the State partnership with the Audubon Society of Rhode Island (ASRI) to administer non-state employee salary and benefits. In the spring of 2006 the manager in collaboration with ASRI and RIDEM developed a human resources policy that strikes a balance between the policies of ASRI and the State of Rhode Island. This includes an open and competitive hiring process that requires wide advertisement of open positions, a search committee of at least three individuals, and standardized interview questions etc. It remains the policy of the NBNERR to hire the best qualified candidates for each position. Since that time, two full time staff members have been hired through this process. Uncertainties in future funding require that Reserve staffing must be flexible to take advantage of opportunities or needs as they arise.

Program Suggestion: NOAA strongly urges NBNERR's Manager and core staff to regularly attend Reserve System-wide meetings. When possible, the Stewardship Coordinator and CTP Coordinator also should attend Reserve System-wide meetings as well.

NB NERR Response: All core staff have attended required sector meetings and technician training workshops. In addition several staff members have served as various sector representatives for the NERRS.

Program Suggestion: NOAA highly recommends that NBNERR re-establish its Advisory Committee as soon as possible. Committee membership should include community representatives.

NB NERR Response: The NBNERR reestablished its overall advisory committee in the spring of 2006. The focus of the advisory committee was to broadly discuss the future roll of the NBNERR in RI and how we can find a niche and fulfill our mission with NOAA and meet the needs of local stakeholders. The committee reviewed and approved the revised management plan. The committee includes: the RIDEM Director and various DEM division chiefs, directors of local NGOs, university representatives, community leaders and local constituents. A listing of members of the committee can be found in Appendix A. Due to a general consensus, NBNERR and RIDEM felt it only necessary to convene the Reserve Advisory Committee on an as needed basis to discuss important programmatic issues. Smaller, more specific sector related advisory committees

focusing on certain issues would best serve the Reserve. Regular input from these sector committees helps to guide Reserve programs.

Necessary Action: Within one month of receipt of final evaluation findings, NBNERR must submit a strategy and timeline for revising its management plan to NOAA. The strategy must describe a process for community involvement. Once the strategy and timeline are complete, NBNERR must provide updates on the management plan's revision process in its semi-annual performance reports. The plan must be completed no later than 18 months following receipt of the final evaluation findings, unless a modification to the deadline is approved by NOAA.

NB NERR Response: The manager has provided updates on the progress of the Management Plan in its semi-annual reports and through communication with the ERD program specialist. Since the fall of 2005, Reserve staff have taken significant steps to meet with stakeholders and gather input for the Management plan revision. In addition to numerous focus group meetings, an extensive telephone survey of island property owners was conducted to gather local community input on Reserve programs and operations. The survey was developed in collaboration with the University of Rhode Island and representatives from local island organizations to provide the most useful information possible. Recommendations from this survey have already been implemented and incorporated into the draft management plan. The NBNERR has recently submitted a draft of the new 2008-2012 Management Plan to ERD for review. This is in accordance with a deadline extension and NERR Action Plan which was granted due to changes in Reserve staffing during this time.

Program Suggestion: NOAA strongly recommends that NBNERR and DEM conduct a study that thoroughly examines: (1) the capacity of the reserve's staff, facilities and programming to handle increased visitation; (2) the public health risk of increasing visitation in an area where people are at significant risk of contracting one or more debilitating tick-borne illnesses. Such a study should be a component of the impact analysis to be completed during the management plan revision.

NB NERR Response: At the present time, the Reserve has not conducted a study of the impacts of increased visitation. However, the Reserve staff in cooperation with URI documented how the reserve was being used by visitors last summer. This analysis will help the Reserve determine how we can improve necessary facilities to accommodate visitors.

Necessary Action: NBNERR must work towards resolution of the issues surrounding the timely completion of grant tasks as soon as possible. Upon receipt of final evaluation findings, NBNERR also must immediately begin submitting performance reports on time. Performance reports must cover the relevant reporting period only.

NB NERR Response: The NBNERR has taken steps to consistently deliver the performance reports to NOAA on time. Because of significant staff turnover since the last 312 review, several grants have been extended to complete specific tasks. We hope a stable compliment of staff members will allow NBNERR to complete all grant tasks on time going forward.

Program Suggestion: The Research and Monitoring Program should work with the local and regional research community to explore options for increasing research at NBNERR. The Research and Monitoring Program should develop a plan to expand the reserve's research potential and productivity. The Research and Monitoring Program should establish a research advisory committee to assist with this action, provide input for the management plan, and provide ongoing support and advice.

NB NERR Response: The Reserve convened a research and monitoring program focus group on June 2, 2006. Based upon this and other meetings, the Reserve has developed a plan to bring additional outside researchers to the Reserve. This plan is included in Appendix B. As with other program sectors, increasing the visibility of the Reserve through greater participation in local workgroups and meetings as well as by producing additional outreach material has helped promote research opportunities at the Reserve. However, the logistics of conducting work on any of the Reserve's island properties presents some very significant challenges. While Reserve staff members help in any way possible, some researchers may be discouraged from traveling to the Reserve when similar habitats are available on the mainland.

Necessary Action: Within one month of receipt of final evaluation findings, the Research and Monitoring Program must submit a timeline for completing the site profile to NOAA. Once the timeline is developed, NBNERR must provide updates on the site profile's status in its semi-annual performance reports. The site profile must be completed within a year following the receipt of final evaluation findings.

NB NERR Response: The Site Profile has now been reviewed by ERD and is in final editing.

Program suggestion: NOAA strongly encourages the Education and Outreach Program to identify new goals and to evaluate how each activity furthers those goals given the shift in program priorities from K-12 education to community outreach. The revised management plan should address the Education and Outreach Program's current goals and activities with regard to planned boundary expansions, improved reserve facilities and new opportunities that will be created as partners like Save the Bay expand their facilities and programs.

NB NERR Response: The NBNERR Education and outreach focus group met on June 26, 2006 to address issues of program goals, objectives, tasks and outcomes. Input from these meetings helped to define objectives and strategies for meeting our goals. Significant among these was enhancement of program visibility through a variety of media including an enhanced website, frequent mini newsletters called e-alerts, expansion of our signature Bay tide calendar, and continued attendance at large regional public events.

Program suggestion: NOAA strongly encourages the Stewardship Program and DEM to work collaboratively with the residents of Prudence Island to develop an effective deer management program that not only reduces the herd to an optimal size, but also addresses concerns held by residents. NOAA also encourages the Stewardship Program and DEM to renew efforts to enlist the assistance of the Rhode Island Department of Public Health in addressing the prevalence of tick-borne illnesses.

NB NERR Response: The NBNERR has continued to work with local stakeholders to develop a plan for enhanced communication related to deer management on the island. A well attended workshop was held in the fall of 2005 for island residents to hear from experts in the field of deer management and tick born disease. Since the last 312 review the deer herd has been significantly reduced. The goal now will be to maintain the deer population at a healthy level. During this time, several other factors have been at work. A likely increase in the coyote population on the island may also be having an effect on the deer population, by keeping the population from expanding too quickly. While routine measurements of tick density on the Island have not yet been conducted, there has been a marked increase in tick density on the mainland. A greater public education campaign within the State concerning protection against tick-borne disease has reduced the perception that Prudence Island is a dangerous place because of the high tick densities. This coupled with greater program visibility has resulted in moderate increases in public visitation.