

FINAL EVALUATION FINDINGS

**ASHEPOO-COMBAHEE-EDISTO (ACE) BASIN
NATIONAL ESTUARINE RESEARCH RESERVE**

January 2002 through January 2006



Office of Ocean and Coastal Resource Management
National Ocean Service
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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 Ashepoo-Combahee-Edisto (ACE) Basin National Estuarine Research Reserve (ACE Basin NERR or Reserve) during the period from January 2002 through January 2006. The Reserve is administered by the South Carolina Department of Natural Resources (DNR) Marine Resources Division (MRD).

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

The evaluation team documented a number of ACE Basin Reserve accomplishments during this review period. The assumption of the sole lead agency role for the Reserve by the Department of Natural Resources has been accomplished smoothly, and the Reserve and the South Carolina Department of Parks, Recreation, and Tourism successfully collaborated on the construction and operation of the new Edisto Interpretive Center. The Reserve continues to maintain its strong programs in research, monitoring, education, and stewardship. Some of the success in these areas is because of the Reserve's remarkable ability to develop and maintain numerous partnerships with governmental and non-governmental organizations and citizen groups. The Coastal Training Program is now fully operational.

During the period covered by this evaluation, the Reserve acquired property that will increase the size of its core area by almost 10,000 acres when it is included in the Reserve boundary. The staff has begun a transition to move the stewardship program beyond land acquisition toward activities that develop an awareness of and appreciation for the ACE Basin and give people a sense of personal responsibility in actions that make a difference in protection and conservation.

The evaluation team also identified areas where the Reserve and its programming could be strengthened. This includes one Necessary Action. The Reserve's original (1992) management plan has still not been updated, and the revisions must be completed and finalized by November 30, 2006. All other recommendations are in the form of program suggestions and include: hiring administrative support; developing a strategy to increase use of the McKenzie Field Station for research; seeking additional opportunities for collaboration with Sea Grant and the state coastal management program; and promoting the identity and visibility of the Reserve.

II. PROGRAM REVIEW PROCEDURES

A. OVERVIEW

The National Oceanic and Atmospheric Administration (NOAA) began its review of the ACE Basin Reserve in October 2005. The §312 evaluation process involves four distinct components:

- An initial document review and identification of specific issues of particular concern;
- A site visit to South Carolina, including interviews and public meetings;
- Development of draft evaluation findings; and
- Preparation of the final evaluation findings, partly based on comments from the state regarding the content and timetables of 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 ACE Basin Reserve approved by NOAA. These must be carried out by the date(s) specified;

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

A complete summary of accomplishments and recommendations is outlined in Appendix A.

Failure to address Necessary Actions may result in a 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 ACE Basin Reserve.

B. DOCUMENT REVIEW AND ISSUES DEVELOPMENT

The evaluation team reviewed a wide variety of documents prior to the site visit, including: (1) 2002 ACE Basin Reserve §312 evaluation findings; (2) federally approved Environmental Impact Statement and program documents; (3) financial assistance awards and work products; (4) semi-annual performance reports; (5) official correspondence; and (6) relevant publications on natural resource management issues in South Carolina.

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

- major accomplishments during the review period;
- status of Reserve staffing and needs;
- facilities development and/or land acquisition efforts;
- status of general administration of the Reserve and management plan revisions;
- status of implementation of the Reserve's research, monitoring, and education programs;
- the manner in which the Reserve coordinates with other governmental and non-governmental organizations and programs in the state and region; and
- the manner in which the Reserve has addressed the recommendations contained in the §312 evaluation findings released in 2002. The ACE Basin Reserve's assessment of how it has responded to each of the recommendations in the 2002 evaluation findings is located in Appendix B.

C. SITE VISIT TO ACE BASIN NATIONAL ESTUARINE RESEARCH RESERVE

Notification of the scheduled evaluation was sent to the South Carolina Department of Natural Resources, relevant environmental agencies, members of South Carolina's congressional delegation, and regional newspapers. In addition, a notice of NOAA's "Intent to Evaluate" was published in the Federal Register on December 23, 2005.

The site visit to the ACE Basin Reserve was conducted from January 30, 2006, through February 3, 2006. The evaluation team consisted of Ms. Chris McCay, Evaluation Team Leader, National Policy and Evaluation Division, OCRM; Ms. Kate Barba, Program Manager, Estuarine Reserves Division, OCRM; and Mr. Mark Del Vecchio, Manager, Delaware National Estuarine Research Reserve.

During the site visit the evaluation team met with ACE Basin Reserve staff, senior staff from the Marine Resources Division and Marine Resources Research Institute, DNR staff, other state agency staff, coastal researchers and academicians, U.S. Fish and Wildlife Service, Sea Grant, local government staff and officials, North Inlet/Winyah Bay (SC) NERR manager, and non-profit organizations. Appendix C lists people and institutions contacted during this review.

As required by the CZMA, NOAA held an advertised public meeting on Tuesday, January 31, 2006, at 6:30 p.m. at the Edisto Interpretive Center, Edisto Beach State Park, 8377 State Cabin Road, Edisto Island, South Carolina. The public meeting gave members of the general public the opportunity to express their opinions about the overall operation and management of the ACE Basin Reserve. Appendix D lists individuals who registered at the meeting. NOAA's responses to written comments submitted during this evaluation are summarized in Appendix E.

The ACE Basin Reserve and MRD staff members were crucial in setting up meetings and arranging logistics for the evaluation site visit. Their support is most gratefully acknowledged.

III. RESERVE PROGRAM DESCRIPTION

NOAA's Office of Ocean and Coastal Resource Management designated the Ashepoo-Combahee-Edisto (ACE) Basin National Estuarine Research Reserve (ACE Basin NERR or the Reserve) in 1992. The lead agency is the South Carolina Department of Natural Resources (DNR), Marine Resources Division (MRD).

The ACE Basin is one of the largest undeveloped estuaries on the East Coast, comprising approximately 350,000 acres. The ACE Basin National Estuarine Research Reserve is located in parts of Charleston, Colleton, and Beaufort counties, South Carolina, about 45 miles south of Charleston, where the Ashepoo, Combahee, and Edisto rivers drain into St. Helena Sound. The Edisto River, with its headwaters beginning below the fall line in South Carolina, has the largest watershed of the three rivers. It is the primary source of materials eroded from upland areas and supplied to the ACE Basin. The smaller Ashepoo and Combahee rivers originate from swamps on the coastal plain and also contribute large amounts of freshwater, as well as dissolved and suspended materials, to St. Helena Sound.

According to the 1992 Final Management Plan (pp. 49-51), the core area of the Reserve consists of a series of remote coastal islands in southeastern Colleton County, which are accessible only by water. These are Ashe, Beet, Boulder, Big, and Warren islands. The total core area (7,291 acres) encompasses approximately 1,550 acres of highland and 5,791 acres of marsh. The buffer area of the Reserve comprises approximately 128,000 acres: about 62,600 acres of wetlands, over 59,400 acres of open waters, and 5,300 acres of upland. Generally the buffer zone includes all state-owned bottoms, open waters, and wetlands, extending up to and including the critical areas as defined in the South Carolina Coastal Management Act. It excludes uplands and wetlands held in private ownership, unless otherwise specified in the Final Management Plan. There have been significant land acquisitions since that time, much of which is in accord with the proposed acquisitions outlined in the 1992 Final Management Plan. However, these acquisitions have not yet been incorporated into the Reserve core area or buffer area through the necessary Management Plan revisions.

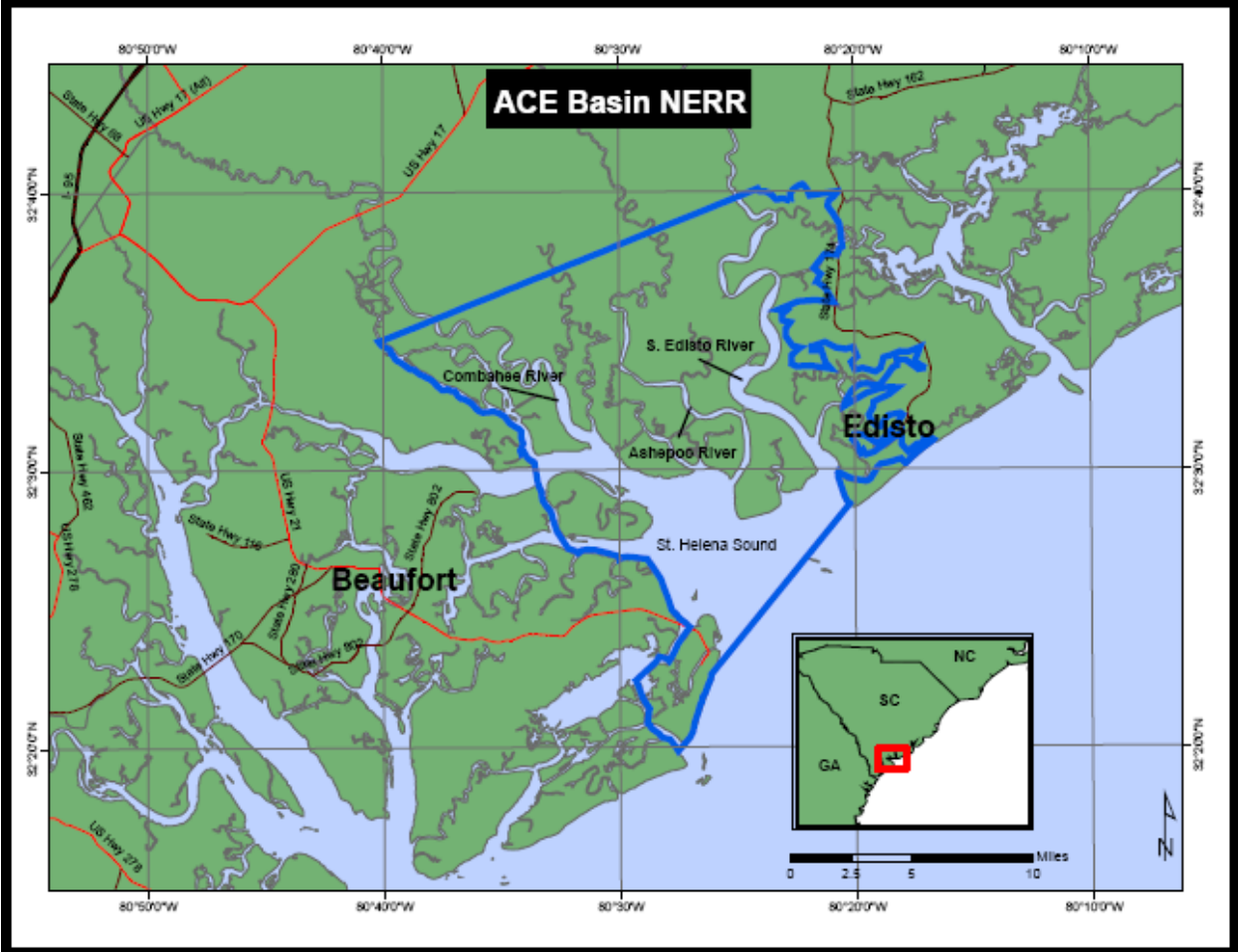
The coastal region of South Carolina is a portion of the Atlantic Coastal Plain province, which is sedimentary in nature and slopes seaward. Upland portions of the mainland are covered principally with pine and pine-hardwood forests; seaward edges of the mainland are bordered by extensive marshes. Habitats within the ACE Basin Reserve include salt marshes, brackish marshes, tidal flats, maritime forests, and pine-mixed hardwoods. Both the core area and buffer zone include open water, salt marsh communities, and uplands.

The ACE Basin is unique for its relatively undeveloped quality, ecological integrity, and the large amount of privately held wilderness areas. However, for all its biological diversity, the ACE Basin is not considered pristine but is rather a working landscape system. Historically this land was important to the economy of its inhabitants from Native Americans to English settlers, who became prosperous in such industries as farming, cotton, rice, timber, and seafood.

Plantation grounds and impoundments are still clearly evident in the area. Many plantations were maintained as hunting preserves as the rice and timber industries declined and much of the population was leaving the areas around the 1900s. The rice fields and logging forests attracted game animals, including migratory waterfowl and deer, and the impoundments were maintained to attract wildlife. This early practice of land conservation still holds today as much of the ACE Basin area is protected by state ownership or protective easements.

Many threatened or endangered species are found in the ACE Basin, including the southern bald eagle, wood stork, loggerhead sea turtle, alligator, and short-nosed sturgeon. Game animals inhabit the upland areas and are actively managed by many landowners. Managed wetlands attract waterfowl to migration patterns and wintering habitat along the Atlantic Flyway.

The Reserve allows uses such as camping, paddle sports, bird watching, hunting, trapping, and commercial and recreational fishing. Most of the core area of the Reserve is tidal marsh and open water, which is open to the public but is accessible only by boat. The nearest and most convenient public boat ramp is on Bennett's Point at the southeastern end of SC Highway 26. Bennett's Point is also where the Reserve's research field station (the Michael McKenzie Field Station) is located. The Edisto Interpretive Center at Edisto Beach State Park is the access point for public groups and serves the area in providing a broader context for the area's natural and cultural resources.



IV. REVIEW FINDINGS, ACCOMPLISHMENTS, AND RECOMMENDATIONS

A. OPERATIONS AND MANAGEMENT

1. Administration and Staffing

The Reserve, its programs and initiatives, and its staff are highly regarded regionally and statewide by its partners and the public. Staff members do an excellent job integrating research and education programs within the Reserve and integrating Reserve activities with a number of partners' efforts within the greater ACE Basin Project. At the time of the previous evaluation, Reserve administration and operation was split between two state agencies. The South Carolina Department of Health and Environmental Control (DHEC), the designated state agency coordinator for the Reserve, administrated the cooperative agreement award through the South Carolina Office of Ocean and Coastal Resource Management. The South Carolina Department of Natural Resources (DNR) carried out implementation of the management plan, and day-to-day operations of the Reserve were conducted by the DNR Marine Resources Division (MRD), located at Fort Johnson, southeast of Charleston. The previous evaluation findings included a recommendation to streamline the grants process by establishing the DNR as the recipient agency for the cooperative agreement awards. Following the January 2002 site visit, the DNR did assume responsibility as the sole lead agency for all administration, operation, and management of the Reserve, including cooperative agreement awards.

Reserve staff members generally work "off-site" at the MRD offices and labs at the Ft. Johnson campus on James Island across the harbor from the City of Charleston. This is also where the MRD's Marine Resources Research Institute is located, and so are the NOAA National Centers for Coastal Ocean Science (NCCOS) Hollings Marine Lab, the NCCOS Center for Coastal Environmental Health and Biomolecular Research, the DOC National Institute of Standards and Technology (NIST) lab, and several academic institutions' labs. Staff members also work at the Edisto Interpretive Center at Edisto Beach State Park primarily for educational programs and at the Bennett's Point field station (now named the Michael McKenzie Field Station) for research and some educational activities.

The Reserve is an excellent fit with DNR and the MRD. The agency provides land management and acquisition support; facilities support, boats, and equipment; and support for purchasing and human resources. As noted in the above paragraph, the Ft. Johnson location offers great opportunities for integration and cooperation within the Division and with other agency partners, and the Reserve and the MRD take advantage of those opportunities. Examples of these efforts and partnerships are discussed throughout these findings under a variety of headings.

The Reserve has a 20-member advisory committee, representing local business, education, science, forestry, fisheries, environmental, tourism, nonprofit conservation, non-governmental organizations, and private landowner communities. The North Inlet-Winyah Bay NERR

manager and a representative of South Carolina's coastal management program (DHEC Office of Ocean and Coastal Resource Management) also serve on the committee. The Ace Basin Reserve manager has revitalized the Advisory Committee, schedules regular meetings, and intends to make greater use of the Committee, particularly as a good partnership and coordinating tool.

The Reserve has a full complement of staff, including a full-time stewardship coordinator, CTP coordinator, and GIS coordinator, although it lacks any administrative support staff. With a staff of 12-15, an administrative/secretarial assistant could be helpful to all the staff, particularly the Reserve manager. The salaries of the manager, research coordinator, and education coordinator are fully state funded (as are several others). At the time of the site visit, the education coordinator position was vacant. However, at the time these findings were issued, the Reserve manager had hired a person for the position effective in early May.

ACCOMPLISHMENT: The assumption of the sole lead agency role by the Department of Natural Resources has been accomplished smoothly. Support for, and the integration of, the Reserve and its activities by and with the DNR and the Marine Resources Division programs remain strong.

PROGRAM SUGGESTION: The Reserve and MRD should investigate the options for hiring or otherwise providing some administrative support for the Reserve.

2. Management Plan

The Reserve currently operates under the management plan developed and approved at the time of site designation in 1992. Although the evaluation findings issued in 1999 contained a Necessary Action requiring completion of management plan revisions, this was not done nor addressed in the 2002 findings. The Reserve has made progress in revising the existing plan, but this must become a high priority and be completed, as required by NERRS regulations at 15 CFR 921.33(c). The revision must include the incorporation of land acquired since the Reserve's designation.

NECESSARY ACTION: The Reserve must complete revisions to its management plan, including the incorporation of land acquired since the Reserve's designation. The final revised plan must be submitted to OCRM by November 30, 2006.

3. Facilities and Infrastructure

Most of the Reserve staff members operate out of the MRD office and lab facilities at the Ft. Johnson campus on James Island near Charleston. Although not actually located within the Reserve, the Ft. Johnson location is extremely advantageous for the Reserve staff. The Marine Resources Research Institute (MRRI), which is a section within the Marine Resources Division, is located here. It is South Carolina's only marine and coastal research facility not directly administered by an academic institution. It provides laboratory facilities as well as large vessels

for research and educational programs and outboard motor boats to a variety of users, including Reserve staff and visiting researchers to the Reserve. During the period of this evaluation, the Reserve purchased a 45-foot catamaran boat with private funding for educational cruises to replace an outdated boat.

In May 2004 the Edisto Interpretive Center located at Edisto Beach State Park in the Reserve was officially opened. This facility was a joint effort by the South Carolina DNR and the South Carolina Department of Parks, Recreation, and Tourism (DPRT). The Center includes staff offices, interpretive exhibit galleries, a classroom, and a conference area. The Center also has a dock, a nature trail system, and public boat access to adjacent waterways. Many of the Reserve's educational programs are offered here. Programs are also offered by DPRT. A strong demand for programs at the Center has continued since its opening.

The Center is an outstanding example of green building design, and the design features are prominently highlighted by signs within the Center and in a printed "Green Points Guide" that is available for visitors to complete a self-guided tour inside and outside the building. The Center received 'Bronze Certification' from the U.S. Green Building Council under the LEED (Leadership in Energy and Environmental Design) Green Building Rating System.[®] The rating system is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. The Center has received a number of design awards, including the 2004 Impact on Learning Award, the 2004 CEFPI National Impact on Design Award, the 2004 DesignShare International Merit Design, and the 2004 South Carolina DNR Stewardship Award.

ACCOMPLISHMENT: The Department of Natural Resources and the Reserve, in partnership with the Department of Parks, Recreation, and Tourism, successfully collaborated on the construction and operation of the Edisto Interpretive Center. In particular, the environmentally friendly design, construction, and operation elements of the Center have been integrated into an educational self-guided tour activity that relates to the environmental health of ACE Basin.

The Michael McKenzie Field Station was completed during the last evaluation period and dedicated during the period covered by this evaluation. It also incorporates many aspects of "green building" design, although it is not officially LEED certified. The field station is a permanent facility in the Reserve at Bennett's Point with docking facilities, wet/dry lab facilities, overnight accommodations for visiting researchers, multi-purpose classroom/community meeting room space, and some Reserve staff office space. The Reserve's meteorological station is also located here.

During the site visit, the team and staff members talked about the increased use of the field station for educational activities but its underutilization for research purposes. Significant federal funding was provided for the construction of the field station and its use as a research facility. Office space exists that was intended to be used by the Reserve manager and research coordinator at least several days during the week, although that does not occur now. However, the field station has much to offer researchers in the field, even though it is not intended to provide the full range of laboratory facilities that are available at the MRRI, for example. The

OCRM is concerned that federal funding was provided for a purpose that is not being met. The MRD and Reserve should commit to increased use of the field station for research, investigate reasons for its under-utilization, and implement marketing, facility modifications, and other strategies accordingly to encourage increased use.

PROGRAM SUGGESTION: The MRD and Reserve should commit to increased use of the field station for research, investigate reasons for its under-utilization, and implement marketing, facility modifications, and other strategies accordingly to encourage increased use.

4. Coordination and Partnerships

The Reserve does an excellent job in coordinating with a wide variety of governmental and non-governmental entities to accomplish both educational and research activities and programs. Many of these coordinated partnership efforts occur through the ACE Basin Project, in which the Reserve and the DNR are active partners. The ACE Basin consists of approximately 350,000 acres, of which the ACE Basin NERR is a part. The ACE Basin Project was launched in 1988 when Ducks Unlimited (DU), The Nature Conservancy (TNC), DNR, the U.S. Fish and Wildlife Service (USFWS), and private landowners formed a coalition known as the ACE Basin Task Force. Westvaco Corporation, the Lowcountry Open Land Trust, and Nemours Wildlife Foundation joined the Task Force in 1998. The mission of the ACE Basin Project is to maintain the natural character of the basin by promoting wise resource management on private lands and protecting strategic tracts through conservation agencies. A major goal of the protection efforts is to ensure that traditional uses such as farming, forestry, recreational and commercial fishing, and hunting continue in the area.

During the period covered by this evaluation, the Reserve worked with DU and TNC to discuss ways to link watershed planning with existing land use planning efforts in the ACE Basin. The Reserve staff also met with ACE Basin Task Force members to discuss federal transportation funding for the ACE Basin Parkway Project. This is an important determinant of regional growth patterns. Linking transportation funding with land use planning has strong local support. The Reserve also worked with USFWS and the DNR's Land, Water and Conservation Division on controlling the spread of *phragmites* in the ACE Basin. Approximately 25 acres along riverbanks and rice fields were sprayed by helicopter with an environmentally safe herbicide. A number of other efforts and activities coordinated with ACE Basin Project members are discussed elsewhere in this document.

The Reserve has coordinated a variety of activities with other state agency and other DNR entities. The operation and programs of the Edisto Interpretive Center are coordinated with the South Carolina Department of Parks, Recreation, and Tourism. The Reserve has partnered with DNR's Geology Office over the past five years on mapping the ACE Basin NERR. The project is now complete. Staff members have continued to work with the Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management on a survey of marsh hammocks in the ACE Basin and on the development and implementation of the state's Coastal and Estuarine Land Conservation Program (CELCP) Plan.

The DNR Marine Resources Division and the Department of Health and Environmental Control began a major collaborative coastal monitoring program in 1999 entitled the *South Carolina Estuarine and Coastal Assessment Program* (SCECAP). The U.S. EPA, USFWS, and NOAA's Hollings Marine Laboratory and Center for Coastal Environmental Health and Biomolecular Research (at the Ft. Johnson campus) are also cooperating in the program. The purpose of SCECAP is to monitor the condition of the state's estuarine habitats and provide periodic reports to both coastal managers and the public. The SCECAP's activities are also discussed in the section of this document dealing with research and monitoring.

The North Inlet-Winyah Bay NERR (north of ACE Basin) is a particularly strong partner with Reserve on a variety of activities, particularly those related to the Coastal Training Program (CTP) and educational programs. Each Reserve serves on the Advisory Committee of the other Reserve. ACE Basin Reserve also has coordinated with the Sapelo Island, Georgia, NERR (south of ACE Basin) on several activities, primarily those related to the CTP.

Sea Grant representatives noted that the two South Carolina Reserves, the state's coastal management program, South Carolina Sea Grant, and NOAA's Coastal Services Center are beginning to meet together to enhance communication and coordination. Sea Grant would like to work with the Reserve and the coastal management program (SC OCRM) on joint programs and the sharing and delivery of more programs in the future. This would provide an opportunity, when appropriate, to present a united agency front to both the public and to legislators. It also provides another opportunity to save staff time, energy, and funding. The evaluation findings for the SC OCRM issued December 14, 2005, recommended that the coastal program develop a strategy to expand information and outreach on programs, practices, issues, and opportunities. The Reserve and Sea Grant have strong educational and outreach components and could be particularly helpful to the SC OCRM.

ACCOMPLISHMENT: The ACE Basin Reserve actively maintains existing, and continually seeks out new, partnerships and project collaboration opportunities. The Reserve has much to offer its partners through its broad range of programs and activities and the expertise of its staff members. The two previous evaluations have noted the strong element of coordination and cooperation with numerous partners, and it is evident that the Reserve places a high priority on and has a strong commitment toward continued collaboration with a broad range of organizations. The coordination and partnership with the North Inlet/Winyah Bay Reserve in educational activities and the Coastal Training Program are particularly noteworthy.

PROGRAM SUGGESTION: The Reserve should seek additional opportunities to collaborate with Sea Grant and the South Carolina Office of Ocean and Coastal Resource Management, particularly in areas of outreach and education.

5. Program Visibility

As is discussed in earlier sections of this document, the ACE Basin Reserve is part of the larger

geographic ACE Basin area and the partnership that comprises the ACE Basin Project. The Reserve has been an active partner since the Project's inception over 15 years ago and is well recognized by those entities involved. However, it does not have a strong, distinct identity as a separate entity from the larger geographic area or from the ACE Basin Project. Tourists and new residents to the area may not realize that the Reserve exists or may not be aware of its mission and activities. This issue of program visibility and identity has been raised in every evaluation since the Reserve was designated. This repetition does not reflect a failure on the part of the Reserve or DNR to address the need. Rather, it is a recognition that this will be an ongoing concern so long as the state, the Reserve, and the many partners involved in the ACE Basin Project continue to be successful at cooperatively integrating their activities in the larger geographic area.

Nevertheless, the Reserve should still actively seek out opportunities and activities to establish its distinct identity. Greater program visibility could not only benefit the Reserve with stronger programmatic and financial support, but other groups and supporters could benefit from the greater connections the Reserve already has in place and can offer locally and nationally.

At the time of the site visit and issuance of these findings, the Reserve did not have a website. The DNR website was revised and updated in September 2005, and at that time the Reserve and MRD leadership agreed the Reserve's web-based information was overdue for an update as well. The existing content was removed and has not yet been replaced with updated material and information. The Reserve also does not have its own unique logo. There is an ACE Basin logo used throughout the wider area by the ACE Basin Project, and occasionally the Reserve will use it with the acronym "NERR" added to it or use the DNR logo. However, now that Reserve facilities are completed and in use, the Reserve presence should be conspicuously recognized, particularly at the Edisto Interpretive Center, where the general public often receives its first and only exposure to the Reserve. The Reserve could also consider other mechanisms to raise the level of public knowledge, some of which have been suggested in earlier evaluations, like a Reserve-specific newsletter (electronic or paper), Reserve brochure, or annual report highlighting accomplishments and activities.

PROGRAM SUGGESTION: The Reserve should continue its efforts to maintain and promote its visibility and identity distinct from the greater ACE Basin geographic area and Project. The Reserve's website should be updated and made available to the public as soon as possible, a Reserve logo or graphical identity should be used throughout its facilities and public information, and other strategies to promote the Reserve's identity and activities should be developed.

B. RESEARCH AND MONITORING

1. Research Activities

The Reserve has a research program of great breadth and depth. Reserve staff members have conducted or collaborated with others on a variety of projects. The Reserve has also hosted

researchers from several academic institutions and graduate students during the period covered by this evaluation. Research conducted by the DNR and the Marine Resources Division appears to be seamlessly integrated and coordinated within the Reserve. The DNR Land, Water, and Conservation Division has conducted an assessment of hydrologic conditions in the tidally restricted Scott Creek and monitored sediment erosion/accretion rates in salt marshes in the Reserve. The MRD has conducted an assessment of algal populations in stormwater ponds on Edisto Beach.

Examples of research within the Reserve or that Reserve staff members have conducted or collaborated on with others include:

- **Electrofishing survey project:** The Reserve began sampling tidal freshwater fish communities in 2001 and continues it to the present. Sampling is conducted monthly in the Combahee and South Edisto rivers by electrofishing. The Reserve hopes to determine both the abundance of fishes and the spatial and temporal distribution of fish species in the tidal freshwater community, and to compare the abundance and diversity of fishes between areas and seasons.
- **Saltwater intrusion project:** In January 2002 the Reserve started monitoring salinity (in addition to certain other parameters) at one station on each of the ACE Basin rivers. Drought conditions in the state prompted the MRD to conduct a salinity survey during September 2002 on the major rivers along the coast, including the ACE Basin rivers. The Reserve and Dr. Clark Alexander at Skidaway Institute in Georgia collaborated on a more intensive survey of saltwater intrusion during September 2002 and again in April 2003.
- **Hyperspectral imagery project:** Through NOAA's Environmental Cooperative Science Center, the Reserve, South Carolina State University, and the University of South Carolina have collaborated on an assessment of the effectiveness of hyperspectral imagery to detect plant health.
- **Morgan Island research:** The Reserve conducted a study to characterize the environmental conditions on the island, including water quality, aquatic fauna communities, and land cover. Researchers from The Citadel monitored saltwater intrusion on the island, and a graduate student from the College of Charleston completed a master's thesis to determine if the continuing presence of a large colony of rhesus monkeys on Morgan Island has had measurable impacts on the vegetation of the island and water quality in surrounding tidal creeks.
- **Graduate research:** Another graduate student from the College of Charleston is examining the effects of the shape and history of marsh hammocks on plant diversity, while a third College of Charleston graduate student evaluated the factors affecting the distribution and density of juvenile horseshoe crabs.
- **Internships:** The Reserve provided opportunities for two minority interns in the summers of 2004 and 2005 to be involved in research involving the establishment and monitoring of SWMP emergent vegetation study sites.

- Graduate Research Fellows (GRFs): Four NERRS GRFs conducted research in the Reserve during the time period covered by this evaluation. These research projects involved: the use of diamond back terrapins as an indicator of chemical pollution in South Carolina estuaries; the identification of gene expression profiles from the American oyster that may be early warning indicators of environmental stress; use of the Reserve system to determine whether northern and southern plants differ in quality as food for herbivores and the examination of the potential impacts of climate change on herbivore feeding preferences and fitness; and the development of a pilot decision-making model for future land use planning and management that combines locals stakeholder preferences, consideration of long-term resource and social viability, and tools for community involvement and stewardship.

One of the noteworthy research activities in which the Reserve cooperates is the South Carolina Estuarine and Coastal Assessment Program (SCECAP). The earlier section of this document entitled “Coordination and Partnerships” describes the partners and purpose of this program. A major goal of the SCECAP is to combine integrated measures of water quality, sediment quality, and biotic condition into an overall assessment of habitat condition at each site sampled and for the entire coastal zone of South Carolina. The program collects multiple measures of water quality, sediment quality, and biological resources at a large number of sites throughout the state’s coastal zone each year. Approximately 60 stations are randomly selected for sampling each year and generally change from year to year. Sampling stations have been included in the ACE Basin Reserve each year. SCECAP has produced and will continue to produce summaries of South Carolina’s coastal condition every two years to evaluate changes over time. The MRD’s and Reserve’s participation in SCECAP provide opportunities for collaborations in new directions. Some of the research conducted at the Reserve involving the distribution and abundance/status and trends of finfish and decapod crustaceans and SWMP monitoring (sites as well as components) complements the sampling of SCECAP and may provide significant information to the state. The SCECAP collaboration also provides opportunities for ties to the Reserve’s stewardship efforts and coastal training program.

ACCOMPLISHMENT: The ACE Basin Reserve has a robust and diversified research program, which encompasses a wide range of research partners and has provided significant opportunities for student and academic researchers, including both NERRS Graduate Research Fellows as well as other students.

2. Monitoring

ACE Basin Reserve research and monitoring activities are inseparable in many instances, so some monitoring activities have been mentioned or discussed in the preceding section.

System-wide Monitoring Program (SWMP) Phase I (abiotic water quality and atmospheric monitoring): The Reserve’s abiotic water quality and atmospheric monitoring phases are well-established. All four water quality and nutrient monitoring stations have been in operation since 2002, and weather monitoring began at Bennett’s Point in 2001. During the period covered by this evaluation, a new 15-foot tower was installed to elevate the weather station sensors to minimize wind sheer; one YSI station and the weather station were connected to a real time data

system; and the ACE Basin staff participated in three YSI beta tests.

SWMP Phase II (biological monitoring): The NERRS is focusing on submerged and emergent aquatic vegetation during the first part of SWMP Phase II. The ACE Basin Reserve participated in the NERRS pilot study to test and evaluate the protocol for monitoring emergent or submerged vegetation. Scott Creek watershed was selected to conduct the study of emergent marshes within salt marshes as part of the Tier 2 efforts (monitoring the vegetative characteristics of selected stands of a vegetative community using fixed ground transects with permanent sampling stations located within the marshes).

Another future biomonitoring effort within Phase II involves a focus on invasive species. The ACE Basin Reserve has already begun those efforts. During this evaluation period, the Reserve initiated an invasive decapod monitoring project (the exotic crabs study) in an effort to establish biological baselines for both native and non-native decapod crab species. Decapod crustaceans were selected as test organisms because they are easy to sample, are currently known to be invading U.S. estuaries, and can capture the interest of the public. In June 2003 the ACE Basin and North Inlet/Winyah Bay Reserves collaborated in presenting an invasive species workshop.

SWMP Phase III (land use and habitat change): The land use and habitat change initiative focuses on tracking and evaluating changes over time in coastal and estuarine habitat as they related to changes in watershed land use practices, using a combination of surveys, remote sensing, and ground truthing. The Reserve began its SWMP land use component in 2002 by focusing efforts on Morgan Island, Scott Creek, and two YSI monitoring stations as test sites to develop a standardized protocol for analyzing data from imagery. The Reserve also participated in a CICEET-funded remote sensing study during this evaluation period.

The development of a common habitat classification scheme is essential to this effort, so a “NERRS Classification Scheme” was devised by NERRS staff. During the time period covered by this evaluation, the ACE Basin Reserve participated in the second pilot study of the proposed scheme to test: the capability of the scheme to classify all cover types; applicability of the land features over the entire geographic extent of the NERRS; its compatibility with existing classification efforts within the NERRS; and the compatibility of classification with remotely-sensed imagery. The habitats on Otter Island, Edisto Beach, Bailey Island, and Grove Plantation in the ACE Basin NERR were categorized using the proposed scheme. A final findings report was submitted in October 2005.

ACCOMPLISHMENT: The Reserve’s system-wide monitoring program is a respected and recognized program within the NERRS and provides leadership at the national level. It is extremely well integrated with the Reserve’s ongoing research activities.

C. EDUCATION AND OUTREACH

1. Education and Outreach

The Reserve’s education programs benefit from a close working relationship with the Marine

Resources Division. Education programs in DNR are partially funded by receipts from the saltwater license plate program, and the MRD has its own education coordinator. At the time of the evaluation site visit, the Reserve's education coordinator had accepted the position of MRD education coordinator. In that capacity, a portion of her time and her staff are dedicated to Reserve education programs, and her intimate knowledge of those should work to the benefit of the Reserve. At the time of the issuance of these findings, a new Reserve education coordinator had been hired.

The partnership between DNR/the Reserve and the Department of Parks, Recreation, and Tourism in operating the Edisto Interpretive Center (EIC) has strengthened since its opening, and educational programs have benefited. Educational programs are offered at both the EIC and the McKenzie Field Station and are targeted to both K-12 students and teachers. During this evaluation period, the Reserve was able to purchase a new 45-foot catamaran boat with private funds for educational cruises to replace an outdated vessel. Reserve staff said this has added considerably to the quality of programs in open water areas of the Reserve.

Other partnerships aimed at bringing educational opportunities within the ACE Basin to students, teachers, and the public include the South Carolina Sea Grant Consortium, SouthEast Center for Ocean Science Education Excellence, Gaylord and Dorothy Donnelley Foundation, Colleton Museum, University of South Carolina-Salkehatchie, Walterboro-Colleton Chamber of Commerce, and the Colleton County School District.

Educational programs and activities geared to both students and teachers during this evaluation period include (but were not limited to):

- Coastal Adventures: This program includes vessel and land-based activities at the EIC and the McKenzie Field Station. Programs were provided for high schools, home schools, and middle schools from across the state. The programs feature a two-hour, hands-on estuarine biology experience.
- Student Environmental Education Day (SEED): About 170 elementary students from the Colleton County school system met at ACE Basin to learn about wildlife and how to keep the environment cleaner. Educators and scientists talked to the students about estuaries, marine animals, alligators, snakes, and non-point source pollution.
- School Backyard Habitats: Students from five middle schools in the low country get hands-on experience with planting and growing a variety of flora for the benefit of indigenous wildlife.
- COASTeam Summer Course: Staff conducted this course for Colleton County teachers, who earned three hours of graduate school credit upon successful completion. This program is a component of a grant awarded to DNR by the Gaylord and Dorothy Donnelley Foundation and concentrated in the ACE Basin region.
- Teachers Environmental Network (TEN): The Reserve continues its strong partnership with the Donnelley Foundation to bring development opportunities to the ACE Basin teaching

community through the TEN. The project fosters interest and encourages teaching and learning about environmental education through seminars and field trips offered throughout the year.

- National Estuaries Day 2004 and EstuaryLive: The Reserve organized and provided a boat tour for the public through parts of the ACE Basin in the morning and conducted a second cruise for educators in the afternoon in partnership with the SouthEast Center for Ocean Science Education Excellence. The Reserve also partnered with the North Inlet/Winyah Bay Reserve to produce an EstuaryLive segment. The ACE Basin segment focused on endangered species found in ACE Basin.

During the site visit, the education staff members talked to the evaluation team about beginning to focus on a particular aspect of research within the Reserve and direct it to the appropriate audience. This sort of focus is precisely what the Coastal Training Program was designed to do and is doing in the Reserve (see discussion below). The evaluation team supports this same sort of emphasis in the Reserve's K-12 and teacher education programs and believes that staff members (both in the research and education programs) have already begun to do this.

ACCOMPLISHMENT: The Reserve has successfully coordinated with the South Carolina Department of Parks, Recreation, and Tourism in offering numerous and varied educational activities at the new Edisto Interpretive Center. It was able to obtain private funding to purchase a new and larger boat to accommodate more students in water-based activities. As with its other programs, the Reserve's educational program has developed strong partnerships with a variety of organizations to extend the depth and breadth of its offerings for student and teacher activities.

2. Coastal Training Program (CTP)

The Reserve's needs assessment, market analysis, marketing plan, and strategic plan were all completed in December 2002. It now has a full-time CTP coordinator, and the program moved from a pre-operational phase to fully operational during spring 2003. The Reserve has offered a strong variety of programs in response to the needs assessment and has been particularly successful in partnering with other entities to reach audiences often numbering between 50-100 participants. An "ACE Basin Landowner Event" was cosponsored with the ACE Basin Task Force addressing land protection and the values of conservation easements and drew approximately 100 people. A workshop dealing with 'context-sensitive' solutions was held in coordination with the South Carolina Department of Transportation and the Federal Highway Administration to apply the information to three of the state's most controversial highway projects. More than 50 professionals attended. The Reserve, South Carolina Prescribed Fire Council and the National Wild Turkey Federation co-sponsored a workshop on prescribed fire.

The Reserve offered a workshop in cooperation with the Sapelo Island (GA) Reserve on marsh dieback. The ACE Basin and North Inlet/Winyah Bay reserves (in northern South Carolina) have coordinated several times in presenting "regional" seminars and programs, including ones on coastal hazards, isolated freshwater wetlands, and invasive species. At a meeting during the evaluation site visit, the North Inlet/Winyah Bay and ACE Basin managers talked about future

plans to conduct a statewide needs assessment, market analysis, etc., rather than do separate Reserve documents. Because there is no Reserve in the central portion of the state's coast, Sea Grant has compiled contact information from there for the two Reserves to use.

In response to the needs assessment, the Reserve developed a "Master Naturalist" training program in collaboration with Clemson University and the Lowcountry Institute. The program is designed to train citizens as volunteer naturalists with a focus on coastal resources. Many of the volunteers at the Edisto Interpretive Center have participated in the program, and other graduates of the course have been recruited as volunteers at the Center.

ACCOMPLISHMENT: The Reserve's Coastal Training Program has a full-time coordinator and is now fully operational. It has been very effective in partnering with organizations, including other Reserves, to present programs of mutual need and interest, thus sharing resources and avoiding duplication.

D. STEWARDSHIP AND RESOURCE MANAGEMENT

1. Land Acquisition and Habitat Protection

Almost half of the acreage within the larger ACE Basin Project area, which includes the Reserve, is in governmental or non-governmental organization ownership or under conservation easements. Over 50,000 acres are available for public use in two state wildlife management areas, two state parks, the Hollings ACE Basin National Wildlife Refuge, and the Reserve. Over 70,000 acres are protected through conservation easements, and the balance of the areas is protected through other measures. The DNR, the Reserve, and the many partners within the ACE Basin spent considerable time, effort, and funding during this evaluation period to reach this point. In 2002, phases one and two of the Morgan Island acquisition plan were completed, and the Reserve will include marsh acreage surrounding Morgan Island. The Reserve also worked with The Nature (TNC) Conservancy to acquire North Williman, Pine, and Buzzard islands. These efforts will increase the Reserve core area by over 9,000 acres when the boundary is modified in conjunction with a revised management plan.

Reserve staff also worked with several partners to secure conservation easements for acreage within the Reserve and within the greater ACE Basin area, which also provides protection for Reserve properties. The Reserve and TNC secured an easement on 110 acres of waterfront property (Wimbee Creek Farm) near Dale and which is proposed for inclusion within reserve boundaries. TNC, Colleton County Council, and the Reserve obtained a conservation easement on 370 acres of bottomland hardwood forest within the city limits of Walterboro. The Lowcountry Open Land Trust and Reserve staff collaborated in obtaining an easement on Prospect Hill farm, a 226-acre tract in Colleton County, which now protects remnants of an old rice field with bottomland hardwoods near areas where extensive commercial timber harvesting occurs. In cooperation with Ducks Unlimited, conservation easements are now in place for Dawhoo Farms (716 acres) and Rainey Acres Farms (240 acres) in Colleton County and for the Malphrus Tract (930 acres of Combahee River wetlands and uplands).

ACCOMPLISHMENT: The Reserve and numerous partners have accomplished acquisition of fee-simple purchase or conservation easement of almost half the acreage within the greater ACE Basin. During the period covered by this evaluation, the Reserve acquired over 9,000 acres, and the State of South Carolina now owns outright the vast majority of the core area defined in the original (1992) management plan. The acquired acreage will be proposed for inclusion within the Reserve boundary as part of the management plan revision.

2. Stewardship Activities

Now that most of the core area identified for acquisition has been purchased and the buffer area has been significantly protected through purchase or easement, the Reserve staff wants to direct more of its stewardship activities away from land acquisition toward serving as the link among research, education, and resource management. They indicated to the evaluation team that, with so many new people moving to the area, there is a strong need to create awareness about the ACE Basin and that a sense of ownership needs to be developed and cultivated. Along with that is the need to plan for increased visitor use. One of the ideas they discussed with the team is to develop an inventory and information about access to the islands within the Reserve. Getting people out into the ACE Basin is key to developing an appreciation of the resources but is also problematic in terms of appropriate access locations and impacts to Reserve resources.

Nevertheless, the Reserve has conducted numerous stewardship and resource management activities during this evaluation period that do link research and education in an effort to engender a sense of pride and responsibility in the resources of the ACE Basin. The Reserve initiated and continues to operate the Monofilament Recycling Program. Collection bins are located at heavily used fishing piers, boat landings and marinas in the ACE Basin. Signs, brochures, and other promotional methods encourage fishermen and outdoor enthusiasts to recycle discarded monofilament line. The Reserve staff is working with local community and school groups to monitor the bins, collect data, and promote the program.

Staff worked with a local marine contractor in constructing an inshore artificial fishing reef near the mouth of St. Helena Sound, easily reached from Bennett's Point. The 300-yard diameter reef consists of 250 specially designed concrete modules, each two feet in height and coated with oyster shell to stimulate the development of a natural oyster reef. A marker bouy sits in the middle of the reef, which is about 25 feet deep. The community-based project is a result of recommendations made during a Colleton County Council meeting held at the McKenzie Field Station in 2005. Staff members also advised local landowners on integrated wetlands management projects. One significant project created productive habitat for waterfowl and wading birds from a 1,500-acre former cattle pasture. Reserve staff and volunteers continue to protect sea turtles, nests, and hatchlings in the Reserve. Nests are located, screened to protect them from raccoon predation, and inventoried after hatching to determine hatching success.

A partnership among the Reserve, the U.S. Fish and Wildlife Service, and DNR's Land, Water, and Conservation Division aerial-sprayed approximately 25 acres along riverbanks and rice

fields to control the spread of phragmites in the ACE Basin. Other partnerships have resulted in stewardship projects as well. For the last five years the Reserve and DNR's Geology Office have been mapping the Reserve. The project has been completed and a geological map is now available students and others interested in the geologic formation of the ACE Basin. In cooperation with the North Inlet/Winyah Bay Reserve, the two staffs sponsored a workshop on land conservation at the NI/WB NERR. During this evaluation period, staff also met with the Edisto Island community to discuss best management practices for development that addresses the quantity and quality of nonpoint runoff. These practices could be implemented at the site or parcel level and could help protect the Basin's natural resources while allowing Edisto Island to plan for expected population growth on the Island.

ACCOMPLISHMENT: The staff has begun a transition to move the stewardship program beyond land acquisition toward activities that develop an awareness of and appreciation for the ACE Basin and give people a sense of personal responsibility in actions that make a difference in protection and conservation. The Reserve has conducted a variety of stewardship activities during this evaluation period, in partnership with various federal and state agencies and local groups, to integrate research and education.

V. CONCLUSION

For the reasons stated herein, I find that the State of South Carolina is adhering to the programmatic requirements of the Coastal Zone Management Act and the regulations of the National Estuarine Research Reserve System in the operation of its approved Ashepoo-Combahee-Edisto (ACE) Basin National Estuarine Research Reserve.

The ACE Basin Reserve has made notable progress in: administration and staffing; facilities and infrastructure; coordination and partnerships; research and monitoring; education, outreach, and the Coastal Training Program; and land acquisition, protection, and other stewardship activities.

These evaluation findings also contain five (5) recommendations. The recommendations are in the form of one (1) Necessary Action and four (4) Program Suggestions. The state must address the Necessary Action by the date indicated. The Program Suggestions should be addressed before the next regularly-scheduled program evaluation, but they are not mandatory at this time. Program Suggestions that must be repeated in subsequent evaluations may be elevated to Necessary Actions. Summary tables of program accomplishments and recommendations are provided in Section VI.

This is a programmatic evaluation of the ACE Basin National Estuarine Research Reserve that may have implications regarding the state's financial assistance awards. However, it does not make any judgment about or replace any financial audits.

/signed/ David M. Kennedy

7/13/06

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

Date

VI. APPENDICES

Appendix A. Summary of Accomplishments and Recommendations

The evaluation team documented a number of the DNR Division of Marine Resources' and Reserve's accomplishments during the review period. These include:

Issue Area	Accomplishment
Administration and Staffing	The assumption of the sole lead agency role by the Department of Natural Resources has been accomplished smoothly. Support for, and the integration of, the Reserve and its activities by and with the DNR and the Marine Resources Division programs remain strong.
Facilities and Infrastructure	The Department of Natural Resources and the Reserve, in partnership with the Department of Parks, Recreation, and Tourism, successfully collaborated on the construction and operation of the Edisto Interpretive Center. In particular, the environmentally friendly design, construction, and operation elements of the Center have been integrated into an educational self-guided tour activity that relates to the environmental health of ACE Basin.
Coordination and Partnerships	The ACE Basin Reserve actively maintains existing, and continually seeks out new, partnerships and project collaboration opportunities. The Reserve has much to offer its partners through its broad range of programs and activities and the expertise of its staff members. The two previous evaluations have noted the strong element of coordination and cooperation with numerous partners, and it is evident that the Reserve places a high priority on and has a strong commitment toward continued collaboration with a broad range of organizations. The coordination and partnership with the North Inlet/Winyah Bay Reserve in educational activities and the Coastal Training Program are particularly noteworthy.
Research Activities	The ACE Basin Reserve has a robust and diversified research program, which encompasses a wide range of research partners and has provided significant opportunities for student and academic researchers, including both NERRS Graduate Research Fellows as well as other students.

Monitoring	<p>The Reserve’s system-wide monitoring program is a respected and recognized program within the NERRS and provides leadership at the national level. It is extremely well integrated with the Reserve’s ongoing research activities.</p>
Education and Outreach	<p>The Reserve has successfully coordinated with the South Carolina Department of Parks, Recreation, and Tourism in offering numerous and varied educational activities at the new Edisto Interpretive Center. It was able to obtain private funding to purchase a new and larger boat to accommodate more students in water-based activities. As with its other programs, the Reserve’s educational program has developed strong partnerships with a variety of organizations to extend the depth and breadth of its offerings for student and teacher activities.</p>
Coastal Training Program	<p>The Reserve’s Coastal Training Program has a full-time coordinator and is now fully operational. It has been very effective in partnering with organizations, including other Reserves, to present programs of mutual need and interest, thus sharing resources and avoiding duplication.</p>
Land Acquisition and Habitat Protection	<p>The Reserve and numerous partners have accomplished acquisition of fee-simple purchase or conservation easement of almost half the acreage within the greater ACE Basin. During the period covered by this evaluation, the Reserve acquired over 9,000 acres, and the State of South Carolina now owns outright the vast majority of the core area defined in the original (1992) management plan. The acquired acreage will be proposed for inclusion within the Reserve boundary as part of the management plan revision.</p>
Stewardship Activities	<p>The staff has begun a transition to move the stewardship program beyond land acquisition toward activities that develop an awareness of and appreciation for the ACE Basin and give people a sense of personal responsibility in actions that make a difference in protection and conservation. The Reserve has conducted a variety of stewardship activities during this evaluation period, in partnership with various federal and state agencies and local groups, to integrate research and education.</p>

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

Issue Area	Recommendation
Administration and Staffing	PROGRAM SUGGESTION: The Reserve and MRD should investigate the options for hiring or otherwise providing some administrative support for the Reserve.
Management Plan	NECESSARY ACTION: The Reserve must complete revisions to its management plan, including the incorporation of land acquired since the Reserve's designation. The final revised plan must be submitted to OCRM by November 30, 2006.
Facilities and Infrastructure	PROGRAM SUGGESTION: The Reserve should commit to increased use of the field station for research, investigate reasons for its under-utilization, and implement marketing, facility modifications, and other strategies accordingly to encourage increased use.
Coordination and Partnerships	PROGRAM SUGGESTION: The Reserve should seek additional opportunities to collaborate with Sea Grant and the South Carolina Office of Ocean and Coastal Resource Management, particularly in areas of outreach and education.
Program Visibility	PROGRAM SUGGESTION: The Reserve should continue its efforts to maintain and promote its visibility and identity distinct from the greater ACE Basin geographic area and Project. The Reserve's website should be updated and made available to the public as soon as possible, a Reserve logo or graphical identity should be used throughout its facilities and public information, and other strategies to promote the Reserve's identity and activities should be developed.

Appendix B. Response to Previous (2002) Evaluation Findings

Program Suggestion: The Reserve should continue outreach and education to increase the identity of the Reserve as a distinct entity within the ACE Basin. It is recommended that the Reserve program focus on emphasizing its distinct identity among these programs and partners, particularly through the new Edisto Interpretive Center.

Response: The Reserve expanded outreach and education activities during the review period. The Coastal Discovery Programs, usually only offered from the McKenzie Center, were also conducted from the Edisto Interpretive Center in 2005; in 2006 programs will be offered in Beaufort. In 2005 twenty-one separate programs were offered at the Edisto Interpretive Center reaching a diverse audience of over ten thousand. Programs offered for teachers and students through relationships with the Donnelly Foundation and others have been especially productive in Colleton County.

The Reserve has remained vigorous due largely to its many partnerships and its programmatic location within SCDNR. These relationships have allowed the Reserve to achieve significantly more than would have otherwise been possible. Partnerships with the Donnelly Foundation, The Nature Conservancy, our sister Reserves, and many others have substantially increased our ability to conduct the work of the Reserve. Our location within DNR confers many advantages including access to equipment, facilities, and expertise that would otherwise be unavailable. As our programs mature we will continue to define our identity with full consideration of the needs of our partners.

Program Suggestion: SC DNR should consider development of a joint operations plan to complement the existing MOU between SC PRT and SC DNR for the Edisto Interpretive Center.

Response: The relationship between the Reserve and PRT staff has continued to strengthen. Jeff Atkins, the park superintendent for much of the period, and Ray Stevens, his supervisor, have been particularly supportive of Reserve Programs by providing staff dedicated to delivering interpretive programs. We have also worked closely on numerous project of mutual concern. In turn, the Reserve has increased investment in both programs and infrastructure at the Center. The Reserve now provides additional support specifically for interpretive education at the center. In addition, the Reserve has supplemented the educational cruise schedule in the ACE Basin thereby allowing a portion of the cruises to be allocated to the Center. To foster a better understanding of the NERR system PRT has agreed to send staff member to attend the annual NERRS meeting. The original MOU has been updated since the last review.

Program Suggestion: The Reserve should review options in land acquisition and expand the Reserve boundaries as appropriate, and in accordance with NOAA regulations.

Response: Staff has considered options for boundary expansion. Discussions have focused on expansion of boundaries in a noncontiguous manner to include government owned properties and

protected private properties where the owners welcome expansion. Significant concerns exist regarding the inclusion of lands vulnerable to development and impact this might have on the identity of the larger ACE Basin project. No formal plan for expansion has been developed.

Program Suggestion: The State is encouraged to take the necessary steps to streamline the grants process by establishing SC DNR as the recipient agency for the NOAA NERRS awards.

Response: The grant process has been streamlined. SCDNR now receives the NERR award directly from NOAA.

Appendix C. Persons and Institutions Contacted

U.S. Senators

Honorable Jim DeMint
Honorable Lindsey Graham

U.S. Representatives

Honorable Henry Brown
Honorable James Clyburn
Honorable Joe Wilson

South Carolina Department of Natural Resources

Robert Boyles, Jr., Deputy Director, Marine Resources Division (MRD)
Linda Renshaw, Office of Public Affairs, MRD
Denise Chantal Rice, Marine Operations, MRD
Bob Van Dolah, Director, Marine Resources Research Institute, MRD
Charles Wenner, Marine Resources Research Institute, MRD
David Whitaker, Director, Office of Fisheries Management, MRD
Elizabeth Vernon, Education Coordinator, MRD
Foster Folsom, Facilities Engineer, MRD
Dean Harigal, Manager, Donnelley Wildlife Management Area

ACE Basin National Estuarine Research Reserve

Phil Maier, Reserve Manager
Elizabeth Wenner, Research Coordinator
Charlie Moore, Stewardship Coordinator
Rebekah Walker, CTP Coordinator
Al Segars
Saundra Upchurch
Amy Dukes
Julie Dingle
Charlie Zemp
Phil Weinbach

Other Organizations and Representatives

Susan Spell, South Carolina Department of Parks, Recreation, and Tourism
Elaine Freeman, South Carolina Department of Parks, Recreation, and Tourism
Mark Madden, Charleston County Park and Recreation Commission
Shawn Halifax, Charleston County Park and Recreation Commission
Mike McKenzie, former ACE Basin Reserve Manager
Jane Greise, U.S. Fish and Wildlife Service, Hollings ACE Basin National Wildlife Refuge
Manager
Joe Hamilton, The Nature Conservancy
Mark Robertson, The Nature Conservancy
Rick DeVoe, Executive Director, South Carolina Sea Grant Consortium
Dan Hitchcock South Carolina Sea Grant at Clemson
Wendy Allen, North Inlet/Winyah Bay National Estuarine Research Reserve
Whit McMillan, South Carolina Aquarium
Dinos Liollo, President, Liollo Architecture

Appendix D. Persons Attending the Public Meeting

The public meeting was held on Tuesday, January 31, 2006, at 6:30 p.m. at the Edisto Interpretive Center, Edisto Beach State Park, 8377 State Cabin Road, Edisto Island, South Carolina.

No members of the public attended the public meeting.

Appendix E. NOAA's Response to Written Comments

No written comments were received regarding the administration or management of the ACE Basin National Estuarine Research Reserve.