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U.S. Fish and Wildlife Service
National Coastal Wetlands Conservation
Grant Program

KITTY HAWK WOODS
MARITIME FOREST ACQUISITION

Submitted by:

North Carolina Department of Environment, Health and Natural Resources

Division of Coastal Management

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PROJECT STATEMENT

Introduction

In 1989, the N.C. Coastal Resources Commission (CRC) became concerned over the gradual loss of the few remaining stands of undisturbed maritime forest on the coast. The CRC created a Maritime Forest Working Group to study various options for the protection of our remaining maritime forest, and to prioritize the most important areas for protection. The CRC concluded that land acquisition for conservation purposes is the most effective method of preserving the natural functions and values of a maritime forest ecosystem. The CRC recommended that the few remaining high quality tracts of maritime forest be acquired and managed for conservation purposes. Kitty Hawk Woods, Nags Head Woods, Buxton Woods, and Bald Head Woods were identified as the top four areas for acquisition. This recommendation was based on natural area values such as size, rare species, and ecological uniqueness.

Since that time, the Division of Coastal Management has played a lead role in the public acquisition of approximately 800 acres of Buxton Woods, 175 acres of Bald Head Woods, and 462 acres of Kitty Hawk Woods. These efforts to preserve maritime forests would not have been possible without the financial and technical support of the U.S. Fish and Wildlife Service.

Need

Kitty Hawk Woods is one of the largest (ca. 1,900 acres) maritime forests on the Outer Banks and is being considered as an addition to the N.C. Coastal Reserve system. This project is unique because it supports two globally-imperilled ecosystems, the Maritime Deciduous Forest and the Maritime Swamp Forest. There is an extensive maritime forest occupying a relict beach ridge and swale system. The ridges are comprised of Maritime Deciduous Forest, which is dominated by Quercus falcata (Spanish Oak), Quercus nigra (Water Oak), Quercus phellos (Willow Oak), and Fagus grandifolia (Beech). Also present in the canopy are Carya glabra (Pignut Hickory), Nyssa sylvatica (Black Gum), and Pinus taeda (Loblolly Pine). These species are represented mostly by scattered, mature individuals. This is especially true of Pinus taeda. The swales support Maritime Swamp Forest, which is dominated by Acer rubrum (Red Maple), Liquidambar styraciflua (Sweet Gum), and Nyssa sylvatica. Found in the understory are abundant Cornus florida (Flowering Dogwood), Persea borbonia (Red Bay), Ostrya virginiana (Hornbeam), Sassafras albidum (Sassafras), and Carpinus caroliniana (Ironwood). Both community types are extremely rare at the global level. According to the N.C. Natural Heritage Program, Kitty Hawk Woods and Nags Head Woods are the only extensive occurrences of Maritime Deciduous Forest in North Carolina. Also, Kitty Hawk Woods contains the most diverse and extensive examples of both the Maritime Deciduous Forest and Maritime Swamp Forest, making it of extreme ecological importance. The maritime forest

at this site is unique from a plant diversity aspect because of its placement in the landscape. It is located at the ecotone where the traditional species found in northern maritime forests overlap with those found in southern maritime forests.

Because of the habitat diversity, mature forest and the large extent of unfragmented habitat present at Kitty Hawk Woods, the site supports a high diversity and overall population of summer, winter and permanent resident birds. Based on published literature of similar nearby habitats, the site is also likely to support a high density and diversity of reptiles and amphibians which depend on the swale and temporary pond wetlands for foraging and/or reproduction. During periods of inundation, the palustrine forested wetlands may be used by centrarchids and certain fish species for feeding, cover and/or spawning. These wetlands may also perform important water quality functions, such as pollution/nutrient removal and sediment/flood retention.

The Kitty Hawk Woods site is included in the National Wetlands Priority Conservation Plan developed pursuant to the Emergency Wetlands Resources Act of 1986. Additionally, the National Estuarine Program's (established under the Clean Water Act) Albemarle-Pamlico Estuarine Study Comprehensive Conservation and Management Plan calls for the public acquisition or conservation easements for high priority sites. Kitty Hawk Woods is one of 13 areas identified as supporting the region's best examples of wetlands.

Kitty Hawk Woods contains two globally rare natural communities and is located in a natural area that is identified in the N.C. Natural Heritage Program's protection plan as a natural area of National Significance. The Natural Heritage Program has given Kitty Hawk Woods the following rankings, the criteria of which was developed by The Nature Conservancy:

- G1 - Critically imperiled globally because of extreme rarity or otherwise very vulnerable throughout its range.
- S1 - Critically imperiled in the state because of extreme rarity or otherwise very vulnerable throughout its range.
- E1 - Outstanding significance, generally the "last of the least" type; the only known or best occurrence of a G1 community or species; or an outstanding concentration of high ranked occurrences.

According to The Nature Conservancy, a G1 "critically imperiled globally" ranking, which applies to both community types, indicates that the area is known from five or fewer localities worldwide.

Hudsonia tomentosa (Woolly Beach Heather), a plant species which is significantly rare in North Carolina, is also known to occur in Kitty Hawk Woods. Peregrine Falcons use Kitty Hawk Woods as a stop-over during their spring and fall migrations and, while not documented

for Kitty Hawk Woods specifically, Bald Eagles have been known to nest in similar habitat on Colington Island located three miles to the south.

Significant development is occurring on the surrounding upland areas of Kitty Hawk Woods and thus, imminent protection is sorely needed. A subdivision has already been approved for one of the tracts (Tract B) that is proposed for protection under this acquisition proposal.

Objective

The State of North Carolina was granted a conservation easement to a 462-acre tract of Kitty Hawk Woods as a condition of a state 401 water quality certification and the division's consistency determination for a U.S. Army Corps of Engineers permit. This land was later donated to the Town of Kitty Hawk. While the Town of Kitty Hawk holds title to the land, the 462-acre tract has since been dedicated as a state nature preserve with the intention of managing the property for research, education, and to provide habitat for rare plants and animals. The Town of Kitty Hawk also holds a conservation easement on an additional 125 acres of Kitty Hawk Woods that is separate from the nature preserve.

The objective of this proposal is to provide protection, through public acquisition and long-term conservation management, to the large undisturbed areas of Kitty Hawk Woods which are adjacent to or in the immediate vicinity of the state nature preserve. Land acquisition for conservation purposes is the most effective method of preserving the natural functions and values of a maritime forest ecosystem, as well as protection for coastal marshes, freshwater wetland swales and associated wildlife. Development of upland areas of Kitty Hawk Woods poses a serious threat to the ecological integrity of the two globally rare natural communities, making immediate protection of this area essential. The acquisition of large tracts of Kitty Hawk Woods was also a recommendation of N.C. Coastal Resources Commission to protect the few remaining high quality tracts of maritime forest left in North Carolina.

The Resolution Trust Corporation controls large parcels of land in Kitty Hawk Woods and is making various tracts available for purchase at less than fair market value for conservation purposes. In light of this unique opportunity, the Division of Coastal Management is working with The Nature Conservancy to acquire these large parcels. The Division has received a \$500,000 grant from the North Carolina Natural Heritage Trust Fund to purchase a 144-acre tract (Tract A) due west of state nature preserve. A 110-acre tract (Tract B) of Kitty Hawk Woods along Currituck Sound is also targeted for state acquisition. A subdivision has been approved for the 110-acre soundfront property, but the controlling interests have agreed to postpone the development to allow for acquisition of the property by the state or a conservation group.

Expected Results or Benefits

Funding of this grant proposal for Kitty Hawk Woods acquisition will:

- Provide for the long-term conservation management of one of the few remaining large, undisturbed maritime forests on the barrier islands of North Carolina.
- Protect an additional 254 acres (approx. 60% upland/40% wetland) of undisturbed maritime forest which will compliment the state's effort to protect other portions of Kitty Hawk Woods in addition to the 460-acre state nature preserve.
- Prevent the degradation of coastal marshes and freshwater wetland swales and loss of wildlife habitat.
- Alleviate the effects of nonpoint source pollution on adjacent state-owned coastal marshes by preserving land which is approved for subdivision development.
- Help protect important estuarine wetlands and waters that in the broad context, can be expected to benefit anadromous and estuarine fishes.
- Provide research and educational opportunities in the one of the most diverse examples of a maritime forest ecosystem through incorporation of the site in the North Carolina Coastal Reserve system.

Approach

Acquired sections of Kitty Hawk Woods will be preserved and managed in perpetuity by the Department of Environment, Health and Natural Resources in cooperation with the Town of Kitty Hawk and The Nature Conservancy. The Division of Coastal Management will include Kitty Hawk Woods as a new component of the N.C. Coastal Reserve system. The Coastal Reserve protects unique natural areas primarily for research, education, and compatible uses. A management plan will be prepared in accordance with federal guidelines (U.S. Dept. of Commerce/NOAA 15 CFR Part 921.33 c). The Division also has statutes (G.S. 113A-129.1-.3) and administrative rules (15A NCAC 70) pertaining to the management of the Coastal Reserve.

Location

Kitty Hawk Woods is located in the western part of the Town of Kitty Hawk in Dare County North Carolina (Figure 1). The area is delineated to the north and east by US 158 Bypass, to the west by Currituck Sound, to the south by Kitty Hawk Road (Figure 2). This proposal calls for the acquisition of a 110-acre tract (Tract B) along Currituck Sound (Figure 3), and the state's matching funds will be used to acquire a 144-acre tract (Tract A, Figure 3).

Estimated Cost

The State of North Carolina requests \$1,000,000 in funds from the National Coastal Wetland Conservation Grant Program for the acquisition of the 110-acre parcel (Tract B) of maritime forest in Kitty Hawk Woods along Currituck Sound (Figure 3). The required non-federal match will come in the form of a \$500,000 grant to the Division of Coastal Management from the North Carolina Natural Heritage Trust Fund for acquisition of a 144-acre tract (Tract A) in Kitty Hawk Woods (Figure 3). Note that this match substantially exceeds what is required as North Carolina is eligible for 75% federal match.

Relationship to other projects

The North Carolina Coastal Resources Commission recommended that the few remaining high quality tracts of maritime forest be acquired and managed for conservation purposes. Kitty Hawk Woods, Nags Head Woods, Buxton Woods, and Bald Head Woods, were identified as the top four areas for acquisition. This recommendation was based on an assessment of natural area values such as size, rare species, and ecological uniqueness. To date, the Division of Coastal Management has spent \$9,800,000 in state and federal funds for the acquisition of 975 acres of maritime forest. Those funds include a 1992 award of \$3,975,000 from the National Coastal Wetland Conservation Grant Program in 1992 for acquisition of maritime forest on Bald Head Island. Phase I of this project (120 acres) was completed in April 1993 and Phase II (55 acres) will be completed by September 1994. This new grant proposal for Kitty Hawk Woods is essential to further the ongoing state effort to protect maritime forests and unique coastal barrier island ecosystems.

Public Involvement

The six sites that make up the Coastal Reserve system, four of which are also part of the North Carolina National Estuarine Research Reserve Program, are managed by the Department of Environment, Health and Natural Resources, for research, education and traditional compatible uses. These sites, Currituck Banks (Currituck County), Buxton Woods (Dare County), Rachel Carson (Carteret County), Permuda Island (Onslow County), Masonboro Island (New Hanover County), and Zeke's Island (New Hanover/Brunswick County) comprise more than 12,000 acres (Figure 3). Bald Head Woods (Brunswick County) and Kitty Hawk Woods (Dare County) are candidates for addition to the system in 1995. Upon inclusion in the Reserve system, a management plan will be developed for Kitty Hawk Woods and a local advisory committee, comprised of representatives from state and local

governments, conservation groups, traditional users, adjacent landowners and other private citizens, is established for local participation in management issues. The department is currently working with The Nature Conservancy and the Town of Kitty Hawk in the development of a management plan for all the publicly-owned sections of Kitty Hawk Woods (Tract A, Tract B, 460-acre State Nature Preserve, as well as the conservation easement on 125-acres held by the Town). A Kitty Hawk Woods Conservation Area Working Group has been formed consisting of the Town Mayor, two planning board members, town manager, town planner, town attorney, the assistant director of coastal management and the coastal reserve director.

POINTS OF NOTE
CRITERIA FOR EVALUATING
NATIONAL COASTAL WETLANDS CONSERVATION PROJECTS

1. The Coastal Wetlands Planning, Protection and Restoration Act provides grants to any coastal state to carry out coastal wetlands conservation projects. In accordance with the law, priority should be given to coastal wetlands conservation projects that: (1) are consistent with the National Wetlands Priority Conservation Plan; (2) are in states with established dedicated funding programs to acquire coastal wetlands and natural areas; and (3) are coastal wetland conservation projects in maritime forests on coastal barrier islands. This proposal meets all three of these priority criteria.
2. The Kitty Hawk Woods proposal contains maritime swamp forest (Palustrine) as well as estuarine wetlands, both of which are declining wetland types. The 110 acres to be acquired are approximately 40% wetlands. Kitty Hawk Woods is included on the National Wetlands Priority Conservation Plan developed pursuant to the Emergency Wetlands Resources Act of 1986. This plan identifies wetlands needing protection based on the site's ecological functions and values, the scarcity of the resource and threats to the natural resource. The plan was developed largely to help prioritize federal and state acquisitions. As a portion of the site is planned for development, this proposal would help attain the "no net loss" wetlands concept.
3. According to the North Carolina Natural Heritage Program, Kitty Hawk Woods contains two globally rare communities, the Maritime Swamp Forest and the Maritime Deciduous Forest. Hudsonia tomentosa (woolly beach heather), which is significantly rare in North Carolina, also occurs in Kitty Hawk Woods. Kitty Hawk Woods is also a stop-over for Peregrine Falcons on their spring and fall migrations and, although not documented for the Kitty Hawk Woods tract specifically, Bald Eagles have been known to nest on Colington Island located three miles to the south.
4. The Kitty Hawk Woods proposal is part of a maritime forest protection strategy developed by the North Carolina Coastal Resources Commission. The CRC recommended in 1990 that the few remaining high quality tracts of maritime forest be acquired and managed for conservation purposes. Kitty Hawk Woods, Nags Head Woods, Buxton Woods, and Bald Head Woods were identified as the top four areas for acquisition. This recommendation was based on natural area values such as size, rare species, and ecological uniqueness.
5. The proposal will help protect the important estuarine wetlands and waters of Currituck Sound that in the broad context, can be expected to benefit anadromous and estuarine fishes.
6. The Kitty Hawk Woods proposal will prevent the adverse effects of nonpoint source pollution on adjacent state-owned coastal marshes from roadways, fertilizers, pesticides, and septic tank impacts by preserving land which is otherwise approved for subdivision

development.

7. This project proposal reflects a strong partnership effort involving various Federal Agencies, the State, local government and a private conservation group. Financial support from the partnerships is shown on the budget table and as follows: State of North Carolina - \$500,000 for the purchase of 144 acres of maritime forest (Tract A); Town of Kitty Hawk - \$26,000 for title to 462 acres of maritime forest valued at approximately \$750,000; as well as a conservation easement on an additional 125 acres of maritime forest; North Carolina Chapter of The Nature Conservancy - \$25,000 for inkind services to aid in negotiations with the Resolution Trust Corporation on this project and in the development of a management plan for Kitty Hawk Woods

Upon acquisition, the Kitty Hawk Woods Coastal Reserve will be managed with funds received from the National Oceanic and Atmospheric Administration, the North Carolina Department of Environment, Health and Natural Resources, and the Town of Kitty Hawk. A full-time staff of three persons manages the six current sites of the Coastal Reserve with a combination of state and federal operating funds. Those funds total \$125,000 for salary, fringe, office lease and operations for managing 13,000 acres of land located from Currituck County to Brunswick County. The Reserve Coordinator and Research Specialist are located in Wilmington and are affiliated with the University of North Carolina at Wilmington/Center for Marine Science Research. The Education Specialist has an office in Beaufort. Management is facilitated by cooperative agreements with other state agencies and by the use of a local advisory committee established for each reserve component.

In addition, the NC Department of Environment, Health and Natural Resources has approved a request by the Division of Coastal Management for a new northeastern coastal reserve office. This new office will consist of a site manager, an education specialist and a research specialist to develop and administer a comprehensive local management plan for Currituck Banks, Kitty Hawk Woods, and Buxton Woods coastal reserves. The approximate cost for managing these northern areas is anticipated at \$100,000.

The U.S. Department of Commerce has contributed \$9.5 million since 1983 for the acquisition of key natural areas in the Coastal Reserve. Federal grant funds are matched on a project by project basis with an equal amount of non-federal funds. Special appropriations by the General Assembly provided matching funds for land acquisition at Permuda Island, Masonboro Island and Buxton Woods. Matching funds for Buxton Woods (\$2.3 million) were also awarded from the Recreation and Natural Heritage Trust Fund. In total, over \$14 million in federal and state funds have been expended for Reserve acquisition and management. Another \$4 million in land donations were used to match federal funds.

The Department supports a substantial increase in the operating funds currently available to manage the current and potential future reserve sites, and has submitted an

expansion request to achieve that objective. The reserve property is also expected to be utilized by universities and independent groups with their own funding sources for research and educational projects.

8. In addition to state funds being used for the acquisition and management of lands in Kitty Hawk Woods, the project has received financial support from both the Town of Kitty Hawk and the NC Nature Conservancy. The Town has recently received title to the 462-acre conservation easement tract valued at \$750,000 as well as a conservation easement on an additional 125 acres. The cost to the Town in obtaining title was approximately \$26,000. The NC Nature Conservancy is contributing \$25,000 in in-kind services through negotiations with the Resolution Trust Corporation for the purchase of Tract A. Both the Town and The Nature Conservancy will also be contributing to the development of a management plan for the publicly owned lands in Kitty Hawk Woods.
The Kitty Hawk Woods project also receives support from the National Oceanic and Atmospheric Administration (NOAA) through funding of the NC National Estuarine Research Reserve which is part of the NC Coastal Reserve system. NOAA will be providing \$331,000 over the next three years for operation of the coastal reserve components.
9. The North Carolina Coastal Reserve program is designed to ensure the long-term protection of wetland values. Reserve management and strategy will provide for the protection of Wetlands in perpetuity.
10. The goals of North Carolina Coastal Reserve program are to enhance public awareness of estuarine systems, provide information and educational opportunities to the coastal managers and the public, and foster individual responsibility for estuarine stewardship. Upon inclusion in the Coastal Reserve system, Kitty Hawk Woods will be incorporated into all outreach programs.
11. The acquisition of lands in Kitty Hawk Woods is part of an ongoing effort of the state to protect and preserve the maritime forest ecosystem. This year, the Division of Coastal Management has received \$850,000 in funds (\$500,000 for Kitty Hawk Woods and \$350,000 for Buxton Woods) from the North Carolina Natural Heritage Trust Fund for the acquisition of maritime forest lands. The Division will continue to work towards the acquisition of large tracts of Kitty Hawk Woods as they are made available. Support from the U.S. Fish & Wildlife Service for this current project will aid the Division's future applications to the Natural Heritage Trust Fund to purchase lands in Kitty Hawk Woods. The State of North Carolina currently holds a conservation easement on 462 acres of Kitty Hawk Woods and plans to acquire an additional 144 acres as the non-federal match for this project. The proposed acquisition of approximately 110 acres is essential to protect the area from the threat of development and to help realize the goal of the providing protection for this globally significant ecosystem.

12. The State provides for the purchase of natural areas and other lands for recreation through the North Carolina Natural Heritage Trust Fund, which is supported both by real estate transfer fees and motor vehicle license plate fees.

PROPOSED BUDGET
KITTY HAWK WOODS
MARITIME FOREST ACQUISITION

Federal Portion	
Land Acquisition Tract B	\$1,000,000
State Portion	
Land Acquisition Tract A	\$500,000
Non-State Contributions	
Town of Kitty Hawk	
Administrative Costs in Obtaining Title	\$26,000
Value of Recently Acquired 462-Acre Tract	\$750,000
NC Chapter of The Nature Conservancy	
In-Kind Services for Negotiations With	
The Resolution Trust Corporation	\$25,000
Total Project Cost	\$2,301,000

Total Grant Request \$1,000,000