



in the park free

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Lighthouse Relocation is A-OK

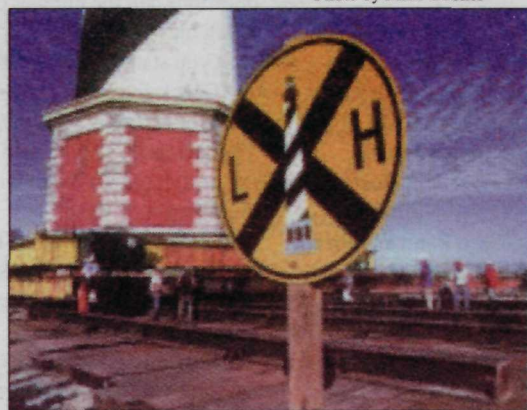


“Cape Hatteras Light Station here, the lighthouse has landed!”

in the vernacular of the 1960s, “Cape Hatteras Light Station here, the lighthouse has landed!” signaled the successful conclusion of a project that many thought was beyond the possibility of achieving. In perhaps the biggest event ever to take place at Cape Hatteras National Seashore, the Cape Hatteras Lighthouse was moved during the summer of 1999 from its original 1870 location and set down at its new site, 2,900 feet to the southwest and 1,600 feet from

the Atlantic Ocean shoreline. The move, which took about 175 days of on-site preparation, was completed in 23 days from June 17 to July 9; there were two days (July 4 and 8) during the 23-day period that the lighthouse was not pushed. The

Photo by Mike Booher



the 1960s.

The erosional threat to the lighthouse had existed since 1935, and the issue of how to save it had

feat held the attention and imagination of the nation almost as much as the Mercury/Gemini/Apollo space missions of

dragged on for nearly 20 years. With the vagaries of coastal shoreline existence and the possibility of a destructive hurricane, it seemed time was running out for the Cape Hatteras Lighthouse. In 1989 the National Park Service made a bold decision to move the lighthouse. With support funding from Congress in 1998 and 1999 and the help of many dedicated and committed engineers, construction workers, volunteers and lighthouse aficionados, it was a project that was meant to happen.

Thousands of sidewalk superintendents, ages 90 days to 90 years, arrived to witness what turned out to be a complex, but not terribly complicated effort to save the Cape Hatteras Lighthouse. Construction fences put viewers almost within arm’s reach of the move platform. Volunteers and visitors outside the fence and construction workers inside the fence chatted continu-



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ously amongst themselves about the mechanical details of how the move was being accomplished. Underneath it all was some driving spiritual force that forged, for different reasons, a relationship between spectators and the lighthouse itself. Saving the lighthouse was about passing along to future generations those symbols that embody values representative of the best of the American character. The Cape Hatteras Lighthouse is a vessel of the American experience, a symbol of the lightkeepers and their families and the way they lived their lives—with dedication, courage, commitment, care and concern for their responsibilities and for the people who made their livelihood from the sea. In the spirit of those lightkeepers past, this generation stepped up to the challenge to see that tangible evidence of those values was passed on to future generations. 

Photos by Mike Booher



OBGP

outer banks group park info

Off-Road Vehicles:


Know the rules of the road

Only licensed drivers can drive vehicles (registered for highway use) on sections of beach open to off-road vehicle travel. Driving is permitted between the base of dunes and the ocean and on designated routes. Closed sections are well marked. Vehicles may enter the beaches only at designated crossing ramps.


If you get stuck, let some air out of the tires. This will usually give better traction and decrease strain on the engine. Carry a jack, shovel, tire pump and water for emergencies.

Ocean water is very salty and corrosive. Do not drive through salt water. Rinse your vehicle with fresh water after leaving the beach.


Respect shorebird nesting and sea turtle sanctuaries to help protect young hatchlings. These areas are well posted.

Soundside off-road travel is permitted only on established roads or trails. Ask for an off-road bulletin at the nearest Visitor Center. 

Day Use Areas

The park provides day use areas, free of charge, for activities during daylight hours at Coquina Beach (restrooms, guarded beach, shower rinse), Salvo (windsurfing, soundside activities), Canadian Hole (windsurfing), Buxton (picnic area), Sandy Bay south of Frisco Village (restrooms, guarded beach, shower rinse), and the Ocracoke guarded Beach, north of the village. Refer to the center page map for exact locations. 


Nature Trails

Self-guided nature trails provide visitors with a rewarding, up-close look at the diverse environment of the Outer Banks. Trails include the Fort Raleigh Thomas Harriot Nature Trail and Freedman's Trail, Bodie Island Dike Trail and Pond Trail, Pea Island NWR North Pond Trail, Buxton Woods Trail, Ocracoke Island Hammock Hills Trail and the Buxton Mountain to Sea Trail. Stop by one of the park visitor centers for further information - then take a hike. 


Fireworks

North Carolina laws make the sale of certain types of fireworks legal. While visitors will discover that these incendiary devices are available in the villages throughout the seashore, federal regulations prohibit their use anywhere in national parks. Wildfire, caused by fireworks, is the leading reason for emergency call-out.


Certain fireworks may be lighted only within the limits of the villages and not on the beach. The beaches in front of the villages on Hatteras Island are part of the Cape Hatteras National Seashore. In Dare County, firecrackers and anything that explodes or is launched into the air are illegal. The use of incendiary fireworks where legal should be done under the supervision of adults and in an environment where the spread of fire is improbable.

Fireworks have been a part of American summers for over two hundred years, especially when celebrating Independence Day. Attention to regulations and safety will help you enjoy your celebrations this year and for years to come. 

Fire

Beach fires are permitted only below the high tide line (i.e. not on the dunes). Put out fires with water, not sand. Sand allows air to reach the fire and it will continue to burn. Open fires (other than beach fires) are only allowed in campground and picnic area grills. Fires are not permitted on Pea Island National Wildlife Refuge. 

Site Bulletins

Need detailed information on specific sites, historical structures, natural environments or management programs in the parks? Well, all you need do is ask for it at a National Park Service Visitor Center. Having talked with visitors and answered their questions for a number of years, park rangers have a pretty good idea what information visitors need. We have site bulletins that address some of these needs, so just ask. We may have the bulletin you need to make that trip of yours more complete. If not, then we know the subject for our next bulletin. 


Personal Watercraft Prohibited at Cape Hatteras National Seashore

Widely differing points of view about how the Cape Hatteras National Seashore should be used collided in the results of a public comment period on the use of PWCs in the park that ended this past winter. Of the 1,034 responses received by the Seashore, 948 were deeply opposed to any type of personal watercraft, about an 11-to-1 ratio against PWCs. When considering only the responses from residents living near the park, the results were about 10-to-1 against.

"Seashore staff compiled various available scientific research and demographic studies on PWCs which indicate that the machines contribute significantly to air and water pollution, disturb wildlife, threaten other resources, and pose safety risks to operators and others visitors in the area," said former Outer Banks NPS Group Superintendent Bob Reynolds.

Legislative mandates that govern

the National Park Service require the Service to manage all National Park System units "...to regulate the use of the Federal areas...by such means and measures as conform to the fundamental purposes of said parks...which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein...by such means as will leave them unimpaired for the enjoyment of future generations." The Cape Hatteras National Seashore enabling act even states that the Seashore "...shall be permanently reserved as a primitive wilderness..."

The PWC closure will prohibit trailering, launching or landing PWCs on any NPS ocean or soundside beaches, public boat ramps at Oregon Inlet and Ocracoke Island, and operation of PWCs within the boundaries of Cape Hatteras National Seashore which includes waters within 150' of NPS lands on the soundside. 

Campground Rules & Regulations

Camping in the park is allowed only in designated campgrounds. Most campgrounds are near the ocean in flat, sandy areas without shade. Each has modern toilets, drinking water, cold showers, grills and tables. There are no utility hookups. Dump stations are located at Oregon Inlet, Cape Point and Ocracoke.

Fourteen days is the maximum length of stay within the park. Campsites are limited to six people and two vehicles (a trailer is one vehicle). If you tent camp, bring extra-long stakes. Mosquito netting and repellent are recommended.

Oregon Inlet, Cape Point and Frisco Campgrounds are operated on a first come, first served basis at a fee of \$14 per night. Ocracoke campsites may be reserved for \$15 per night. Holders of Golden Age or Golden Access Passports pay 50%. Checkout time is noon.

Campsites at Ocracoke may be reserved in one of three ways; at the Ocracoke campground NATIONAL PARK RESERVATION (NPR) terminal,

in writing (reservation folders available at ranger stations) and through the nationwide NPR system - persons with a VISA, Discover or MasterCard may make telephone reservations by calling 1-800-365-CAMP.

Check the ticket you receive for correct information. If you have questions call the number on the ticket. Bring only the equipment (tent, trailer, etc.) you stated on your reservation.

Check-in time for reserved sites is noon, or earlier if a site is available. Your campsite will be held until 8 a.m. the next day. Call if you will be arriving after the 8 a.m. deadline.

Campground closings for the season are dependent on funding levels. Check with the nearest Ranger Station for the latest information.

For more information contact: Cape Hatteras National Seashore, Route 1, Box 675, Manteo, NC 27954 (252) 473-2111, or stop by Whalebone Junction Information Station, Oregon Inlet or Ocracoke campgrounds.



OBGPS

outer banks group park safety

Swimming Safety

The ocean is a wonderful place to swim - if you are careful. Strong wave energy, rough surf and rip currents can turn a quick dip into a nightmare. Underwater sandbars often develop offshore forming a trough of water between the bar and the beach. Rip currents form when the sand bar breaks and the trapped water funnels out to sea through the break, sometimes sweeping swimmers with it.

The important thing to remember if you're caught in a rip current is:

Do Not Try To Swim Against The Current

Instead, swim across the current, parallel to the shore, slowly working your way back to the beach at an angle. Above all, remain calm.

Ocean conditions differ from day to day, sometimes changing hourly. Non-swimmers should use coast Guard approved flotation vests, even while wading.

The force of big waves crashing at the shore's edge can pick you up and throw you into the sand. This may result in a dislocated shoulder or knee. Don't swim during rough seas. Broken necks and paralysis have resulted from swimmers being thrown into the ocean bottom headfirst.

Watch for jellyfish floating in the water. If stung, contact a ranger for first

aid. Don't rub sand on the stings. Meat tenderizer often reduces the pain.

Don't swim near surfers. The fin under the surfboard can cut you.

Use Lifeguarded Beaches

The Park Service operates lifeguarded beaches during the summer at Coquina Beach on Bodie Island, Sandy Bay Day Use Area south of Frisco Village, and Ocracoke Lifeguarded Beach

Guarded beaches are staffed from Memorial Day through Labor Day. Red warning flags are posted at lifeguarded beaches when swimming conditions are hazardous. If you swim at beaches not patrolled by lifeguards, swim at your own risk

Rip Currents Can Kill

Rip currents are ocean currents, caused by a build-up of water by the shore. Usually a rip current will result in a channel 25 to 100 feet wide resulting in powerful currents running off shore. Rip currents are usually sandy brown in coloration and are choppy in appearance.

To get out of a rip current, swim parallel to the shore until the pull stops. Then swim in, or tread water until a lifeguard can come to assist you.

Bugs !!!!

Mosquitoes and other insects surely serve a purpose in the scheme of things. Nonetheless, they are nuisances and can make your trip an ordeal. Be prepared with mosquito repellent and netting for camping and other island-related activities. After hiking be sure to check yourself for ticks.

Avoid the "Ouch"

Our seashore is beautiful, but often on the beach and in the sound you'll find dangerous debris. You may come across sharp objects such as broken seashells, crabs, cactus and spurs. People add to that with glass, metal, fishhooks and nails. HOT SAND can burn unprotected feet. Think safe before leaving your vehicle. Protect your feet from these hazards.

Too Hot to Handle dangers of heat and humidity

A combination of high temperature and high humidity creates an even higher and possibly dangerous apparent temperature. With an air temperature of 90F and a humidity of 80%, the apparent temperature is 113F. Heat cramps, heat exhaustion and heatstroke are possible during elevated apparent temperatures. Enjoy the beach, but limit your physical activity and exposure during days of high heat and humidity.

SAFETY TIPS

- Due to dangerous currents, never swim in inlets
- Do not swim alone, at night or near fishing piers
- Children should swim only with adult supervision
- Know the various types of ocean currents and how to get out of them
- Watch the weather. Storms and squalls come up quickly
- Don't swim in the rain. Lightning is extremely dangerous and does strike the beach

What to Do During a

Hurricane WATCH

• Listen regularly to a NOAA Weather Radio or local radio stations for updated information. Hurricanes can change direction, intensity and speed very suddenly. A storm that was a minor threat several hours ago can quickly escalate to a major threat.

• Fill your car's gas tank. If advised to evacuate, you may be caught in traffic, idling for long periods of time. Gas stations along the route may be closed.

• Listen to the advice of local officials and evacuate if they tell you to do so.

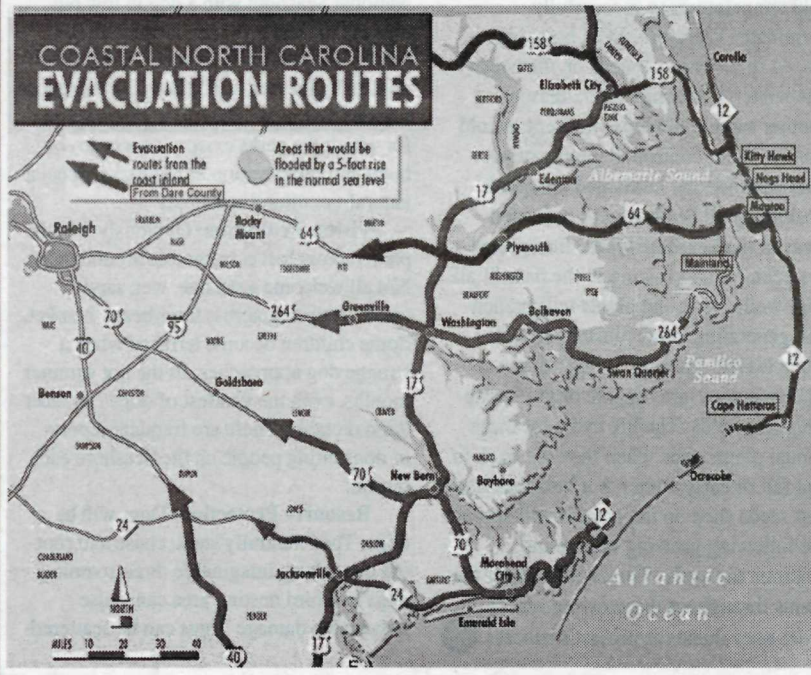
• Others will be concerned about your safety, so call a loved one or friend outside of the storm area. Tell them that you are aware of the storm and advise them of your plans.

Hurricane WARNING

• Keep posted to local radio stations for updated information and official instructions. Local officials will advise leaving only if they truly believe your location is in danger. It is important to follow their instructions as soon as possible. It takes several hours for an organized evacuation. Roads may become blocked as the storm conditions worsen, preventing a safe escape.

• Call your check-in contact so someone will know where you will go in case of an evacuation.

• Pack all of your belongings to save time if the evacuation is announced.





OBGRM


outer banks group resource management

Research Could Give Boost to Threatened Beach Plant

Marcia Lyons, Park Biologist

Sea beach amaranth, *Amaranthus pumilis*, once grew on the sandy shores of Atlantic barrier islands between Massachusetts and the Carolinas, but populations have dwindled due to beach stabilization efforts such as jetties and sea walls as well as increased recreational use on beaches. Currently protected under the Endangered Species Act, the plant is only found today in New York and the Carolinas, including Cape Hatteras National Seashore. Recently, a few isolated plants were found in Maryland at Assateague Island National Seashore.

Researchers from East Carolina University in Greenville, North Carolina, are hoping to boost the population by experimenting with techniques to restore the plant in suitable habitats within Cape Hatteras National Seashore.

After much research, it is now known that amaranth seeds require exposure to cold temperatures to successfully germinate. Therefore, ECU botanists placed small bags of seeds on the beach this winter. For comparative reasons, another sample of seeds was kept in cold storage under controlled temperatures. This summer, the cultivated amaranth seedlings will be planted in protected areas of the Seashore where the species has been found growing in the past. If all goes well, the young plants will branch out, generating many clusters of dark green leaves. Flowers, though tiny and inconspicuous, are capable of producing abundant seeds. The life cycle for these annual plants ends when they die back in late fall or early winter, but botanists hope that seeds shed on the ground will sprout the following growing season and continue the cycle. They will monitor the plants throughout the growing season in order to evaluate the project's success. 

Marine Mammal Strandings in the Seashore


Marcia Lyons, Park Biologist

Although bottlenose dolphins are the most commonly observed marine mammals, there are many other marine mammals in North Carolina's waters, including sperm whales, harbor porpoises, Atlantic spotted dolphins, pilot whales, minke whales and harbor seals.

Every year in North Carolina, more than 100 of these marine mammals are stranded on the beach. Strandings can involve as many as 20 different species. Most of these stranded mammals are no longer alive, but a few live strandings occur every year. Death can result from various natural diseases, entanglement in fishing gear or ingestion of plastics. Single animals usually strand themselves due to illness, malnutrition or trauma.

If you see an animal on the beach, do not push it back into the water. A sick animal needs rehabilitation before it contaminates other healthy animals. In addition, federal law prohibits direct interaction with any marine mammal without a permit. It is important to report

marine mammal strandings. Contact a park ranger, who will attend to the animal as needed and contact the National Marine Fisheries Service (NMFS) Marine Mammal Stranding Network. This group will investigate the animal and determine the cause of death, at the same time gaining information about the animal's life and collecting data for laboratories around the country. Important data can be retrieved from even the most decomposed animal. If the animal is alive, the biologist must decide whether rehabilitation is a possibility.

To report a marine mammal on the beach, contact one of the ranger offices or visitor centers or call park headquarters at (252) 473-2111. You can also contact NMFS Marine Mammal Stranding Network in Beaufort, North Carolina, at (252) 728-8762. Please provide your name and phone number, the life status of the animal, exact location, approximate length and notable coloration, and let them know if the animal has a snout like a bottlenose dolphin. 

Good Reasons for Leashing the Dog


Marcia Lyons, Park Biologist

Many visitors come to Cape Hatteras National Seashore with a dog in tow but take off the leash as soon as they hit the beach. National Park regulations require dogs to be leashed at all times for two good reasons that relate directly to the purpose for which the parks exist: visitor enjoyment and preservation of the parks' special natural or cultural resources.

Visitor Protection: Obviously, not all park visitors feel comfortable around dogs. Not all welcome a strange, wet, sandy canine traipsing across their beach blanket. Some children become terrified when a strange dog approaches. In the hot summer months, even the gentlest of dogs can react unpredictably. There are frequent reports of dogs biting people on the Seashore each season.

Resource Protection: Dogs will be dogs. They naturally stalk, chase and root out everything imaginable. Free-roaming dogs in a bird nesting area can cause irreparable damage. Eggs can be scattered

or destroyed. Chicks can be killed outright or separated from their parents, making them vulnerable to hungry crows and gulls—or a passing off-road vehicle. Other birds are vulnerable too. Migrating shorebirds need to feed and rest if they are to successfully complete their long journeys. One dog can chase a group of shorebirds up and down the beach for hours. Dogs' keen sense of smell can steer them to sea turtle eggs buried in the sand, and an entire clutch of turtle eggs can be quickly destroyed. Dogs can also harm deer that live in the Seashore. Recently, a fawn drowned in the ocean after it was chased into the water by dogs.


It is the responsibility of pet owners to make sure their dogs do not become a problem to park visitors or vulnerable resources. The only sure safeguard is to keep dogs on leashes. Besides, it is a regulation in the Park, and violators can be fined \$100 for each unleashed dog. 

Speaking of Objects

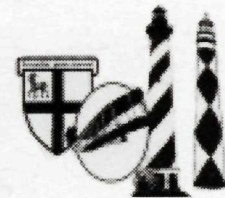
Steve Harrison,
Chief, Resource Management

You stroll into the museum and there on the wall before your eyes is a wooden airplane propeller. Nothing to get excited about, you say? Look again. This is no ordinary propeller. More than 95 years ago, this wooden propeller pushed an airplane up into the air for the first time from the sands at Kill Devil Hills. Look more closely and you notice the year "1903" on the side of the propeller, painted by Orville Wright, who was at the controls of that airplane on December 17, 1903.

The 1903 Wright Flyer propeller is representative of the scores of museum objects on display in National Park Service visitor centers at Fort Raleigh, Wright Brothers Memorial and Cape Hatteras. The National Park Service plays a very important role in preserving and presenting our nation's history, and the museum collections are an important part of that role. The parks, like other museums, have artifact collections in storage and on exhibit. Many of the objects in storage are too fragile to display or are not appropriate for the current exhibits. When artifacts are exhibited, we do all that we can to protect them from deterioration caused by bright light and changing temperatures and humidity. We also protect them from damaging human touch, vandalism or even theft.

We hope you learn more about the parks' history from seeing the objects on display in the visitor centers. The National Park Service preserves and protects these valuable artifacts so that future visitors, perhaps your children or grandchildren, will also see and learn from them. They, too, must have the opportunity to marvel at the wooden airplane propeller that carried humans into the air for the first time. 

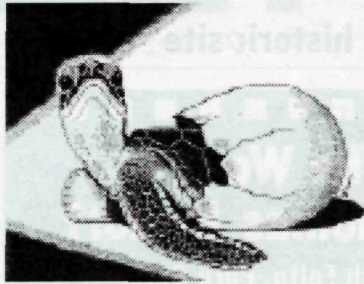
outer banks group resource management



Keep Sea Turtles in the Dark: Turn Off the Lights

Lights can affect both nesting and hatching sea turtles. Night-nesting females seek out dark beaches and may not use a perfectly suitable beach if too much light shines from land. The turtle may choose another site not as well suited for nesting, such as a narrow, eroding beach.

In contrast, turtle hatchlings emerging from a nest at night are attracted to light. Under natural conditions, light reflecting off the ocean acts as a beacon, drawing hatchlings to the surf. As coastal communities develop, artificial lighting becomes a problem. Street and house lights can disorient hatchlings, leading them away from the ocean environment they need to survive.

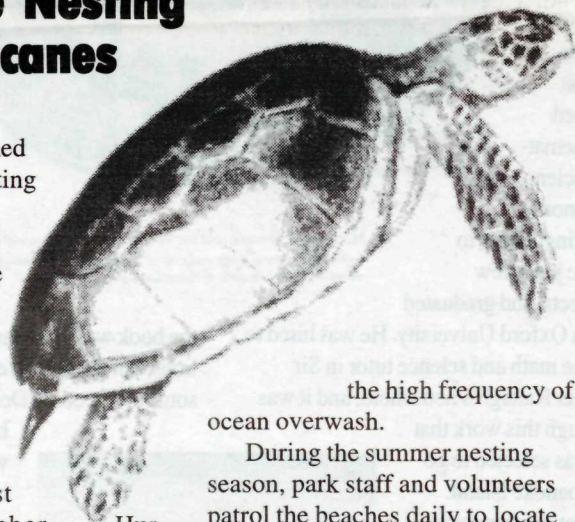


If you live or vacation by the beach during the summer and fall, think about the amount of light shining from your house toward the ocean and beach. Turn off unnecessary lights. Do not keep outside lights burning all night. Use curtains or shades to reduce the amount of light visible on the beach. Taking these few simple steps may go far in helping to protect threatened or endangered sea turtles.

Sea Turtle Nesting and Hurricanes

With 92 confirmed nests, sea turtle nesting in 1999 was near record levels along the beaches of Cape Hatteras National Seashore. All nests found in the National Seashore were laid by loggerhead turtles. But in late August and early September, Hurricane Dennis swept by the Seashore, causing extensive loss and overwash of half of the nests. Some nests were physically washed away, others had from three or four feet of sand deposited over them, and still others received continuous ocean overwash.

Of the 92 nests in the Seashore, 40 hatched before the storms, leaving 52 nests subject to the effects of the hurricanes. Of those left, 27 were physically washed away and only one of the 25 remaining nests hatched after the storm episodes. Many of the developing embryos apparently succumbed to drowning caused by



the high frequency of ocean overwash.

During the summer nesting season, park staff and volunteers patrol the beaches daily to locate sea turtle nests. Some nests are relocated due to beach erosion and proximity to surf lines or fishing piers. However, nests are left in place whenever possible since it is best to have as little human intervention as possible. Nest sites are closed to the public until hatchlings have safely emerged and entered the surf. Please respect these closed areas, and please do not shine artificial lights on or near beaches, which can attract hatchling turtles and prevent their successful journey to the sea. Public support is needed if efforts designed to protect the sea turtle population are to succeed.

Disappointing Nesting Season for Coastal Birds

Stephen Hartsfield, Student Conservation Association Volunteer

The 1999 season proved to be a year of poor success for several species of birds nesting along Cape Hatteras National Seashore beaches. Several factors contributed to this lack of success, including predation and a major hurricane.

The piping plover, a small, threatened shorebird, had mixed success. The numbers of breeding pairs were the lowest recorded since monitoring began in 1989. Plover pairs have dwindled from a high of 15 to only six pairs this season. However, fledgling rates have been higher than normal over the past two years. Seven chicks reached fledgling age in 1999. Volunteer interns, supported in part by the North Carolina Beach Buggy Association, monitored the activities of the solitary nesting plovers and their broods as well as located nests on Hatteras and Ocracoke Islands.

Park staff also closely monitored the nesting activities of American oystercatchers this season. Like piping plovers, oystercatchers are solitary beach-nesting shorebirds, but they are larger and more conspicuous. The nesting activities of 41 pairs of oystercatchers were observed on the National Seashore, and studies of oystercatchers will continue in the coming years to help identify causes of low breeding success.

Several colonies of terns and skimmers were established on the National Seashore beaches this season. More than 1,200 pairs of these water birds nested, with the largest colony of 1,000 nests located on the Ocracoke Inlet sand spit. Most of the tern and skimmer nests failed due to hurricanes and predation by feral cats, raccoons, crows and gulls.

The National Park Service protects beach-nesting birds by establishing seasonal beach closures. Following the nesting season, some areas remain closed to provide refuge for feeding and resting fall migrants. Please respect the closed areas.

Please Don't Feed the Animals

Marcia Lyons,
Park Biologist

Cape Hatteras National Seashore is home to a wide variety of animals. Unfortunately, many park visitors harm the wildlife by feeding them. Providing food for animals may appear harmless, but it often has detrimental results.

Commercial foods can alter normal diet and feeding patterns. Gulls, for example, must eat great quantities of energy-rich food to satisfy a high metabolism. Their primary natural food source includes a vast array of sea life, dead or alive. A substituted diet of man-made food robs them of needed nutrition and diverts them from their natural habitats.

During the warmer months of spring and summer, wildlife offspring are learning to survive on their own. Feeding patterns, influenced by habitat and supply, are developed during this critical period. Tempted by such an easy food source, many of the young become overly dependent on, and conditioned by, human handouts. When their food source diminishes during the winter months, these animals may starve.

Populations of gulls and other common species (raccoon, deer, etc.) increase rapidly when people feed them. This upsets the natural balance and results in greater competition for food and habitat among all wildlife. This growing pressure may further endanger threatened species, such as the piping plover.

Feeding wildlife in the park is illegal, both for the animals' protection and yours. Animals cannot determine where food ends and fingers begin. Though rabies has not been documented in the park, never attempt to approach or touch wild animals. Animals are unpredictable and should be viewed at a distance. Enjoy the wildlife that lives on the seashore, but also help it stay wild and healthy.



www.nps.gov/fora

FORA

fort raleigh national historic site

Raleighwood – Star of the Silent Screen

by John A. Gillikin
Chief of Interpretation and Visitor Services, FORA

fort Raleigh National Historic Site is well known as the location of *The Lost Colony*, the nation's premiere outdoor drama. The uniquely American theatrical art form has been playing at this location since 1937, but did you know that the current production is not the first dramatic portrayal of the subject?



A scene from the silent movie *The Lost Colony*

The first *Lost Colony* was a silent movie. Due to the small and remote nature of North Carolina schools in the 1910s, the State Board of Education was concerned with providing the same quality of education for all students, rural and urban. Mabel Evans Jones, the first female Superintendent of Schools in North Carolina, came up with one solution to the problem. Working with the North Carolina Department of Public Instruction from her office in Dare County, Jones arranged for a movie to be made about the Roanoke voyages and the 1587 lost colony so that all North Carolina schoolchildren might know the story.

Jones wrote the script and starred in *The Lost Colony*, a silent movie

made by the Atlas Film Company. The film was produced near the original location of the colonies and it incorporated local people as the performers. The crew constructed scenery and converted an old shad boat into a sixteenth-century galleon by draping it with canvas, and the end result came out surprisingly well. This was supposed to be the first in a series of films known as North Carolina Pictorial History, but no more were ever produced.

The Lost Colony is the oldest film produced in North Carolina still in existence and stands as a monument to a dedicated educator and a proud people. Its legacy lives on in the summer production *The Lost Colony*, now entering its 63rd year.



Great
for Kids

Hey Kids

Be sure to look for our Great for Kids logo on the activity list. These programs are made with fun and kids in mind. (Grown-ups can come along too if they don't act too serious.)

Who Was Thomas Hariot?

Beth Folta, Park Guide

as you walk the Thomas Hariot Nature Trail, you'll see plaques offering glimpses of the man for whom the trail was named and his work on Roanoke Island. Who, you might wonder, was Thomas Hariot?

A man of many talents, Hariot studied mathematics, science, astronomy, and linguistics, to name just a few subjects, and graduated

from Oxford University. He was hired to be the math and science tutor in Sir Walter Raleigh's household, and it was through this work that he was selected to go to Roanoke Island. Hariot accompanied Ralph Lane and Sir Richard Grenville on the 1585 voyage to Roanoke Island, or "Virginia" as it was known then. He was given the job of observer and chronicler for the voyage and was supposed to explore, catalog and collect samples of the New World. He did all this and more.

Hariot chose to follow his own personal interests, those of an anthropologist. He learned Algonquian, the language of the natives, to better understand their

ways of life and customs. Hariot recorded the customs of the Native Americans through writing, whereas another man on the voyage, John White, recorded them with drawings.

While Hariot was in "Virginia" he wrote *The Chronicle or Discourse of Virginia According to the Course of the Times*. When he returned to England he published an abstract from the *Chronicle*

known as *A Brief and True*

Report of the New Found Land

Virginia, describing the life of the Native Americans and the data he collected on the vegetation and animals of the area.

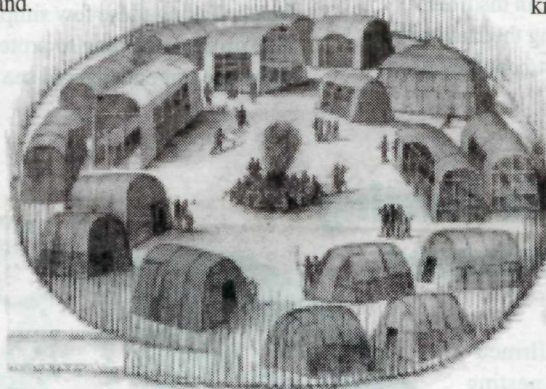
Originally,

the book was published without illustrations, but the second edition included some of Theodore DeBry's engravings

based on White's watercolors. Hariot had intentions of publishing the entire *Chronicle*, but he never did and the manuscript was lost.

Today, through Hariot's book and White's drawings, we are able to learn what life was like on this island some 400 years ago. And the Thomas Hariot Nature Trail offers

visitors an opportunity to imagine that life firsthand. As you approach the Roanoke Sound overlook, stand on the beach, look back and see what the colonists might have seen when they first arrived in this strange new world, "Virginia."



The names of Roanoke and the names of the houses, several and small, some of white and some of black of wood. All arranged about a large pale park, thick together in a sort of a wall.



fort raleigh national historic site



Waterside Theatre Lives On

by Beth Folta, Park Guide

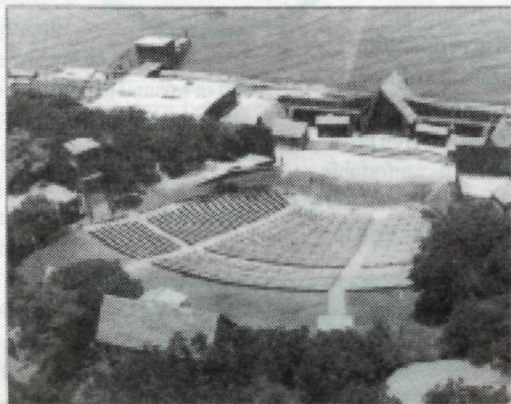
In 1937 Waterside Theatre became the home of *The Lost Colony* theatrical production. Sixty-three years later it is still the home of the nation's longest-running outdoor drama. The theater has seen its share of disasters and renovations over the years, but it remains true to the original design of Albert Quentin "Skipper" Bell.

The theater that people sit in today is, in reality, the third theater rebuilt in the same spot as the original. In 1947 Bell himself watched as fire destroyed the main stage, left wing, scenery docks and two of the dressing rooms. Bell and a team of volunteers, including the cast and crew of *The Lost Colony*, rebuilt the theater in six days. When the season was over, Bell continued improving the hastily built theater by adding, for the first time, restrooms, a concession stand and rain shelters. In 1960 Hurricane Donna passed

through the area, causing severe damage to the theater. The storm destroyed one side of the backstage and weakened the main stage, but repairs were made for the 1961 performance season.

Fortunately, in the past 40 years no other major disasters have struck the theater, but several changes have been made to improve or repair the aging theater. In 1998 the hard wooden benches that so many audience members remember

sitting on were replaced with comfortable stadium seating. For the 63rd season of *The Lost Colony*, the theater is receiving more repairs. In December 1999, the National Park Service began replacing the rotting and termite-ridden pilings that support the backstage area and the stage floor, both on stage and off. Plus, the theater will be totally rewired. Next year the National Park Service hopes to refurbish the dressing rooms.



Early Waterside Theatre

I Wanna Be A Ranger

If you've ever made this wish, it can come true on Roanoke Island. We "island people" have always made it a point to stick together and lend a helping hand where we could. This year, we've bonded together to help thousands of our young visitors fulfill their dream.

Roanoke Island Festival Park, The Elizabethan Gardens, The Lost Colony and the National Park Service have set up a Roanoke Ranger Program. To participate, visitors 13 or younger simply pick up a free work book at any of these locations, complete the requirements, return the workbook to the Park Visitor Center and with due and great ceremony; they will made a Roanoke Ranger and get a neat patch.

If it's not possible to visit these sites physically, then the young person may visit us virtually through our internet site, www.nps.gov/fora and doing the required activities. Then, in a few days, their Web Ranger badge will arrive in the mail. We Roanoke Islanders have spared no expense or effort to make your Jr. Ranger adventure a fun one. Join us this summer if you "Wanna Be A Ranger"



Roanoke
Ranger Patch



Web Ranger
Badge

Through the Woods, by the Water's Edge

One Site, Three Great Attractions: Fort Raleigh National Historic Site, The Elizabethan Gardens and *The Lost Colony*

There's a 400-year-old mystery at the north end of Roanoke Island. To search for the clues, simply walk through the woods, to the water's edge. You are at the site that, from 1584-87, marked the first English attempt at colonization in the "New World."

The Lost Colony is their story, told summer nights in a thrilling outdoor drama that plays beneath the stars at Waterside Theatre. But to fully understand these real-life adventurers and learn how

they lived, go still deeper into the woods and spend a day exploring the two other attractions that commemorate their story: Fort Raleigh National Historic Site and The Elizabethan Gardens.

Explore at Fort Raleigh

Approach Fort Raleigh from U.S. Highway 64 through Manteo—the namesake of an Algonquian Indian who befriended the colonists. As you enter the

(continued next page)

Fort Raleigh National Historic Site During Summer Season

Visitor Center Open Daily 9am - 8pm except Sundays - 9am-6pm
Summer Season Programs Scheduled (June 11 - August 26, 2,000)

Program	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Roanoke "The Video" 17 minutes	9:00, 12:00 5:00, 5:30	9:00, 12:00 5:00, 5:30 6:00, 6:30 7:00, 7:30	9:00, 12:00 5:00, 5:30 6:00, 6:30 7:00, 7:30	9:00, 12:00 5:00, 5:30 6:00, 6:30 7:00, 7:30	9:00, 12:00 5:00, 5:30 6:00, 6:30 7:00, 7:30	9:00, 12:00 5:00, 5:30 6:00, 6:30 7:00, 7:30	9:00, 12:00 5:00, 5:30 6:00, 6:30 7:00, 7:30
Where Did They Go? 45 minutes incl video	10:00 3:00	10:00 3:00	10:00 3:00	10:00 3:00	10:00 3:00	10:00 3:00	10:00 3:00
Compelling Stories 30 minutes	11:00	11:00	11:00	11:00	11:00	11:00	11:00
Cactus For Dinner 45 minutes	2:00	2:00	2:00	11:00	11:00	11:00	11:00
A Taste of England 45 minutes incl video	4:00	4:00	4:00	4:00	4:00	4:00	4:00
Arms and Armour 30 minutes	1:00	1:00	1:00	1:00	1:00	1:00	1:00

Program Descriptions

Roanoke "The Video" – This video, excerpts from the PBS series Roanoke, gives an excellent overview of the Roanoke Voyages of 1584-90.

Where Did They Go? – 45 minutes including Roanoke video

Join a ranger for the untold story of the history and mystery of the famous Lost Colony and explore possible answers to its fate. Bring your own solutions because all ideas are welcome.

Compelling Stories – The tradition of storytelling has long been a part of life on North Carolina's Outer Banks. Share with a ranger the tales of ghosts, shipwrecks or African American legends. Please check at the visitor center as topics change daily.

Cactus For Dinner – A stroll along Thomas Harriot Nature Trail (weather permitting) or digging through Native American artifacts will reveal the rich living culture the English found when they arrived on Roanoke in 1584. Join a ranger for discovery of how each culture reacted to their surroundings and each other.

A Taste of England – 45 minutes including Roanoke video Today, no one really knows what life was like for the colonists on Roanoke, but we do know what they left behind. A ranger will lead you through a 16th century journey through Elizabethan life in actual period room.

Arms And Armour – 30 minutes Oddly, the site of death dealing weapons strikes a primitive chord in all of us. We seem fascinated by instruments of destruction. Experience with a ranger a glimpse of the horror of 16th century warfare and the "tools of the trade".

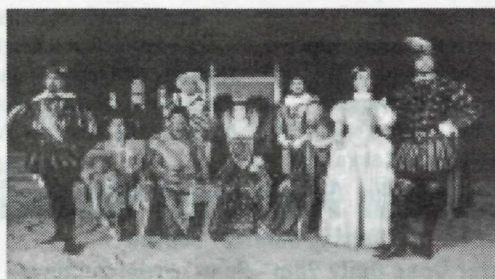
fort raleigh national historic site



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park, follow the winding road to the visitor center. Inside, the Elizabethan Room features the original oak paneling and stone fireplace from a sixteenth-century house of the kind lived in by the Roanoke colony investors. A gallery showcases artifacts excavated from the site, exhibits on the colonists and Elizabethan life, and copies of watercolors painted by John White, governor of the Roanoke colony. A short film depicts the story of England's ill-fated settlement from both English and Native American perspectives.

To literally walk in the colonists' footsteps, just step outside. Towering loblolly pines and live oaks draped with Spanish moss stir the imagination as you walk the historic grounds. A small earthen fort, reconstructed the way colonists may have built it in 1585, is a



The Lost Colony is America's longest running symphonic play.

prominent feature of the park. The Thomas Hariot Nature Trail, named for the scientist who accompanied one of the voyages, winds from this heavily wooded area to the Roanoke Sound. Nearby, respected archaeologist Ivor Noel Hume uncovered the remains of what is thought to be America's first science center. This is where metallurgist Joachim Gans, who sailed on the 1585 expedition, is believed to have conducted experiments to test minerals he found on the island.

Step into a Fragrant Garden

To learn of the privileged life from which some of the colonists came, stroll through The Elizabethan Gardens. Created by The Garden Club of North Carolina as a memorial to the first colonists, the gardens were designed and constructed by two of America's foremost landscape architects, Umberto Innocenti and Richard Weibel. Here, you'll find a



The herb garden fountain welcomes garden visitors once they leave the Gate House entrance.

bloom for every season: gardenias, roses, lilies, hydrangeas, azaleas, crape myrtles and camellias, in addition to a brilliant display of spring bulbs, summer annuals and herbs. Striking features include the Sunken Garden, the Queen's Rose Garden, the Woodland and Wildlife Garden, and a magnificent stone fountain surrounded by classical statuary. A thatched sixteenth-century gazebo appears around the bend of

one waterside path, and a period Gate House serves as the entry point for guests.

If you're lucky, you might even catch a glimpse of the queen. On Tuesdays during the summer months, enjoy a performance of *Elizabeth R*, a one-woman play about Queen Elizabeth I, in The Elizabethan Gardens. As a special program of *The Lost Colony*, Queen Elizabeth I, portrayed by an actress from the play, will host summer tea parties at Waterside Theatre on Tuesdays and Thursdays. And Elizabethan-style jugglers, acrobats, Pavanne dancers and madrigal singers make merry on August 18, when Fort Raleigh, *The Lost Colony* and The Elizabethan Gardens celebrate an Elizabethan Renaissance Faire, marking the birthdate of Virginia Dare, the first child born to English parents in the New World.


Roanoke Island's Civil War history is also

interpreted at the island's north end, which used to be the site of a Freedmen's Colony that provided homes, work and education for freed slaves. The two-mile, self-guided Freedom Trail commemorates this history. Access to the trail is near The Elizabethan Gardens entrance, and exhibits are located at the end of the trail on the Roanoke Sound.

Enjoy America's Longest-Running Outdoor Drama

Of course, no Fort Raleigh visit is complete without seeing a performance of the famed outdoor drama, *The Lost Colony*. America's longest-running symphonic play skillfully employs song,

dance, drama, comedy and special effects to bring the colonists' story to life. If you haven't see the show in a while, you're in for a surprise. New sets and costumes, a renovated theater and a smart, young cast make Pulitzer Prize-winning playwright Paul

Green's play unforgettable for vacationers, theater-goers and those who love a good romantic mystery. 

The Lost Colony runs every evening except Sundays from June 2 to August 25 at 8:30 p.m. Call the Box Office at (252) 473-3414 for more information or to make reservations.

Roanoke Island Festival Park

by Brenda G. O'Neal
Education Specialist

if you want learning to be fun, follow your compass to Roanoke Island Festival Park, where history comes to life and each day is a festival of events.

Experience history through interpreters dressed in period attire and speaking in Elizabethan dialect. Listen to the music of minstrels, find sharks' teeth in the fossil search pit or enjoy a respite in the most comfortable rocking chairs on Roanoke Island. Aboard *Elizabeth II*, witness the daily drill for setting and furling the sails, hear what life was like on the ship during the Roanoke Voyages across the Atlantic, and assist sailors with the everyday chores aboard ship.

On land, watch as soldiers in the military settlement keep a wary eye for signs of approaching Spaniards. Don a cape and join the soldiers in the daily pike and musket drills, try on armor or hone your swordplay techniques. Hear tales of treacherous sea voyages and a strange new land.

In the Roanoke Island Adventure Museum, an 8,500-square-foot learning center, trace the history of Roanoke Island and the Outer Banks. With hands-on activities, discover the secrets of

navigation, raise the sails on a spritsail skiff, explore a Civil War-era tent or visit the vintage General Store. Meet Lizzie and relive her 1899 visit to Nags Head, or share camp news with a Civil War soldier.


See the big-screen film, *The Legend of Two Path*, and get to

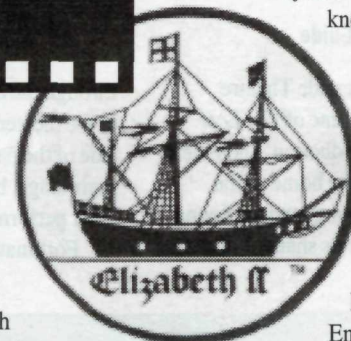
know Manteo, Wanchese and Skyco, three of the Native Americans who met the English when they arrived in the New World. Discover how the English forever changed the Algonquian

way of life and the difficult decisions the Algonquians had to make. Explore Blackbeard's legacy, the Elizabethan world view and many other program topics in the new History Garden, an

intimate venue with bench seating nestled in the pines.

Enjoy live drama, opera, dance and music with performances by the North Carolina School of the Arts at the Summer Arts Festival. Morning and afternoon programs delight young visitors, and evening programs on the expansive pavilion lawn provide the perfect setting for an evening of arts under the stars with the whole family.

Roanoke Island Festival Park, located in downtown Manteo, is open seven days a week. An admission ticket is good for two days. For admission rates or other information, call (252) 475-1500 or the 24-hour events line at (252) 475-1506. 



Try on a bit of history at Roanoke Island Festival Park



A Special Note To Educators

Be sure to pick up a teacher package from the information desk at FORA or check out the Heritage Education Program on our website. It contains materials designed on the North Carolina Standard Course of Study - Grades K-12 and fulfills many of the requirements for interdisciplinary educational practices. Oh, and let's not forget, IT'S FREE! (a big selling point). Just ask the Ranger to receive your copy.

www.nps.gov/wrbr

WRBR

wright brothers national memorial

Destination: Kitty Hawk by Beverly Jones, Volunteer

In the 1900s, when the Wright brothers conducted their first glider experiments on the Outer Banks, travel was quite different than it is today. There were no interstates, no roads at all in many locations and no bridges to cross the inlets or sounds. Let's follow Wilbur Wright on his first journey to the Outer Banks in 1900.

**Thursday,
September 6,
6:30 p.m.**

He boards a train at Union Station in Dayton, Ohio, headed for the East Coast.

**Friday,
September 7,
6 p.m.**

Wilbur arrives at Old Point Comfort (now Newport News, Virginia). After loading his gear onto the steamer *Pennsylvania*, he boards the vessel for a short trip to Norfolk.

Saturday, September 8, 4:30 p.m.

Wilbur takes a train to Elizabeth City. Upon arrival, he checks into the Arlington Hotel. After many inquiries about transport

to Kitty Hawk, he realizes "no one seemed to know anything about the place, or how to get there."

Tuesday, September 11, after dinner

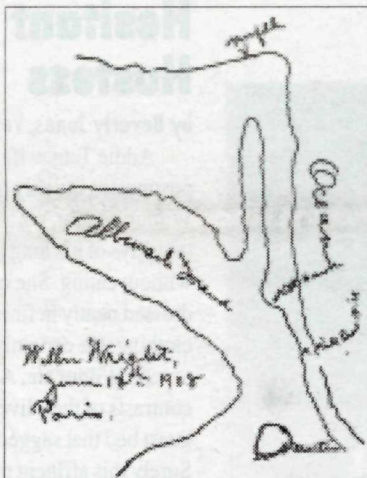
Wilbur locates a boatman, Israel Perry, who is willing to ferry him down the sound to the Outer Banks. His enthusiasm evaporates somewhat when he sees the poor condition of the boat. Rough waves, numerous leaks, collapsing sails and frequent bailing make the evening trip quite unpleasant. Exhausted, Wilbur and the crew collapse on the deck of the anchored schooner around 11 p.m. near North River.

Wednesday, September 12, noon

The group sets sail after spending hours repairing the boat. Wilbur politely refuses any of the food on the vermin-infested schooner, consuming only a jar of jam his sister Kate had put in his pack. At 9 p.m. the boat reaches the shores of Kitty Hawk Bay. Wilbur spends the night on the boat.

Thursday, September 13, early a.m.

Wilbur finally stands on the sandy beaches of the Outer Banks.



This sketch by Wilbur Wright shows the position of Kitty Hawk and Kill Devil Hills. Wilbur drew it from memory while in Paris, France, in 1908.

Orville joined Wilbur in Kitty Hawk on September 24, and the two began a second journey, one of experimentation and knowledge, that would bring to them the secrets of powered flight.

Take your first flight from the very same spot the Wright brothers took theirs.

Reservations and tickets are available at our booth beside the Wright Brothers Monument. Call (252) 441-4460 for reservations or come by the booth.

**\$29 per person, party of three
\$39 per person, party of two.
\$68 per person, biplane rides**



Wright Brothers National Memorial

Visitor Center Open Daily 9am - 6pm June 11 - August 19, 2000

Park entrance fee - \$2/person or \$4/car

Federal Fee Passports honored

Program	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Flight Room Talk	10:00	10:00	10:00	10:00	10:00	10:00	10:00
Hourly	til 5:00	til 5:00	til 5:00	til 5:00	til 5:00	til 5:00	til 5:00
First Flight Tour		11:30	11:30 & 1:30	11:30 & 1:30	11:30 & 1:30	1:30	
Life at Kitty Hawk			10:30		10:30		
Wrights After 1903			3:30			3:30	
Cleared for Takeoff		2:30		2:30		2:30	
Kite Flight	1:30			10:30			10:30
Flying Objects	3:30				3:30		
Fun in Flight		1:30					4:30

Program Descriptions:

Flight Room Talk - Hear of the determination, men, and machines which led to the first successful powered flights in 1903.

First Flight Tour - Step back in history, during this short walk, to the actual site of man's first powered flight.

Life at Kitty Hawk - Tents, mosquitoes, beautiful sunsets, and nor'easters. Stop by the reconstructed camp buildings of the Wright brothers for a taste of "vacationing" on the Outer Banks in 1903.

Flying Objects - Get an introduction to early aviation history through gadgets and toys of flight; (wear tennis shoes, no sandals).

Kite Flight - a family activity of kite building and flying - or bring your own; (wear tennis shoes, no sandals).

Cleared for Take-off - Be up close and personal with a modern aircraft. Help make the pre-flight inspection required prior to take-off. (wear tennis shoes, no sandals)

Wrights After 1903 - Kitty Hawk was just the beginning. Follow the progress of Wilbur and Orville and their inventions after the first flight.

Fun In Flight - A family activity that explores the wonders of flight by constructing your own flying object. (wear tennis shoes, no sandals)

All programs except "Life at Kitty Hawk" begin at the visitor center. All programs are handicapped accessible and last 30 minutes.

Hey Kids!

Do You Have the Wright Stuff to Be a Flight Ranger?

Take the challenge and become a Flight Ranger at Wright Brothers National Memorial this summer. If you are from 5 to 13 years old, you can earn a Flight Ranger Patch by going to programs and completing a booklet about the Wright brothers and their famous flight. Check with any Ranger at the Wright Brothers Memorial to get the scoop. See you there!



wright brothers national memorial



Why Kitty Hawk?

by Bud Brown, Volunteer


Sun, sand, fishing, cool breezes and spectacular sunsets—the very things that attract thousands of visitors to the Outer Banks today also greatly appealed to Wilbur and Orville Wright. Not just for an ideal vacation, but also for “the purpose of making some experiments with a flying machine.”

The Wrights’ criteria for gliding experiments encompassed: 1) reasonably strong, steady winds, 2) open areas free from obstructions, 3) elevations from which to launch the glider and 4) soft

terrain on which to land.

Records from the United States Weather Bureau in Washington, D.C., revealed a likely location at Kitty Hawk, North Carolina. The Kitty Hawk Weather Station manager, J.J. Doshier, replied that the sandy beaches were wide and clear of obstructions and the winds blew steady from the north and northeast in September and October. Doshier prompted Captain William Tate, a county commissioner, postmaster and leading citizen of Kitty Hawk, to write a letter to the Wrights. In the letter, Tate wrote:

“You could for instance get a stretch of sandy land one-mile by five with a bare hill in center 80 feet high not a tree or bush anywhere to break the evenness of the wind current. . . . I assure you, you will find a hospitable people when you come among us.”

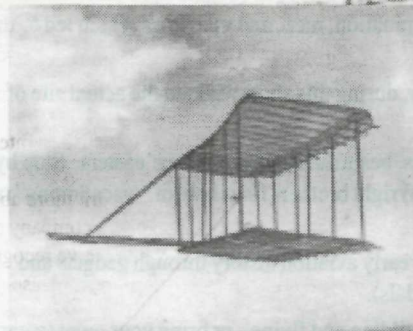
Though time has changed the Outer Banks, much of the beauty and appeal the Wright Brothers witnessed on their first visit in September 1900 still remains with us today. 

Tom Tate and a drum he caught, with the 1900 glider in the background.



Wrights’ Glider Fabric Sewn on Local Machine


by Fent Davis, Park Ranger



The Wright brothers’ 1900 glider.



Bill and Addie Tate with 1899 Kenwood treadle sewing machine used to modify the Wrights’ glider.

 The Wrights’ 1900 Glider, covered with a very expensive imported French sateen, was originally designed to be 18 feet in length. Prior to Wilbur’s departure from Dayton, the sateen was cut and sewn to cover the anticipated wing span. Wilbur planned on purchasing wood for the wings spars on the way to Kitty Hawk since spruce was more plentiful in the east and transporting 18-foot sections of wood from Dayton would have been very difficult.

Upon arriving in the east, Wilbur discovered spruce was unobtainable in Norfolk or Elizabeth City. Only white

pine in lengths no greater than 16 feet was available. Disappointed by the lack of suitable materials, he was forced to cut two-foot sections from the center of each pre-sewn wing covering. He spliced the two halves on Mrs. Tate’s sewing machine at Kitty Hawk. When Orville joined him several weeks later, they assembled the glider, tested it as a kite, and conducted a few manned glides.

After their experiments ended in 1900, the brothers offered the glider to Captain Tate. His wife noted the glider appeared to have unusually good fabric, more closely woven and much better than she


had seen in the local store. The fabric was stripped from the glider and later used to make dresses for the Tates’ two daughters, Irene and Pauline.

During an interview with National Park Historian Darrell Collins, Mrs. Pauline Tate Woodard, at the age 93 years, was asked if she still had her dress. She replied, “No, honey, we wore them out.” 

Hesitant Hostess

by Beverly Jones, Volunteer

Addie Tate, wife of the Kitty Hawk postmaster, quickly prepared a meal for Wilbur Wright, who had traveled the last two days of his long journey from Dayton without eating. She observed her guest, dressed neatly in fine store-bought clothing. He certainly was a gentleman.

As Wilbur ate, Addie observed the contrasts of their lives. She thought of her guest bed that sagged like a hammock. Surely this affluent man from faraway Dayton, who could afford to leave his employment and pay the high costs of travel, would not want to stay in her home! Her concerns were spoken in soft tones to her husband. Wilbur, overhearing the conversation, reassured his hesitant hostess of his gratefulness. He would be happy to be their house guest and he insisted on paying for his room and board. Thus began a long and dear friendship. 

The Tates’ Home

The Wrights stayed with the Tates in 1900 until they could set up their own camp.



wright brothers national memorial



New Museum & Learning Center Planned

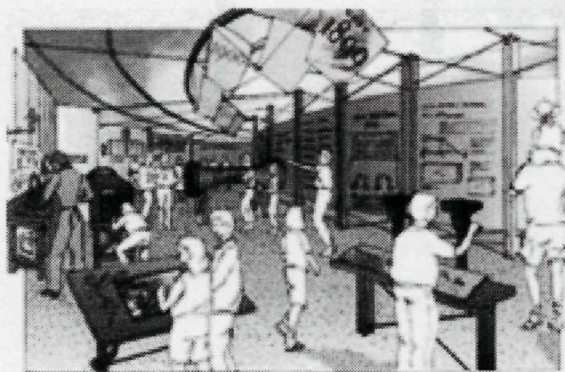
by Mary Doll,
Superintendent, WRBR

The Wright Brothers National Memorial commemorates the work of the Wright brothers and serves as a reminder of our possibilities as individuals. The dream of flight realized by the Wright brothers at this site in 1903 changed the world forever.

Inspired by the centennial of flight in 2003, millions of people will journey to Wright Brothers National Memorial over the next several years. Soon, those visitors will be greeted with a much improved facility and an exciting new museum. It will be a great improvement over the current facility and something we can be proud of as we showcase this important event in our nation's heritage.

The First Flight Centennial Foundation and the National Park Service are partners in restoring and preserving the National Historic

Register-listed Wright Memorial Visitor Center and constructing a new, adjacent Museum and Learning Center, which will improve the educational and inspirational experiences of visitors. The National Park Service



will rehabilitate the historic building and infrastructure. The Foundation is raising funds for architectural and exhibit design, construction of the new Museum and Learning Center and installation of state-of-the-art exhibits. The new Museum and Learning Center will provide an exciting experience for people of all ages. State-of-the-art interactive exhibits will bring the achievements of the Wright brothers to life and allow visitors to immerse themselves in the time and place of the Outer Banks of 1903.

Are Things As They Seem?

After hours cramped in a car, visitors burst into the parking lot at Wright Brothers Memorial to find one of the few large open spaces other than the beach. Wouldn't it be great to race through the cool green grass on a sunny day?

A closer look reveals a remarkable variety of native Outer Banks plants. The more obvious, especially when blooming, are seaside evening primrose, wild portulaca, catbrier, beach heather, horse nettle, gaillardia, sneezeweed, blue-eyed grass, buttonweed, trumpet vine, butterfly pea, stinging nettle, blue toadflax, and coral honeysuckle. Wear shoes and stay on the paths to look for them, or you will quickly and painfully find two more species: prickly pear cactus and sandspur.



Sandspur
(*Cenchrus tribuloides*)
is found from New York to Louisiana in sandy areas along the coast. It has sharply pointed 1/4 inch seed burs which spread by tagging along with passersby.



Prickly Pear Cactus
(*Opuntia* spp.)
has up to 4 inch long spines per leaf notch. It spreads by pieces sticking to you until you pick them off.

The First Flight Centennial Foundation:

Preparing for the 100th Anniversary of Flight

by Julie Ketner Rigby, Director of Development

With the centennial anniversary of the Wright brothers' first flight coming up in 2003, the First Flight Centennial Foundation is working hard to make plans and raise funds for the event. The Foundation, a nonprofit, tax-exempt corporation, was formed to commemorate the 100th anniversary of the Wright brothers' flight and North Carolina's role in this historic event. The Foundation's achievements to date include:

- National Park Service Partnership: Our partnership with the park service will help to improve facilities and plan events in preparation of the 2003 centennial.
- Leadership of the Foundation: Former President George Bush is the National Honorary Chairman; Richard T. Howard of Greensboro, North Carolina, is President; and Thomas H. Boggs Jr., of Patton Boggs in Washington, D.C., is Chairman of the Campaign Steering Committee.
- Commemorative Coin: The U.S. Mint will produce a coin for 2003

honoring the Wright brothers and their achievement. Surcharges from the coin will benefit the Foundation and our objectives to improve the Wright Brothers National Memorial.

• New Museum and Learning Center Underway: The Foundation engaged the services of Moser, Mayer Phoenix, P.A. and Christopher Chadbourne and Associates to work on the architectural and exhibit design for the new museum at the Wright Brothers National Memorial.

• Initial Funding: Early donor support of more than \$1 million has enabled the development of a number of programs and partnerships. More importantly, we've completed our first project—restoring the

Wright Monument at Wright Brothers National Memorial to its original grandeur and relighting the beacon.

The Board of Directors has authorized the start of the Rise to

the Occasion Campaign, an effort to raise nearly \$13 million to prepare for this event. To support this campaign, please contact us at (919) 840-2003, or send your gift to First Flight Centennial Foundation, P.O. Box 80337, Raleigh, North Carolina, 27623. All donors will receive a tax receipt, and your support will be gratefully received and wisely invested in this important initiative. To learn more about how you, your family, your company or other organizations can receive recognition for major gifts to this project, please contact us.

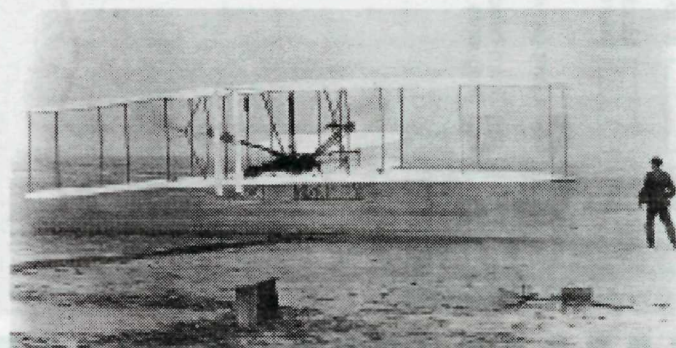


2000 -- The Centennial of the Kitty Hawk Connection

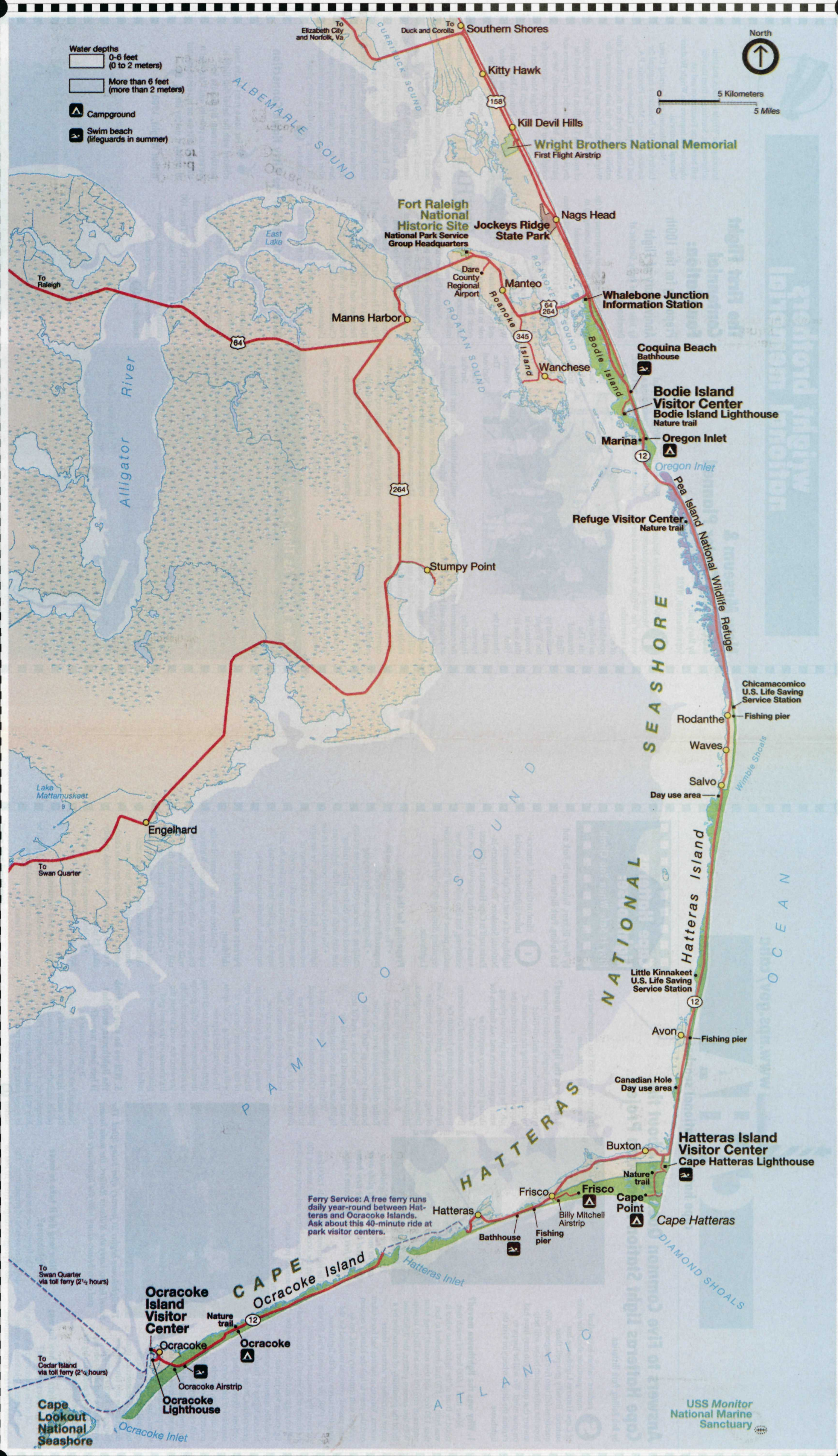
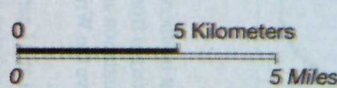
Three years from now, the world will celebrate the centennial of one of the greatest events of the 20th century — the first successful powered flights at Kitty Hawk. The Wright brothers' vision, their desire and their compelling story soared over the sands of Kitty Hawk. There, 100 years ago in 1900, two visionary men embarked on an unthinkable journey — that proved flight was possible to humankind.

“ For some years I have been afflicted with the belief that flight is possible to man. My disease has increased in severity and I feel that it will soon cost me an increased amount of money if not my life.”

Wilbur Wright, 1900



- Water depths**
- 0-6 feet (0 to 2 meters)
 - More than 6 feet (more than 2 meters)
- Campground
 - Swim beach (lifeguards in summer)



Ferry Service: A free ferry runs daily year-round between Hatteras and Ocracoke Islands. Ask about this 40-minute ride at park visitor centers.

To Swan Quarter via toll ferry (2 1/2 hours)

To Cedar Island via toll ferry (2 1/4 hours)

USS Monitor National Marine Sanctuary



www.nps.gov/caha

CAHA

cape hatteras national seashore

Answers to Five Common Questions about the Cape Hatteras Light Station Relocation Project

by Rob Bolling, Park Historian

Seashore visitors have asked many questions about the move of Cape Hatteras Lighthouse last summer. Broadly grouped, these questions fell into five categories. We hope the information below will help answer that question you may have had on your mind. We will be happy to explain the details when you visit the lighthouse.

1. Why was the lighthouse moved?

More than 1,600 feet of beach that stood in front of the lighthouse when it was built in 1870 had dwindled to less than 120 feet, and this natural long-term pattern of erosion was not likely to stop. With this erosion pattern, the lighthouse faced the possibility of destruction by a major hurricane or series of lesser storms. Various measures had been taken over the years to halt the island's erosion process with temporary relief, but as time passed, concerns mounted for the long-term survival of the lighthouse.

In 1988, the National Park Service received the results of a National Academy of Sciences lighthouse study, which suggested that relocating the lighthouse was the best available measure to secure its historic legacy for future generations. None of the other options offered a higher standard of long-term cost effectiveness, reliable protection or compatibility with coastal management, environmental and historic preservation laws. The study gave particular attention to the worst-case scenario: In its original location, the lighthouse faced destruction from a direct hit by any future major hurricane. Such a scenario would have had an 80 percent probability of undermining the lighthouse foundation.

2. From where and how far was the lighthouse moved?

All of the structures included in the Cape Hatteras Light Station were relocated 2,900 feet to the southwest.



The Cape Hatteras Lighthouse and its move platform glide over the travel beams to the new home 1,600 feet from the ocean's edge.

The lighthouse now stands 1,600 feet from the ocean, affording it another 100 to 125 years of time and protection from erosion processes.

Photo by Mike Booher



The lighthouse begins its journey after being lifted. The travel beams carry the Hillman Rollers, the main beams and cross beams along with the lighthouse above.

3. How long did it take to move the lighthouse?

The lighthouse was moved in 23 days after months of preparation. The rate of progress ranged from 10 feet on

the first day to 355 feet on another day en route to its destination.

4. How was the lighthouse moved?

The move largely involved various types of steel beams and oil-filled hydraulics, providing the elements of support and movement to perform the job. The preparations involved placing steel support towers and oak timbers for shoring (temporary support) as foundation stone was removed. Eventually, mainbeams and crossbeams were arranged directly beneath the lighthouse to form a grid platform. A set of large beams arranged in a box-like fashion, collectively called a strongback, unitized the crossbeams and mainbeams.

Roller beams made up the track upon which the lighthouse traveled. Roller dollies passed over the roller beams and served as "feet" for the lighthouse. From below, a mat of steel beams supported the load of the lighthouse and move equipment.

Within the main beams of the grid platform, 100 hydraulics were arranged to form a unified jack system. These corrected the expected tilt (left or right, backwards or forwards) that occurred during the move, while adjusting from lower to higher elevations (down or up) of the relocation corridor as well as traversing "soft" spots. The hydraulics kept the lighthouse precisely level along three dimensions. Other groups of hydraulics called push jacks provided the work to slide the lighthouse, on the steel grid platform and rollers, down the roller beams.

5. Will we be able to climb the lighthouse, now that it has been moved?

By midsummer the National Park Service plans to reopen the entire light station grounds to the public, including the lighthouse. The completion of the project's Phase 2 by July will adjust the service road leading to a new parking lot and public comfort station.

Cape Hatteras Lighthouse:

Play It Safe When You Climb

by Mary Dickens, Volunteer-In-Park and Rob Bolling, Park Historian

Climb to the top of America's tallest lighthouse is a special highlight of a visit to Cape Hatteras National Seashore. The Volunteers-In-Parks staff at Cape Hatteras Lighthouse wants to be sure that your visit is not only satisfying, but also *safe*. To ensure your safety, please be aware of the restrictions regarding climbing the Cape Hatteras Lighthouse.

Preparing for the climb:

- The stairway is narrow, so be prepared for two-way traffic.
- Backpacks used for carrying children or for any other purpose are not allowed due to the low gallery railing that surrounds the top of the lighthouse.
- No food or drink is permitted in the lighthouse. Before climbing, we strongly recommend that you drink plenty of water and have a snack to provide energy. It is strenuous to climb the 257 steps to the gallery level, especially during hot, humid summer days.

Parents and guardians with children:

- Children may not be carried to the top under any circumstances. While on the gallery with children who are able to walk up on their own, crouch down to talk to them rather than lifting them up.
- Children shorter than 38 inches tall will not be admitted. Parents with small children should consider taking turns climbing the lighthouse, having one parent stay below while the other climbs. A round-trip to the top and back usually takes 15 minutes.
- Children younger than 12 must be accompanied by an adult.

Entering and climbing:

- Video and photo cameras should be secured with straps around the neck or wrist at all times.

(continued next page)

cape hatteras national seashore



Visible Shipwreck Remains

In days gone by, the wooden sailing ship kept the nation's commerce afloat. Thousands of vessels carrying goods and passengers passed near the Outer Banks as they voyaged north in the Gulf Stream or south by way of the Virginia Coastal Drift, a branch of the Labrador Current.

Riding the southbound Labrador Current, captains often steered vessels fearfully close to Cape Hatteras to avoid getting caught in the Gulf Stream. As they approached, dangerous shoals awaited. Diamond Shoals are a group of shallow, submerged sandbars protruding ten miles seaward from the cape. If stormy weather appeared or navigational mistakes were made, ships often ran aground on the shoals. Powerful waves and wind also drove hundreds of vessels along Outer Banks beaches through the years, breaking them apart and spreading their remains along the shores.

Today, there is little visible evidence of past wreckage on the beach. Restless waves have worn the wooden remains. Shifting sands have buried the timbers, and the ocean has engulfed the deteriorated hulls.

The same natural dynamics that claimed the wrecks can also expose these relics from the past, but only briefly. Storms rearrange the beach face,

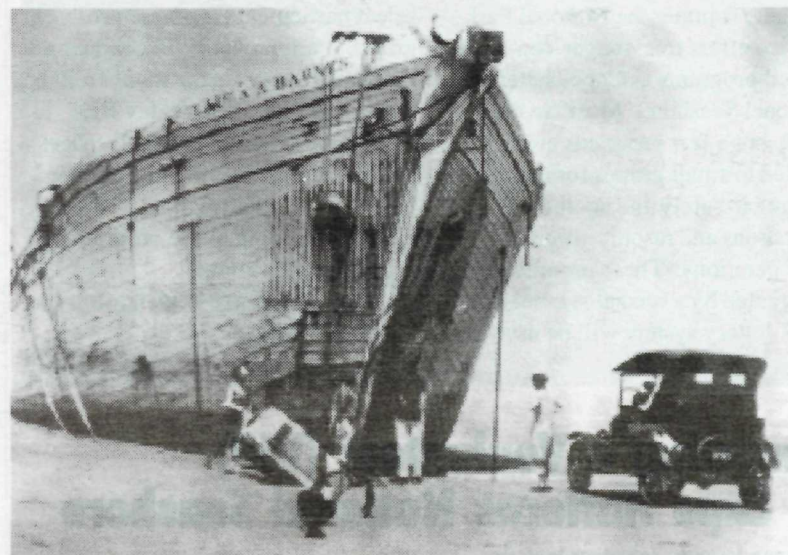
occasionally revealing forgotten ship remains buried years ago. Heavy seas scouring the ocean floor sometimes toss hull fragments onto the beach.

A major storm in 1991 left 11 wrecks exposed on National Seashore beaches on Ocracoke Island. The largest segment measured 64 feet in length. The North Carolina Underwater Archeological Unit documented the wrecks but was unable to identify the individual shipwrecks with any certainty. Most of these wood remains have slipped away beneath drifting sand or have been reclaimed by the sea.

Visitors to Cape Hatteras National Seashore are reminded that federal laws protect all artifacts found within National Parks, including shipwrecks. It is illegal to collect or damage them in any way. When tags are found on a shipwreck, it has been reported and documented. Contact a ranger if you believe that an old shipwreck has not been documented, or if you suspect individuals among these sites are committing violations.

Some Observable Wrecks in the Seashore

1. The boiler from the Civil War-era Federal troop transport ship *Oriental*




The wreck of the schooner *Laura A. Barnes*, shown in 1921, can still be seen at Coquina Beach on Bodie Island.

can be seen in the surf across from the Pea Island National Wildlife Refuge Visitor Center.

2. The remains of another vessel are occasionally seen along the beach at the village of Hatteras, one-quarter mile north of Ramp 55.

3. Sections of an unidentified

wooden wreck are sometimes visible north of the beach parking area across the highway from the Ocracoke pony pen.

4. The wreck of the *Laura A. Barnes* can be seen at Coquina Beach on Bodie Island. 


(continued previous page)

- The lighthouse will close at the discretion of the staff in the event of bad weather, such as high winds, rain or lightning.

- All visitors, regardless of disabilities, are allowed to climb, provided they ascend under their own power without unduly impeding traffic.

The following items and behaviors are not permitted in the lighthouse:

- Running or race-walking
- Heels taller than 1½ inches
- Pets
- Smoking
- Loose objects and extraneous items such as umbrellas, throwing or flying toys, tripods, crutches, walkers and other items at the discretion of the volunteers.

The public visitation season for the Cape Hatteras Lighthouse is from approximately mid-April to mid-October. During the summer months, visitation hours for climbing the Cape Hatteras Lighthouse are 10 a.m. to 4 p.m. daily. During the spring and fall seasons, visitation hours are 10 a.m. to 2 p.m. daily. The lighthouse may close at any time if the availability of volunteers is insufficient or if weather conditions are unsafe for public visitation. 

Teach a Child to Fish

Windsor Jacques, Volunteer-In-Park;
Member, Cape Hatteras Anglers Club

Fishing has always been an important part of my life. When I was a boy, my family lived in a seaside area and I fished from the end of a street, from a rowboat and on the beach with my father. So I was pleased when I was asked to assist with the Fish with a Ranger program at Cape Hatteras National Seashore. The program is special to me because it is a partnership that combines the skills and resources of Cape Hatteras Anglers Club members with the assistance of National Park Service interpretive staff.

The fishing equipment—conventional spinning rods and rigs—was purchased and donated by the Cape Hatteras Anglers Club with additional sponsorship from the Daiwa Corporation. Members of the Cape Hatteras Anglers Club maintain the equipment and present the program to park visitors from mid-June through mid-August.

The program is popular, so participants are usually selected by lottery drawing the day before it is held. Several groups go away from the lottery a little disappointed (*see note below), but we have only so much equipment to share and the group size must be a safe number for us to handle. The participants are given instructions to prepare for the program, such as safety notes and what bait to bring. We meet the next morning on the beach at 8 a.m. sharp and fish until 10 a.m.

In the beginning, when I agreed to help, I had imagined myself extending the joys of fishing to groups of young boys. Was I surprised! I found myself explaining the joys and skills of fishing to people from all backgrounds and ages. Parents brought children so small they could hardly hold the poles. Older people came too. One woman in her late 60s was an unforgettable participant. I enjoyed meeting several couples in their 40s and 50s as well. They all came to the beach in

the early morning to learn to fish, and all of them wanted me to show them how to increase their enjoyment of the beach and their Cape Hatteras vacation. I showed them how to bait their hooks, then smiled at the “ughs” that resounded down the beach.

When a participant catches a fish, there is great excitement. The park rangers provide small tokens for the first catch each morning. Usual fish catches include sea mullet, small blue fish, flounder, spot and croaker. The experience of sharing my enjoyment of fishing was a new one, but I'm hooked—I can't wait to do it again this summer.

* If you are unsuccessful at the lottery drawings for the chance to attend the Fish with a Ranger program and you wish to explore recreational surf fishing, local tackle shops have equipment available to rent with all of the advice and practice you need to get started.

cape hatteras national seashore



Program Lottery Drawing

Lottery System Used for Some Programs

Each summer the National Park Service offers free, ranger-conducted programs at Cape Hatteras National Seashore. Most are open to all, but a few programs are limited to small groups for reasons relating to safety and equipment limitations and resource impact considerations. These programs are designated by a special symbol (L).

A lottery system will be used to

select participants for these programs. Park rangers will conduct a random drawing (using numbered tickets) at **5:00 PM** the day **BEFORE** the program to fill all spaces available. Lottery drawings will be held at the Hatteras Island Visitor Center according to the program schedule listed above.

There is no pre-registration for the lotteries.

Becoming a Volunteer (VIP) at Cape Hatteras National Seashore

by Lynne Jacques, Volunteer-In-Park

When my husband and I retired to Hatteras Island, friends said, "We know you will love it, Windsor, but what is Lynne going to do?" As a retired librarian with an interest in history, I felt my options were limited. I had previously enjoyed volunteering on weekends at a museum gift shop and learned a great deal of local history. After our move, I arranged our house furniture several times, tormented the local library staff and set up an herb garden. Then I began searching for a new hobby or volunteer opportunity.

I explored what opportunities were available with Eastern National Bookstore at the Hatteras Island Visitor Center. I staggered home hours later, having acquired a part-time job in the bookstore and bringing Volunteer-In-Park forms for my husband and myself. The training session was the next day. I hated heights and wondered how I could work at the lighthouse.


It all worked out just fine. After the training class I agreed to volunteer at the bottom of the lighthouse. We learned a great deal about the lighthouse and the island. We met many new people, volunteers, ranger staff and park visitors.

The first summer went by like a dream. As winter arrived, I volunteered for desk duty in the visitor center, acquiring a new range of communication skills. Spring came with a new opportunity. I played a video and answered questions about one of the last families to live at the lighthouse. I added this

challenge to my information desk and lighthouse volunteering and my day at the bookstore. My life was almost too full.

A new volunteer challenge began last summer. The lighthouse was going to be moved. As the engineering staff and the moving group arrived, we volunteers asked questions and tried to understand all of the technology involved. It seemed the world was focused on little, remote Hatteras Island. Over 1.3 million visitors and press arrived from all over the globe. During this historic time, everyone followed the lighthouse as it was slowly pushed down the path. The park provided shelter at the fence. Trails were blazed as the lighthouse moved away from close view.

Volunteers put in many hours around the moving zone and answered many questions. Visitors surrounded each volunteer every day. Sand blew, and the heat was incredible. After the lighthouse arrived at its new location, we were all there to celebrate.

As I write this article, the quiet months of winter are here again. My husband and I staff the information desk at the temporary visitor center each week. I still work one day a week at the bookstore. Our fourth summer of being VIPs at the park is just around the corner. What new opportunities will it bring? We're not sure, but we know it will be new, there will be more change and it may be unpredictable. But I am sure we will enjoy it more than ever. 

Pea Island National Wildlife Refuge

2000 Spring and Summer Programs

*begin May 1

**begin mid-June

*Bird Walks

Whether you're a beginner or an expert, you'll enjoy this casual stroll around North Pond. Field guides, binoculars and insect repellent recommended.

8:00 - 9:30 am Tuesday, Thursday, Friday
Meet at Pea Island Visitor Center, 3.5 miles south of Oregon Inlet.

**Children's Wildlife

Discovery

Kids can discover through hands-on exploration of the Pamlico Sound. Wading shoes, insect repellent and sunscreen recommended. Children must be accompanied by an adult.

10:30 to noon Thursday
Meet at New Inlet, 6 miles south of Oregon Inlet.

*Guided Canoe Tours

Explore the marshes, islands and creeks of Pamlico Sound. Wading shoes, sunscreen and drinking water recommended. \$30.00 adults \$15.00 children 12 and younger. Reservations required: (252)987-2394

10:00 - 1:00 PM Tuesday, Thursday
Meet at New Inlet, 6 miles south of Oregon Inlet.

**Family Canoe Tours

Just like the regular tours, only shorter, cheaper, and more flexible to accommodate children! Reservations required: (252)987-2394

\$15.00 adults
\$7.50 children 12 and younger
10:00 - 11:30 am Friday
Meet at New Inlet, 6 miles south of Oregon Inlet.

**Feathered Friends

Discover through games, crafts, observations and hands-on explorations. Sunscreen, insect repellent and a sense of fun are recommended. Children must be accompanied by an adult.

Wednesday 9:00 - 10:30 am
Meet at the Pea Island Visitor Center, 3.5 miles south of Oregon Inlet.

**Turtle Talk

Learn about the giant loggerhead sea turtles and other turtles that live off our coast.

Monday and Wednesday 11 am to noon.
Meet at Visitor Center.

Alligator River National Wildlife Refuge

2000 Spring and Summer Programs

*begin May 1

**begin mid-June

**Evening Program

As the sun sets and the temperatures cool, much of the refuge wildlife comes alive. Insect repellent and a flashlight recommended. After the talk, you'll have an opportunity to ride the wildlife drive and observe the evening critters!

6:00 - 7:00 PM Thursdays
Meet at Creef Cut Trail Head on US 64, approximately 4 miles west of the 264/64 split, on the way to East Lake.

*Guided Canoe Tours

The Milltail Creek Canoe Trail System takes you deep into the wilds of the Alligator River National Wildlife Refuge. Hats, sunscreen, water, insect repellent and wading shoes are recommended. Reservations required: (252) 987-2394

\$30.00 adults
\$15.00 children 12 & younger
10:00 - 1:00 PM Wednesday and Friday
Meet at the south end of Buffalo City Road, off US 64, in East Lake

Unless indicated above, all programs are free and require no preregistration

cape hatteras national seashore



Bodie Island, Hatteras Island & Ocracoke Island Visitor Centers

Open Daily Year Round
9AM - 6PM May 28 - September 2 • 9AM - 5PM September - May

The programs listed below are offered from mid-June through mid-August. Additional programs may be offered weekly. Check at each visitor center for a complete schedule.

Bodie Island Visitor Center

PROGRAM LOCATIONS: (A) back porch of the Visitor Center, (B) Coquina Beach, (C) Bathhouse at Coquina Beach, (#) Bring Bait (chicken necks, fish), (x) program is handicap accessible.

Program	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Morning Beach Walk (B) 1 hour				8:00			
Catchin' Crabs (A) (#) 1 hour 30 minutes			9:00		9:00		
Especially for Kids (A) (x) 1 hour 45 minutes			2:00	10:30			
Creatures of the Deep (C) (x) 1 hour 30 minutes		4:00			2:00		
Sentinel of the Shore (A) (x) 1 hour 20 minutes	4:00	1:00 & 2:30	10:00 & 1:00	1:00	10:00 & 1:00	11:00 & 2:00	1:00
Hurricane! (A) (x) 30 minutes	2:00		4:00				
Bodie Island Beasties (C) 45 minutes					3:00	9:00	3:00
Sea Life Prints (C) 1 hour		10:00			4:00		
Shell Dwellers (C) 45 minutes				2:00		3:30	
Turtle Talk (C) 45 minutes			3:00	4:00			
Evening Campfire (B) 1 hour				8:30			

Hatteras Island Visitor Center

PROGRAM LOCATIONS: All programs are presented at the Hatteras Island Visitor Center unless noted as follows: (A) Parking area across from Cape Point Campground, (B) Beach Access Ramp 43 Parking Area, (C) Hatteras Inlet Coast Guard Station, Hatteras Village, (L) Lottery Program, (X) program is handicap accessible.

Program	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Morning Bird Walk (A) 1 hour 30 minutes				7:30			
Morning Beach Walk (B) 1 hour					10:00		10:00
Fish with a Ranger (L) 2 hours			8:00		8:00		
Coast Guard Station Visit (C) 1 hour						10:00	
Move of the Century (x) 20 minutes	4:00	11:00	11:00 & 4:00	11:00 & 4:00	11:00 & 4:00	11:00	4:00
Especially for Kids (B) (x) 45 minutes		10:00		9:00		4:00	
Seining the Salt Marsh (L) 1 hour				2:00			
Sentinel of the Shore (X) 30 minutes	10:00			10:00	10:00		
The Lifesavers (X) 30 minutes	11:00			3:00			3:00
Torpedo Junction (C) 30 minutes	3:00				3:00		11:00
Hurricane! (X) 30 minutes		3:00	3:00			10:00	
Evening Campfire (B) 1 hour		8:30		8:30			
Program Lottery Drawing		5:00	5:00	5:00			

Ocracoke Island Visitor Center

PROGRAM LOCATIONS: (A) Visitor Center Amphitheater, (B) Campground Beach, ramp 68, (x) program is handicap accessible.

Program	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Morning Beach Walk (B) 1 hour				8:00			
Especially for Kids (A) 45 minutes				3:45	9:45		
Ocracoke History (A) (x) 20 minutes	1:45	9:45 & 1:45	9:45 & 3:45	10:45	10:45	9:45	1:45
Pirate Times (A) (x) 20 minutes	3:45	3:45	1:45		11:45 & 1:45	1:45	3:45
Cross-Town Walk (A) 1 hour			9:00	2:00		3:45	
Torpedo Junction (A) (x) 30 minutes			11:45		4:45		
The Lifesavers (A) (x) 30 minutes					2:45		
Evening Campfire (B) 1 hour				8:30			

Summer 2000 Programs

Bodie Island Beasties - Take a close up look at the creatures of the beach and sand dunes.

Catchin' Crabs - (Bring bait - fish or chicken parts - and wear wading shoes) Participants 13 and younger must be accompanied by an adult. Learn the art of catching and a bit about blue crabs.

Coast Guard Station Visit - Join United States Coast Guard personnel for an escorted tour of a modern Coast Guard Station operation.

Creatures of the Deep - Learn about some of the Seashore's harder-to-see visitors, such as whales and dolphins.

Cross-Town Walk - Accompany a Ranger through the village of Ocracoke for an up-close look at the heart of this historic community.

Especially for Kids - A family activity program designed to learn about a variety of aspects of the seashore. Programs vary in content.

Evening Campfire - Spend an evening with a park ranger and hear stories of the Outer Banks. Topics may include shipwrecks, sea turtles or pirate tales. Bring a beach chair and repellent. Evening beach breezes may be cool, so consider bringing a blanket.

Fish With A Ranger - Join enthusiasts from the Cape Hatteras Angler's Club to learn the art of surf fishing in one of the hottest fishing spots on the East Coast. We have poles, but you bring bait. An adult must accompany participants 13 and younger during this program. **LOTTERY PROGRAM - program is limited to 15 participants.**

Hurricane! - Are you prepared? Discover how nature's most violent storms have shaped and reshaped lands and lives along the Outer Banks.

Island View - Learn how nature forms these barrier islands, and how humans adapt to these forces.

Morning Beach Walk - Explore an ever-changing world of surf and sand.

Morning Bird Walk - More than 350 species of birds have been seen on the Outer Banks.

Birders from the Cape Hatteras Bird Club will guide you along some favorite viewing areas. Some spotting scopes and binoculars are provided. Bring insect repellent. Not recommended for children.

Move of the Century - Learn why it was deemed necessary to move the lighthouse for its long-term survival, and how the relocation was done.

Ocracoke History - Join us for an historical adventure of pirates, shipwrecks and other stories from Ocracoke.

Pirate Times - Yo-ho Mateys! Come hear tales of Blackbeard and other notorious pirates of the Outer Banks.

Sea Life Prints - Bring a T-shirt to decorate with ocean art!


Seining the Salt Marsh - Learn to use a seine net and discover what animal and plant communities thrive in and around Pamlico Sound. Wear wading shoes (tennis or surf shoes, NO SANDALS) and clothing. An adult must accompany participants 13 and younger during this program. **Lottery Program - Program is limited to 10 participants.**

Sentinel of the Shore - A discussion of lighthouses, covering the U.S. Lighthouse Service's efforts to construct and care for them. Learn the reasons why they were built, and a glimpse into their future.

Shell Dwellers - Find out who really makes those beautiful shells you find along the island - and why!

The Lifesavers - Examine the heroic deeds of United States Life-Saving Service personnel along these shores.

Torpedo Junction - In early 1942, almost a ship per day was sunk off American shores by U-boats of the German Navy. Hear the true tales of war off the East Coast.

Turtle Talk - Join an expert naturalist to "talk turtles" at Coquina Beach. 



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CALO

cape lookout national seashore

American Oystercatchers

The American oystercatcher, with its large, orange, cigar-like bill and dark body with white underparts and pink legs, is almost impossible to miss. Standing some 18.5 inches tall, the shorebird nests anywhere on the beach from the berm to sand dunes. Its nesting behavior ranges from solitary to semi-colonial (nesting in loose-knit groups).



In 1999 there were approximately 60 pairs of American oystercatchers at Cape Lookout. Nesting started in late April and continued through August, and there were more than 90 nesting attempts recorded. However, many nests were lost to flooding and predation from feral cats, raccoons and gulls. Eleven nests were estimated to have hatched, but only eight chicks were known to fledge.

A word of caution to vehicle drivers on the beach: American oystercatcher chicks often forage on the beach at night. Chicks become disoriented when vehicle lights approach and they go directly to the light. They also have a tendency to hide in tire ruts, where you may not be able to see them. The only sign of their presence may be an adult acting aggressively toward humans. If you see an adult bird acting strangely, such as constantly calling or flying along beside a vehicle, it may be trying to protect her chicks. Proceed with caution.

The Cape Lookout Lighthouse

It is supposed there is no part of the American Coast where vessels are more exposed to shipwreck, than they are in passing along the shores of North Carolina, in the neighborhood of those shoals.

— from an 1806 report to U.S. Congress

The treacherous waters of the North Carolina coast have been called the Graveyard of the Atlantic, and hundreds of shipwrecks along this coast stand in quiet testimony to that name. The Cape Lookout Lighthouse was one of the sentinels constructed to help guide ships through the treacherous water and dangerous shoals along this coast.

The first Cape Lookout Lighthouse was built in 1812 after Congress allotted money for a 96-foot brick tower inside a wood frame. The boarded exterior was shingled and painted with red and white stripes. However, this tower was not tall enough to be an effective beacon, and there was a problem with drifting sand that built up around the tower's base. Additional funds were allocated in 1857 for the construction of a

second, taller lighthouse and new keepers' quarters. The 169-foot lighthouse you see today was first lighted on November 1, 1859, and became the prototype for all subsequent lighthouses on the Outer Banks. In 1873 the tower received its distinctive black and white diagonal checkerboard pattern. Today, the keepers' quarters building serves as a visitor center for Cape Lookout National Seashore. Stop and visit Cape Lookout Lighthouse and discover how important the role of lighthouses was in our nation's history. Owned and operated by the U.S. Coast Guard, the lighthouse is considered an active working navigational aid and is not open to the public. The signal is now automated and is on 24 hours a day with a 15-second flash interval.

The Cape Lookout Studies Program

by Keith Rittmaster and Lynn Barker

The Cape Lookout Studies Program provides overnight environmental education learning opportunities at Cape Lookout National Seashore. Program activities are centered around the museum field station, the 1917 former U.S. Coast Guard Station located on South Core Banks, approximately two miles south of Cape Lookout Lighthouse. Participants learn about North Carolina's coastal habitats and their inhabitants during field-oriented excursions to South Core Banks and Shackleford Banks and the surrounding waters of the Atlantic Ocean and Lookout Bight.

Every year since 1990 about 200 participants, ranging in age from elementary-school students to senior citizens, have signed up for the overnight programs managed by the North Carolina Maritime Museum and Friends of the Museum. Participants sign up for programs offered through the Maritime Museum's quarterly calendar or they custom design an overnight program to fit their own specific educational needs. Program staff are actively involved with a number of efforts that support local conservation efforts and enhance program content, including NOAA's Marine Mammal Stranding Network, long-term bottlenose dolphin research, N.C. Wildlife Resources Commission's Sea Turtle Stranding Network, and the Center for Marine Conservation's Marine Debris Monitoring Program. They also collaborate with Cape Lookout National Seashore resource managers and education and maintenance staff.

To learn more about the Cape Lookout Studies Program, contact Keith Rittmaster, Natural Science Curator, c/o North Carolina Maritime Museum, 315 Front Street, Beaufort, NC 28516; (252) 728-7317; kritt@coastalnet.com.



cape lookout national seashore



U.S. Coast Guard Station, Cape Lookout, NC

by Richard Meissner

The Coast Guard Station at Cape Lookout was built in 1917 to replace the 1888 U.S. Life Saving Station. The Chatham-style building is the only remaining one of its type in North Carolina. The station complex includes a cookhouse ("summer kitchen") that was built in 1917; an equipment building, built in 1940; and other small storage buildings. The Coast Guard crew continued the tradition of heroic rescues established by the Life Saving surfmen, and this station was especially important during World War II. However, with modern advances in shipping and lifesaving, the Coast Guard transferred the protection of the Cape Lookout area to the Fort Macon U.S. Coast Guard Station, and the Cape Lookout Station was officially decommissioned on June 10, 1982.



Due to its relative isolation, the Chatham-style station building has never been significantly altered. The Cape Lookout U.S. Coast Station is listed on the National Historic Register. The Park Service is in the process of restoring the exterior of the primary buildings. During the summer of 1998, aluminum siding and modern additions were removed, repairs were made to the exterior, and the buildings were painted. Roof and window replacement will follow in the park's efforts to restore this important part of Cape Lookout National Seashore.





O B G P N

outer banks group park news

Welcome to Hurricane Season

from June through November, certain weather conditions can combine in the Atlantic Ocean to create tropical storms and hurricanes. As you begin a vacation along this coast, you must be aware of the damage potential and danger of these storms. The North Carolina coast has seen its share of hurricanes in recent years, and some scientists predict the Atlantic coastlines will see increased hurricane activity over the next few decades compared to the last 30 years.

Roughly defined, a hurricane is a low-pressure system that develops over warm water with organized thunderstorm activity (convection) and surface wind circulation. If these winds are sustained from 39 to 73 miles per hour, it becomes a tropical storm. If the winds are sustained at 74 miles per hour or greater, the storm becomes a hurricane. Winds from a hurricane blow in a large spiral around a calm center—the “eye” of the storm. The eye is generally 20 to 30 miles wide, and the storm may have a diameter of 400 miles.

On average each year, 10 tropical storms develop over the Atlantic Ocean, Caribbean Sea or Gulf of Mexico. Of these storms, six become hurricanes. While most of the storms remain over the ocean, on average five hurricanes strike the United States coastline every three years. Of these five, two are major hurricanes.

Hurricanes bring destruction to coastlines and islands in their path. Heavy surf on an otherwise balmy day may indicate a far-away hurricane in the ocean. As a hurricane approaches, the skies darken, the air feels more humid and winds grow in strength. Torrential rains, high winds and storm surge occur as the storm nears land.

The greatest threat from a hurricane’s winds is their cargo of debris—a deadly barrage of flying missiles such as lawn furniture, signs, roofing and siding. More dangerous than a hurricane’s high winds is its storm surge—a dome of ocean water surround-

Wright Brothers Visitor Center Recognized as Significant Modernist Architecture

By Darrell Collins, Park Service Historian, WRBR

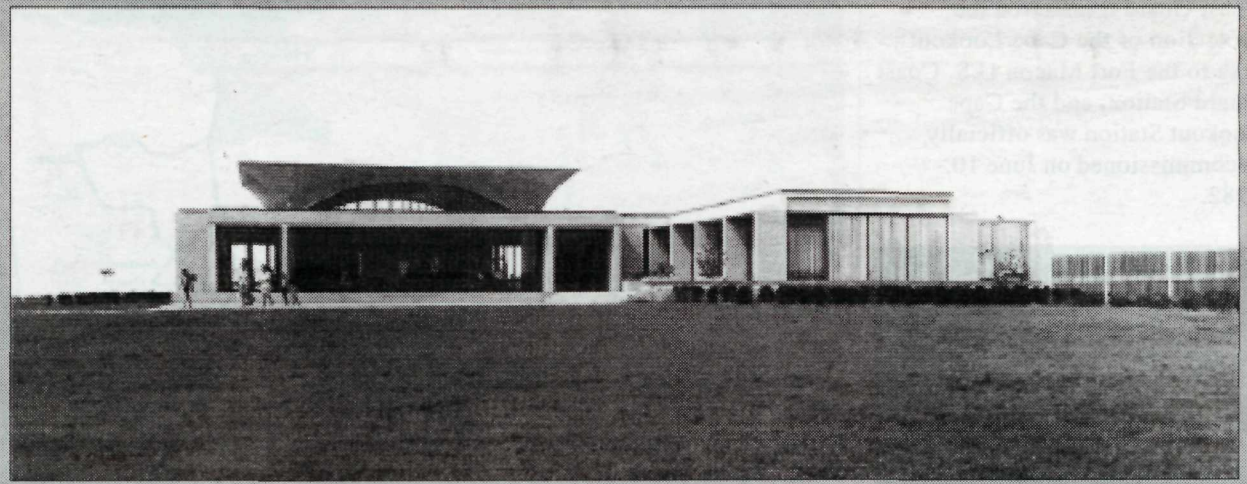
The Wright Brothers National Memorial Visitor Center is one of only a handful of examples of modernist architecture built in eastern North Carolina during the 20th century. The modernist movement in North Carolina, which found its principal expression in the cities of the Piedmont, exerted less appeal in eastern North Carolina communities. Few clients in eastern North Carolina had the financial resources to hire an up-and-coming architectural firm from outside the region.

National Park visitor centers were first developed as part of the National

Park Service’s “Mission 66” program, a ten-year campaign beginning in 1956, to improve facilities in national parks. Mission 66 visitor centers like this building were constructed to provide up-to-date facilities and interpretation to a growing number of park visitors. Designed by the newly formed Philadelphia architectural firm of Ehrman Mitchell and Romaldo Giurgola this structure was a key work in the emerging “Philadelphia School” movement of architecture that focused on the concept of expressive modernist architecture. The design sought to respond to the natural

environment of the Outer Banks and symbolically portray the concept of flight in static form. The horizontal roof punctuated by a shallow concrete dome reflects the surrounding landscape of beach and dunes, while the curved overhang of the dome represents the soaring possibilities of flight.

As a leader in the preservation of our nation’s history, the National Park Service is responsible for ensuring that the best is left for future generation to judge and appreciate.



ing the storm that can be 20 feet high at its peak and 50 to 100 miles wide. The surge can devastate coastal communities as it sweeps ashore. In recent years, the fatalities associated with storm surge have been reduced because of better warnings, evacuations and preparedness.

Most deaths from tropical storms and hurricanes occur because of inland flooding from torrential rains. Storm winds can drive water up the mouth of rivers, compounding the severity of inland flooding. Land-falling hurricanes can also spawn tornadoes.

In recent years, U.S. hurricane warning systems have provided adequate time for people on barrier islands and the immediate coastline to move inland when hurricanes threaten. However, it is becoming more difficult to evacuate people from the barrier islands and coastal areas because roads have not

kept pace with the expansion and population growth in these areas. The problem is compounded by the fact that 80 to 90 percent of the population now living in hurricane-prone areas has not experienced the core of a “major” hurricane.

Many people do not realize the threat of hurricanes, as each storm is different. Many coastal residents have been through weaker storms, adopting a “wait-and-see” attitude when they should be taking action to leave. These false impressions may result in the loss of lives. An orderly evacuation can take one full day for coastal areas like the Outer Banks, so leave promptly when an evacuation is ordered.

Last year, Hurricane Dennis approached the Outer Banks and stalled offshore for several days. Heavy surf generated by Dennis eroded Seashore

beaches and washed out N.C. Highway 12 north of Buxton village. Some residents and visitors who ignored the evacuation order remained stranded for nearly two weeks with limited water, food and electricity. Weeks after Hurricane Dennis a large hurricane named Floyd made landfall near Cape Lookout. Floyd caused 75 deaths and over \$6 billion in damage, mostly from inland flooding.

As you settle in for your vacation, develop an action plan. Discussing hurricanes with your family ahead of time helps reduce fear and anxiety and lets everyone know how to respond. Keep updated with developing weather events. Making plans at the last minute can be upsetting and confusing. Everyone should know what to do and where to go if evacuation is ordered.

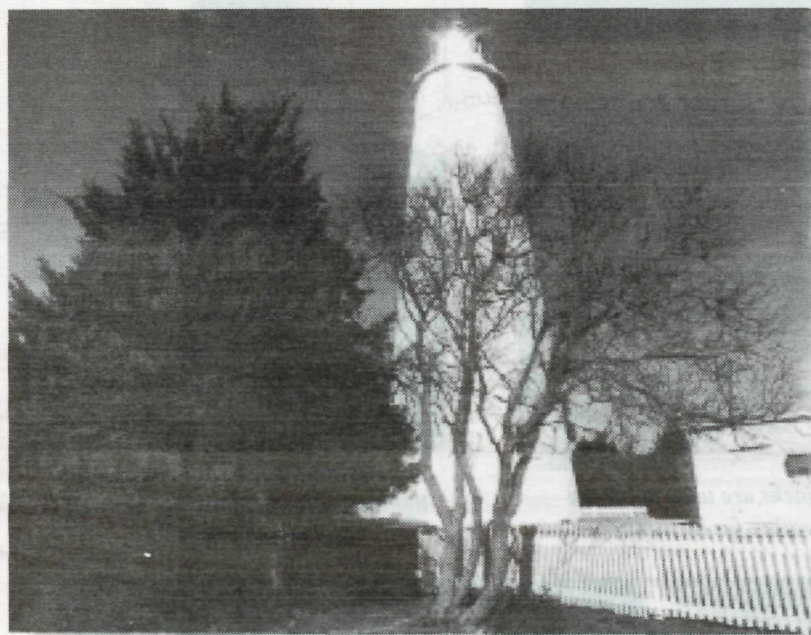
outer banks group park news



Ocracoke Lighthouse Now a Part of the Cape Hatteras National Seashore

Authorization for the transfer of the Ocracoke Light Station from the Department of Transportation, U.S. Coast Guard to the Department of Interior, National Park Service was provided by Public Law 105-383, Section 420 in 1998. Following a series of bureaucratic requirements, the light station was officially made part of the

national park system in February 1999. The Coast Guard retained the responsibility for operating and maintaining the aids to navigation function of the structure. As a part of the national park system the lighthouse will be subject to historic preservation and visitor services programs of the National Park Service.



Outer Banks National Parks Included in Fee Demonstration Project

The Outer Banks National Park Service Group which includes Wright Brothers National Memorial, Fort Raleigh National Historic Site, Cape Hatteras National Seashore and Cape Lookout National Seashore, has been incorporated as one of the 100 National Park Service projects under the Recreational Fee Demonstration Program authorized by Congress in 1996 to help the National Park Service deal with financial shortfalls brought about by increasing levels of visitation, unfunded repair and maintenance of infrastructure, and rising resource management needs. The legislation allows the National Park Service to implement and test new fees across the geographic and programmatic spectrum of sites they manage.

"This program will allow our Outer Banks and Core Banks parks to retain 80 percent of the recreation fees collected here," said Group Superintendent Francis Peltier. "These revenues will

yield substantial benefits to us, helping to repair and improve facilities and enhance visitor services to meet increasing visitation levels."

The Outer Banks NPS Group must now begin the development of an implementation plan for existing and future fee revenue sources. Any user fee charges in the national parks must be based on comparable fees charged by the private sector in the local area.

Revenues of \$665,000 from the national Fee Demonstration Program have already made repairs and improvements possible at the Waterside Theater at Fort Raleigh National Historic Site, and is helping with Bodie Island Lighthouse lead abatement, Cape Hatteras Lighthouse staircase repair and maintenance, replacement of 18 non-accessible sanitary facilities at the Cape Hatteras National Seashore and improving accessibility of the First Flight Trail at Wright Brothers National Memorial.

A Message from the Superintendent Francis A. Peltier

The national park system is a collection of 390 natural, cultural and recreational areas throughout the United States and its territories that reflect our national heritage in ways that fascinate and inspire visitors.

As an agency of the Department of the Interior, the National Park Service has been charged by Congress to protect and manage these special places for use now and to preserve them for generations to come.

More than that, however, the National Park Service is people —

men and women like you who share a common philosophy about the national parks. They are committed not only to preserving parks for future generations, but also to providing the necessary services so that visitors enjoy themselves and leave with a deeper understanding and appreciation of our American heritage. Employees who work at the national parks on North Carolina's Outer Banks, Fort Raleigh, Wright Brothers, Cape Lookout and Cape Hatteras, have made personal commitments to the national park idea, and their pledge is that they will fulfill the trust you have put in them. Thank you for allowing us to take care of your and America's heritage.

Francis A. Peltier

Park Service Seeks Addition of the Bodie Island Lighthouse as Part of the Cape Hatteras National Seashore

The General Services Administration (GSA) posted a Notice of Excess Real Property for the Bodie Island Lighthouse in September 1998 following the U.S. Coast Guard's (USCG) determination that they no longer needed the lighthouse to successfully accomplish their mission and turned it over to

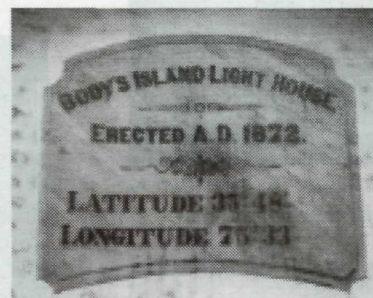
GSA. The National Park Service had made a formal request to the USCG as early as 1996 for the transfer of the lighthouse and a 100-foot square of

immediately surrounding land to be transferred to the national park system.

Because the fair market value of the structure (based on potential revenue) was \$1 million, GSA submitted the property transfer request to the Office of Management and Budget (OMB) in August 1999. To date there has been no action by OMB.

As a part of the national park system, the lighthouse would receive

preservation and maintenance as part of the National Park Service's mission, thus preserving its unique and intrinsic historic value.



A plaque inside the Bodie Island Lighthouse denotes the date built and the exact location of the light.

Cape Hatteras Lighthouse Volunteers Receive Award

The Cape Hatteras Lighthouse Volunteer Team (52 strong) were honored by the Dare County Volunteer Action Center for their important work over 1999 at the lighthouse. Their efforts help to keep visitors arriving to see the Lighthouse Move Project informed as to what was going on at the moment and what was planned over the

next several months. Their work was an important element in the success that the project enjoyed. As one of eight winners in the county, they are automatically nominated for recognition at the State level. Those very same volunteers are on the lighthouse grounds today continuing their work.

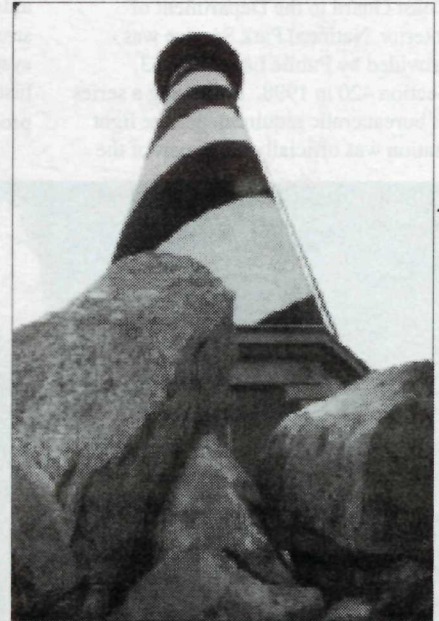


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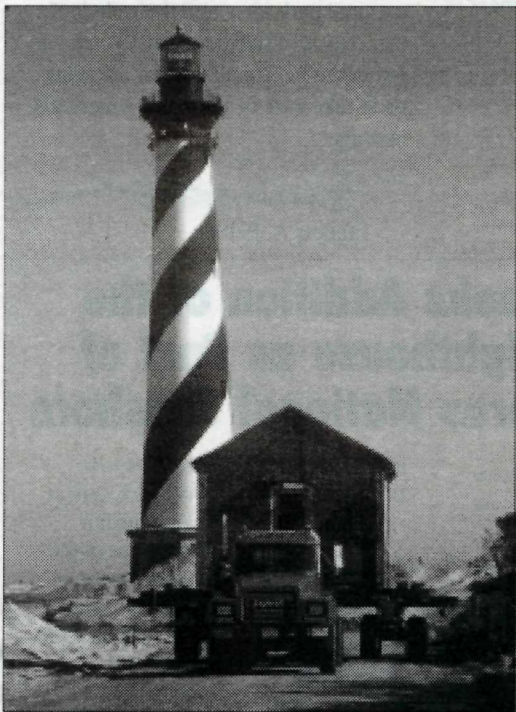
the move of the century

**Photos by
Mike Booher**

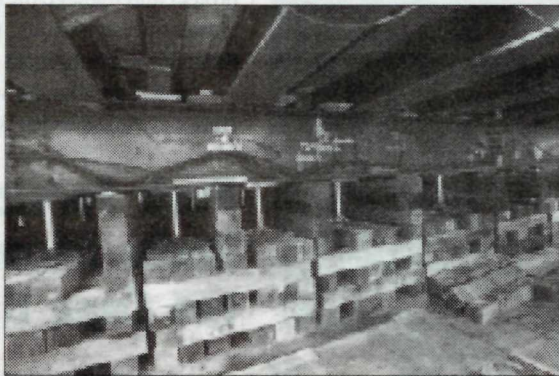
*The Double
Keepers'
Quarters makes
its journey to the
new site on
rubber wheels.*



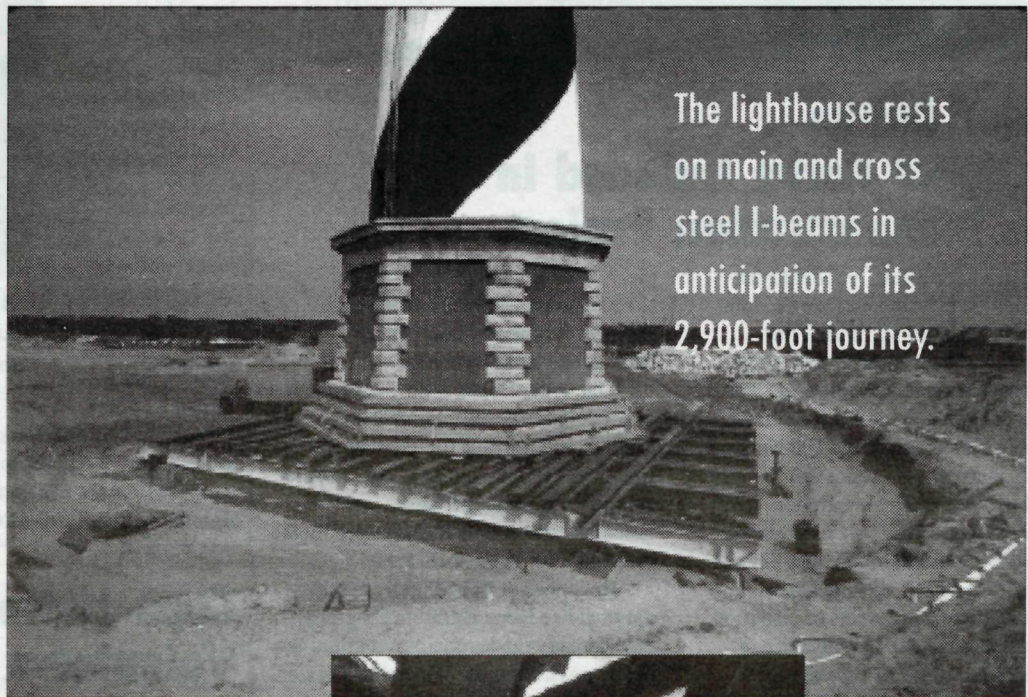
*Large granite stones mined from the
lighthouse foundation are removed
and piled to the side.*



*The oil house is the first structure in the station to
make the trip to its new home.*



*Oak cribbing and lift jacks are used to lift the
lighthouse in preparation for its journey.*



*The lighthouse rests
on main and cross
steel I-beams in
anticipation of its
2,900-foot journey.*



*The Principal Keeper's Quarters leaves the Cape
Hatteras Lighthouse standing alone at the
original site.*



*Excavation begins for
the foundation that
will eventually
support the lighthouse
at its new site.*



*One hundred
hydraulic lines filled
with vegetable oil
provide the pressure
for jacks that keep the
lighthouse upright.*

the move of the century



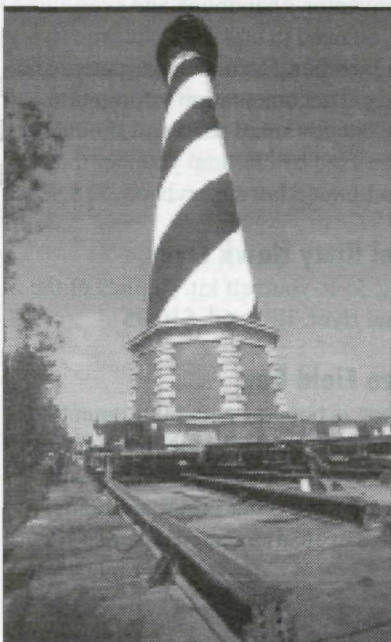
On the move!



The lighthouse begins its journey after being lifted. The travel beams are supported by oak cribbing below and carry the Hillman Rollers, the main beams and the cross beams along with the lighthouse above.



Travel beams are put in place to move the lighthouse over ground zero, the lighthouse's new home for the next 100 years.



The Cape Hatteras Lighthouse and its move platform glide over the travel beams to its new home 1,600 feet from the ocean's edge.



Traffic stops while the lighthouse crosses the four-way intersection.



July 8th, a day of rest for the lighthouse at the edge of its new home.



On July 9th, the move team celebrates at ground zero -- a job well done!



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A fascinating, nontechnical explanation of the move of the Cape Hatteras Lighthouse. Must-read for lighthouse fans and those planning to visit the Cape Hatteras National Seashore. 20 pages. \$2.95

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The coast of North Carolina was dubbed "torpedo junction" in WWII because of the deadly battle waged there by German submarines. This book details the subs' highly successful attacks on merchant ships in a fast-paced narrative that puts the reader in the midst of the action. Available in two paperback sizes. \$17.95, \$6.50

North Carolina Lighthouses-by Cheryl Shelton-Roberts & Bruce Roberts

The Roberts' newest publication details everything you'll want to know about the lighthouses of North Carolina, including the "lost lights." Includes a color map showing the location of existing and lost beacons. \$4.95

Video-Graveyard of the Atlantic

Maritime history tale following one man's travels on an unpredictable and unforgiving sea—and how it has shaped the history of North Carolina's Outer Banks. VHS. Part 1 \$19.95; Part 2 \$19.95

Video-This is America, Charlie Brown: The Wright Brothers at Kitty Hawk

Charlie Brown and the gang join in the events that changed the world. VHS. \$9.95

Video-Move of the Century: Cape Hatteras Light

Relive the historic moments of the 1999 relocation of the most recognized beacon in the United States. Watch as the Cape Hatteras Light is pushed 2,900 feet to safety, away from the eroding shoreline and encroaching sea. 60 minutes. VHS. \$19.95

Video-The Wright Stuff - from WGBH in Boston and The American Experience, narrated by Garrison Keillor

Story of the Wilbur and Orville Wright. Where others with government grants and engineering educations failed, the Wright Brothers succeeded and invented the airplane. Color. Approx. 60 minutes. \$24.95

Puzzle-North Carolina Lighthouses

500-piece puzzle of seven North Carolina lighthouses reproduced from original art by Cotton Ketchie. Full color. 18" x 24" finished size is suitable for framing. A portion of the proceeds is dedicated to the preservation of N.C. lighthouses. Includes a historical digest of N.C. lighthouses by Dawson Carr. \$16.95

Inventor's Workshop: Flight - from Boston Museum of Science

A complete inventor's kit, with a fully illustrated, 48-page flight inventor's handbook and everything you need to make six fantastic flying machines. Even includes patent and legal documentation information. Contains small parts and should not be used by children younger than 6 without adult supervision. \$18.95


Model Kitty Hawk Flyer

Plastic do-it-yourself kit. Replica of the original flyer. 12" x 6". \$10.95

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This bag is popular with outdoor enthusiasts and travelers. It's ideal for carrying field or travel guides, binoculars, cameras, maps and other important items. With the exclusive Cape Hatteras

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