

Assateague Island

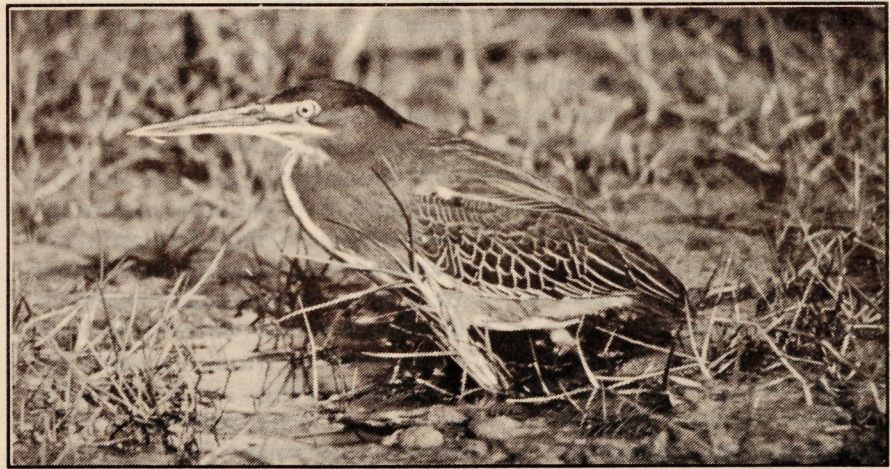


A Visitor's Guide to National Park Service Activities & Events - Summer 1997

It's More Than A Beach



BICYCLING: Both ends of the island offer great areas for biking. The flat terrain makes it an enjoyable experience for visitors of all ages. In Maryland a bike path is constructed along much of the major roadway. The Virginia end provides a number of hard paths to bike on. Care should be taken when biking in areas where car traffic is present. Bike rentals are available from a park concessionaire in the summer on the island in Maryland. The nearby community of Chincoteague in Virginia has a number of bike rental facilities.



WILDLIFE VIEWING: Opportunities abound to see wildlife at both ends of the island. Bird and mammal life are abundant. A number of nature trails provide a chance to see various barrier island habitats. Do not feed the wildlife or get too close. Horses, especially, can kick and bite.



NATURALIST ACTIVITIES: A wide variety of naturalist conducted activities are available to help visitors of all ages enjoy and learn more about the barrier island environment. Check in the activity section of this paper for more information on programs.



FISHING: Fishing in the surf and shellfishing in bay waters provides opportunities to enjoy the challenge of trying to catch a variety of species. No rental equipment is available on the island. Naturalist led demonstrations on surf and shellfishing are presented during the summer season.



CANOEING: The bay waters of the island offer the opportunity to canoe and experience the serenity of Assateague Island. Careful considerations should be given to weather conditions before canoeing. Canoes are available for rent by a park concessionaire in the Maryland section of island.

WHEN IT'S NOT A 'BEACH DAY', TRY THESE IDEAS

- * Enjoy exhibits, nature films, and book stores in the Toms Cove, Chincoteague Refuge, and Barrier Island visitor centers.
- * Walk the Life of Assateague nature trails in Maryland and the Toms Cove, Woodland, Lighthouse, and Wildlife Loop trails in Virginia.
- * Drive the Assateague to Crisfield 'Beach to Bay Indian Trail'. Discover rich regional history in several museums, small towns, and state parks.
- * Explore Salisbury's zoo and Ward Museum of Wildfowl Art — both small but outstanding!
- * Explore charming Chincoteague and its museums, and NASA's Wallops Island Visitor Center.

Ponies - Wild and Free

Horses move around in small bands of 5 to 15 animals · Horses survive completely on native vegetation. Diet includes poison ivy

Although no one is completely sure how they arrived, horses have been a part of the Assateague Island environment for many, many years. Despite the often told tale of shipwrecks and Spanish ponies, the most plausible explanation is that they are the wild descendants of horses placed on the island by mainland landowners to avoid fencing and taxation. Evidence of this activity dates back to the 17th century. Regardless of their origin, these sturdy, shaggy horses have proven themselves remarkably well-suited to the harsh environment of Assateague.

There are actually two herds of horses inhabiting the island, separated by a fence at the Maryland Virginia state line. The Maryland herd is owned and managed by the National Park Service, while the Virginia horses are owned by the Chincoteague Volunteer Fire Department. The Fire Department is allowed to graze their herd on Assateague Island through a special use permit issued by the Fish and Wildlife Service - a federal agency which administers Chincoteague National Wildlife Refuge. The permit restricts the size of the herd to approximately 150 animals in order to protect the other natural resources of the Wildlife Refuge. To meet this limit, the Chincoteague VFD sponsors an annual pony penning festival. Ev-

ery year on the last Wednesday of July the entire herd is rounded up and swims to Chincoteague where the years' foals are sold at auction.

In Maryland, the number of horses has grown from approximately 28 in 1968 to more than 165 at present, exceeding the desired herd size of 120 to 150 animals. With this growth has come increasing evidence that the horses may be causing harm to their island home. Long term research has shown that the horses are having a significant impact on the dune and saltmarsh habitats, their favored foraging areas. Overgrazing results in reduced plant health and reproductive capability, changes in species diversity, and diminished habitat value for other wildlife species. By establishing population limits, the Park Service is attempting to balance the health and well being of the horses with the need to protect the island's other sensitive natural resources and values.

To manage population growth on a long term basis, a unique contraceptive has been developed for use in the Maryland herd. Administered by dart guns, the non-hormonal contraceptive vaccine stimulates the horse's immune system to produce antibodies. At sufficiently high levels these antibodies block fertilization and thereby prevent pregnancy. The contracep-



tive effect is temporary, lasting about one year, but can be extended with an annual booster shot. During seven years of experimental field trials, the technique has proven better than 95% effective, and has exhibited no harmful side effects. Use of the contraceptive as part of a long term horse population management program began in 1995.

Although the number of horses will be reduced over the next few years, the opportunity to observe Assateague horses should not be affected. Horses roam throughout the Seashore, including the developed areas where most park visitors congregate. The

opportunity to observe horses will continue, but so too will the need to treat the horses as wildlife. Feeding horses along the roadways habituates horses to people and cars, and results in several horses dying from automobile collisions each year. And despite their appearance, the horses are wild creatures that often respond to attempts to touch or feed them by kicking and biting. With rabies now present on the island, the consequences of being bitten by a horse include the possibility of needing rabies shots. So please, enjoy the horses, but do it from a safe distance.

One of the major causes of death for horses is traffic accidents · Ponies "talk" with their ears · The life span of an Assateague pony is about 20 years

Restoration Planning Underway for Northern Assateague Island



Unnatural erosion and island migration has been occurring on the northern end of Assateague Island since the 1930's when a jetty system was constructed to stabilize the Ocean City Inlet. Acting somewhat like a dam on a river, the jetties have halted the "flow" of sand which naturally moves southward onto Assateague. The lack of sand has caused a landward shift in the ocean beach more than 1,200 feet, and a dramatic decrease in the overall elevation of this part of the island. In its current state, even moderate storm tides result in ocean waves washing entirely across the island.

While some species, particularly ground nesting birds, have thrived in the changed habitats resulting from the chronic shortage of sand, there is real concern for the Island's future. Coastal geologists are predicting that without a renewed sand supply, northern Assateague will continue to degrade and eventually break apart. Although breaches and new inlet formation are naturally occurring events on barrier islands, the north end situation is entirely the result of human-caused

changes to the natural sand supply.

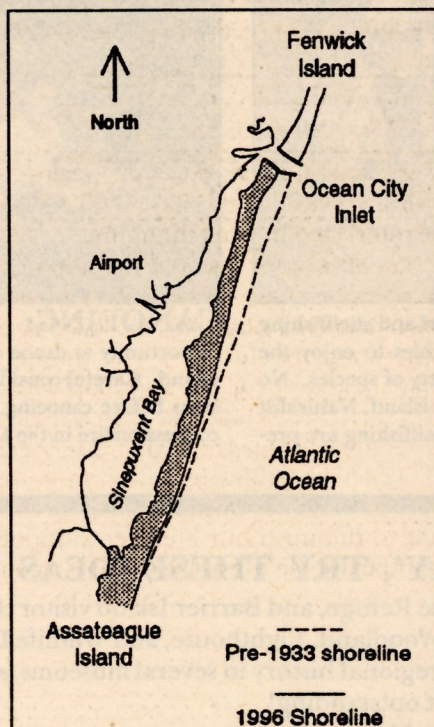
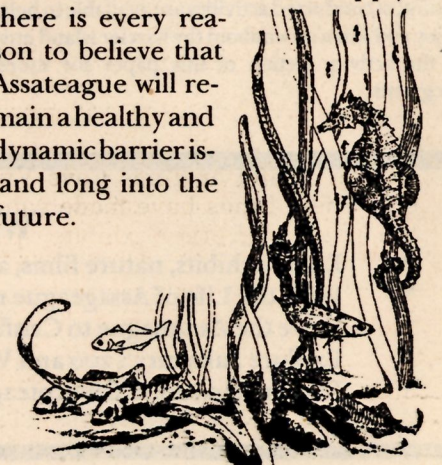
As part of an ongoing study of water-related problems in Maryland's Atlantic Coast region, a two-part restoration program is being planned for Assateague Island. The first phase will involve nourishing Assateague's beaches using sand from an offshore shoal to restore a portion of that which has been lost to the island over the past 60 years. Approximately 1.4 mil-

lion cubic meters of sand will be placed along the ocean shoreline and serve to widen the beach and provide a much needed immediate boost to the island's physical integrity. In addition, a low elevation "berm" will be built along portions of the north end to reduce the frequency of overwash.

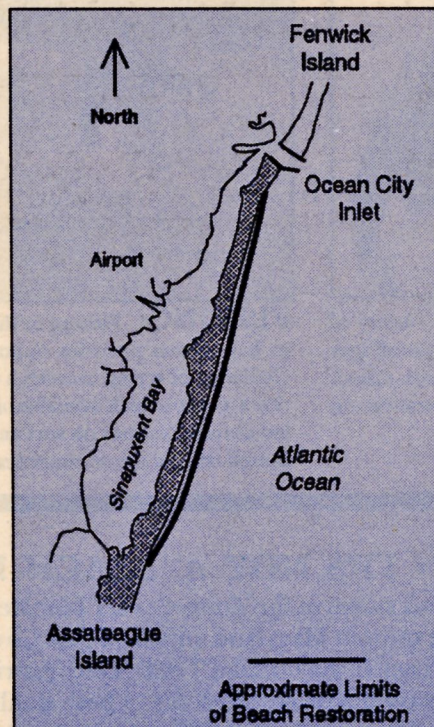
The second phase will restore a "natural" sand supply to Assateague Island. Because the jetties will con-

tinue to restrict the movement of sand to the island, an efficient method is needed to supply sand on a routine, long term basis. Initial plans are focusing on several types of permanent "bypassing" systems which will capture sand on the north, "upstream" side of the inlet and transport it to Assateague Island. Capturing sand before it enters the inlet will not only help Assateague, but may also benefit local navigation by decreasing the amount of shoaling in the back bays and reducing the need for channel dredging.

While much work remains to be done in planning the restoration program, widespread support at the local, state and national levels gives hope that new sand will indeed reach the beach in the not-too-distant future. With a secure sand supply, there is every reason to believe that Assateague will remain a healthy and dynamic barrier island long into the future.



Historic Shoreline Change on Assateague Island

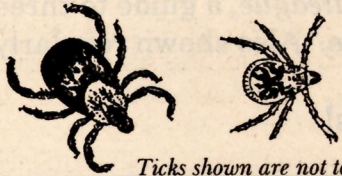


Area Proposed for Beach Restoration



Hazards of Assateague

The wild horses: Ponies often appear tame and gentle, but they may become aggressive quickly and can be dangerous. Each year several visitors are bitten or kicked by what appears to be "tame" ponies. Feeding ponies and any other wildlife is unhealthy for the animals, dangerous for you, and strictly prohibited. Some ponies become beggars and at least one is killed by a car each year while seeking a handout. Do not stop or park on the roadside or bike trail to view the ponies except in designated areas - enjoy them from a distance.



Ticks shown are not to scale.

Ticks and Lyme Disease: Lyme Disease is an illness caused by bacteria transmitted to people through tick bites. In its early stages Lyme Disease may cause circular rashes, flu-like symptoms, headaches, stiff neck, and fevers. In its later stages the disease may cause arthritis in large joints, meningitis, neurological, and cardiac problems. The primary carrier, the deer tick, is found on Assateague Island. While they can be found in any natural area on the island, special care should be taken in high shrub areas and woods in the spring and fall, and in leaf litter in the spring and early summer. To learn more about Lyme Disease and how to avoid tick bites, stop by a ranger station or visitor center and pick up the brochure Ticks and Lyme Disease in the National Parks.

Rabies: For many years rabies has worked its way south along the Delmarva Peninsula and it has finally reached Assateague. Park and refuge managers cite rabies as

an added reason to avoid contact with any wild animal. While mange, distemper and other wildlife diseases may commonly affect the appearance and behavior of many creatures, particularly foxes and raccoons, visitors should never approach animals with the intention of offering assistance. **Please report any human contact with sick animals to the nearest park ranger or refuge official.**

Surf safety: Please take a few minutes to familiarize yourself with some common beach hazards by stopping at the ranger stations or visitor centers and requesting a copy of the Surf Safety Brochure. Such hazards include heavy wave/surf conditions, lightning storms, shallow water currents, and stinging marine organisms. We also recommend examining the bathhouse exhibits and reading posted regulations and information on the beach walkways.



Rabies may have crossed the bay to Assateague by way of swimming raccoons.

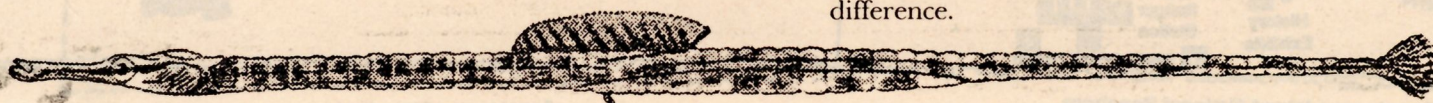
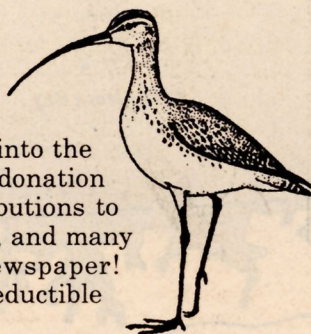
Poison ivy: Found throughout the inner dune, shrub and forest sections of the island, poison ivy, with its shiny leaves in clusters of three, can produce an itchy red rash if you come in contact with the plant's oils. To lessen your chance of contact, stay on all trails and boardwalks. In the fall, poison ivy leaves turn a crimson red, but are still contagious. If you accidentally touch poison ivy, immediately wash your hands and the affected areas with soapy water to remove the oil. Remember: "Leaves of three - let them be!"

Emergency Phone Numbers

Maryland	Ranger Station	(410) 641-3030
	After Hours	Dial 911
Virginia	Ranger Station	(757) 336-6577
	After Hours	Dial 911

Thank You!!

The national seashore staff thanks the many visitors who drop a dollar or some loose change into the Barrier Island or Toms Cove Visitor Centers' donation box. These funds have made substantial contributions to the aquariums, other exhibits, special programs, and many free publications -- including this park newspaper! Information on how to make a substantial tax deductible contribution is available at the donation box.



Lifeguards provide protection for beach users in designated areas and conduct surf rescue demonstrations. Swimmers are encouraged to pick up a copy of the surf safety brochure at the visitor centers or at the surf condition signs located near the lifeguard protected beaches.

Seashore Camping - Something for Everyone

A variety of camping is available on Assateague Island, but it is located in the Maryland section only. The National Park Service provides two campgrounds, Oceanside and Bayside, which offer drive-in pads suitable for tents, trailers and recreational vehicles. In addition, Oceanside has walk-in, tent-only sites, located 100-200 feet from centralized parking areas.

Both campgrounds have primitive facilities with outdoor chemical toilets, central locations for drinking water and outdoor rinse-off showers. Reservations can be made from May 15th through October 15 up to five months in advance of a camping date by calling 1-800-365-2267. The rest of the year the system is first come, first served. Organized group camps and backcountry camping is available for canoeists or hikers at established sites. Additional camping information is available at the national seashore's campground office or by calling a ranger at 410-641-3030.

Assateague State Park in Maryland also has a campground and it features hot shower bathhouses. There are no electric or water hookups in either park. Further state park information is available at 410-641-2120.

— Message from the Superintendent —

Welcome to one of the most dynamic parks in the national park system -- not just because we have an extremely knowledgeable and friendly staff but primarily because Assateague as a barrier island is by nature a resource in perpetual motion. It is constantly moving in reaction to currents, winds, and sea level changes.

Thanks to the State of Maryland and Federal Highway Department we have a special treat -- a new bicycle/pedestrian bridge adjacent to the car bridge crossing over to the Maryland section of Assateague Island. A parking lot is located close to the bridge. A great view of the island is seen from the bridge which gives a special appreciation of the fragile nature of the island.

Again I would like to ask your help with several aspects of managing the seashore. A special effort is being mounted in the Maryland section to keep the horses wild. We have had a number of "problem" horses created by people feeding them. Several people are bit or kicked each year; horses raiding tents for food and mugging visitors with food have almost become commonplace. While feeding horses may make humans feel good, it is obviously bad for the horse! Only with your cooperation can we fix this problem!

We have another island resident that requires some tender loving care -- the piping plover. This little shore bird is in danger of becoming extinct. The National Park Service, U.S. Fish & Wildlife Service, and Assateague Island State Park are very concerned and are trying a variety of techniques to enhance the reproductive success of this plover. Last year Assateague was one of the prime piping plover success stories. With your help in avoiding areas designated as plover habitat, we can ensure that at least here they have a refuge.

On the southern end we are trying to find a sustainable way to provide first class visitor services while recognizing mother nature holds the trump card. I would be interested in your thoughts.

The last point I would like for you to consider is your role as a steward of Assateague and our earth. We have a number of island users who are very active partners in helping us do special programs and meet special needs. We also have a number of volunteers who help in the visitor centers, assist with resource management projects, and help with maintenance. If you live nearby or visit regularly, and would like to get involved, please contact the national seashore's Education Specialist in Maryland or the District Interpreter in Virginia.

On a larger scale Americans must step forward and demonstrate the principles of sustainability. Sustainability is a concept that means living in such a way so as not to diminish our children's opportunity to enjoy the same resources and standards of living as we do. It is a complex issue that has things we can do now to help -- reducing the waste stream; assessing impacts new development will have on us; thinking about where that chemical goes we just sprayed on our lawns; how can we use solar rather than a non-renewable source; recycle; etc. It is not someone else's problem. We are responsible, so let's get involved and make a difference.

Marc A. Koenings

1997 SUMMER ACTIVITIES

MARYLAND DISTRICT

National Park Service - Assateague Island National Seashore
Sunday, June 15 - Saturday, August 23, 1997

Barrier Island Visitor Center

Begin your Maryland visit here. The center features daily programs, exhibits, an aquarium, touch tank, and a Park Ranger to answer questions 9:00 a.m. to 5:00 p.m. Many publications are available, including *Life of Assateague*, a guide to three nature trails. The center is the starting point for the park's one-hour driving tour by cassette tape. Also shown regularly are various nature films. For more information, call (410) 641-1441.

Aquarium critters are fed daily at 10 a.m. - Come join us!

Guided Explorations

Birds of a Feather - Join us for a 1/2 mile stroll through forest and marsh to spot the birds. We provide binoculars and a spotting scope for an upclose look. Meet in the history exhibit parking lot at the intersection of the Ferry Landing Road. Insect repellent, long pants and long sleeves are recommended.

Life of the Beach - Have you ever seen black sand on the beach and wondered where it came from? Caravan by car from the visitor center to the best beachcombing area north of the state park. We will explore a natural barrier island beach which is heavily impacted by winter storms.

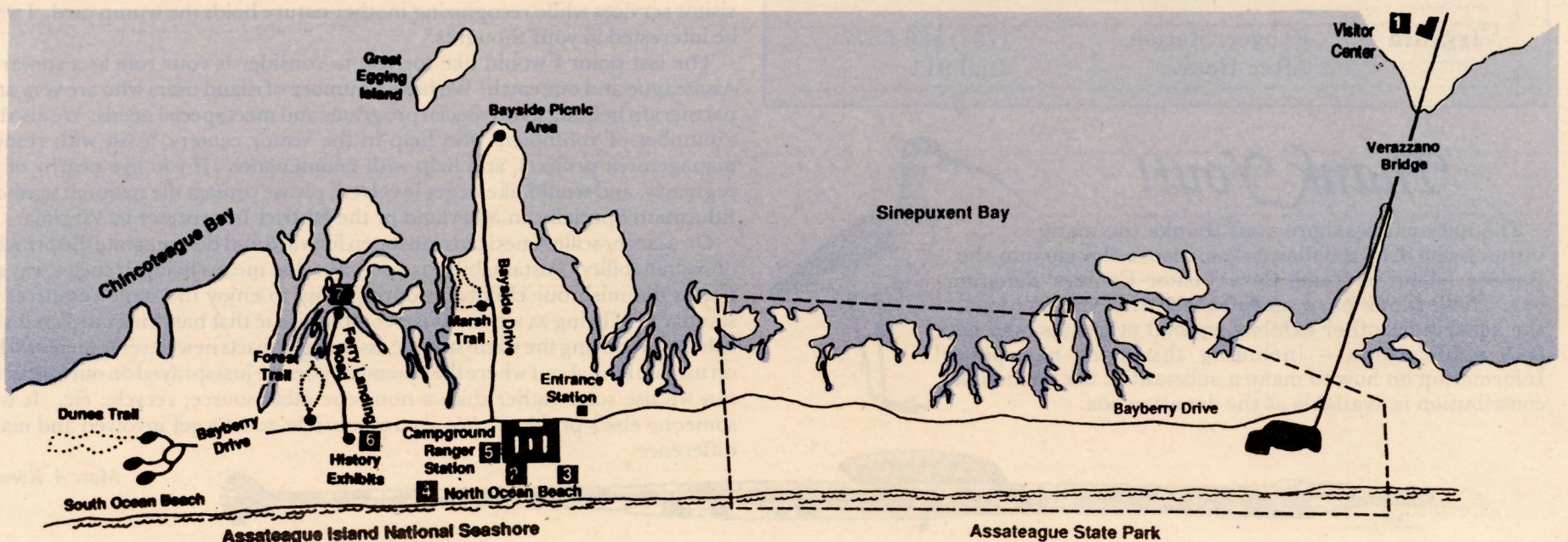
Bay Explorers - This Old Ferry Landing program involves active participation with seines by the whole family! Take a close look at marine organisms that thrive in the bay. A good pair of snug wading shoes (no thongs) is a must, if you want to pull the seine or catch critter in nets.

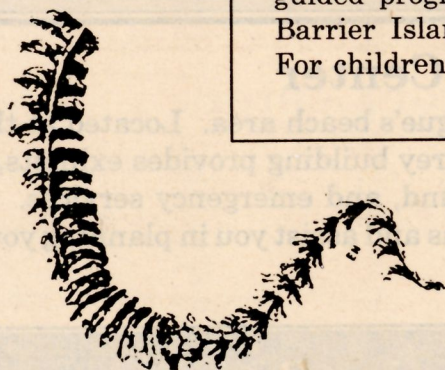
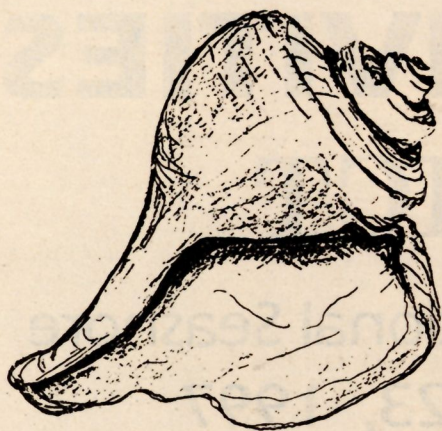
Canoe Trip - Join a Park Ranger at the Old Ferry Landing for a unique way to explore Chincoteague Bay and the abundant marsh life. You will be briefed on basic canoe skills but it may be necessary to mix and match experienced paddlers with beginners as this trip will venture to one of the outer islands with stops along the way. **PADDLERS MUST BE AGE 14 OR OLDER**, and all paddlers must have strength to paddle in windy conditions. Children under 14 have the option of sitting in the middle of the canoe. All equipment is provided. Sneakers (no thongs) are required as wading will be necessary at certain stops. **NOTE: Reservations must be made in person at the Barrier Island Visitor Center. There is a \$10.00 per canoe fee for the activity payable by cash or check only at the time of making the reservation.** This fee is non-refundable except when stormy or extremely windy weather forces the park ranger to cancel the trip. In these very tight budget times, the canoe fee money will be directly used to help the park maintain a high quality of visitor services to the public. Reservations are limited to one trip per person each summer. Canoeists with reservations must arrive on time or risk forfeiture to others standing by.

The Beach At Night

A Walk At Dusk - (precedes Campfire Program) Do you know what biological luminescence is? Join a Ranger for a leisurely 1/2 hour stroll down the beach to the site of the campfire. Insect repellent may be necessary. Meet under the canopy outside the National Seashore's Campground Ranger Station.

Campfire Program - Did pirates hide out on Assateague? Where did the ponies really come from? Join two rangers for this informal exchange of fact and fiction. Beware of the occasional "tall tale"! If driving, park at the southernmost beach boardwalk in the North Ocean Beach lot and walk 200 yards south along the beach. If you are camping in Oceanside Campground of the national seashore, you can walk some distance north from one of the boardwalks that lead to the beach. Repellent may be needed.

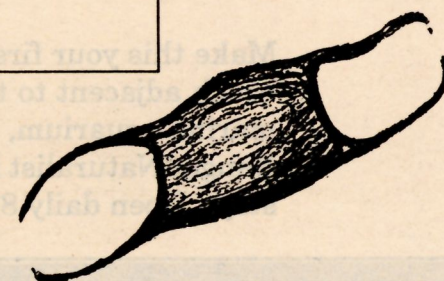
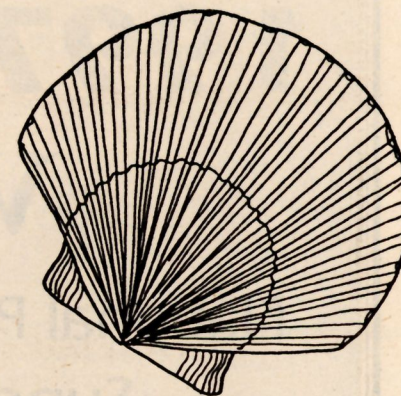




For Young Naturalists

Kids Beach Discovery - Children age 6-12 get the chance to explore the island from "their" point of view, then play nature games and build a sand sculpture of a seashore creature. Meet on the beach at the end of the northernmost boardwalk leading from the North Ocean Beach parking lot. **Note:** Adults can attend surf fishing program at same time and place.

Seashore Ranger - Pick up activity booklet at Visitor Center. Complete activities and go on two naturalist guided programs. Upon completion of program, stop at Barrier Island Visitor Center for badge and certificate. For children ages 6-12.



Recreational Demonstrations

Surf Rescue Demonstrations - Our lifeguards are professionals! Come watch them demonstrate an ocean rescue and lifesaving equipment. Meet at the designated lifeguard stand at North Ocean Beach.

Shellfishing Demonstration - Did you know that the ribbed mussel is mighty tasty steamed or sauteed in butter? But to enjoy them you must know how and when to safely forage for them. A ranger at the Old Ferry Landing will show you how to catch blue crabs, clams and ribbed mussels. Those interested in seeing where mussels live should wear sneakers (no thongs) and clothing suitable for wading.

Surf Fishing Demonstration - We provide several surf rods and bait, and demonstrate equipment and casting technique to help you learn about the basics of surf fishing. Wear clothes and shoes suitable for wading in the surf if you want to cast it "way out there"! All participants will have several chances to cast; those interested can fish awhile. No better way to learn before investing in equipment. Meet at the northeast corner of the North Ocean Beach parking lot. **NOTE:** Program is for ages 12 and up. Children age 6-11 can go to Kids Beach Discovery offered at the same time.

MARYLAND DISTRICT

LOCATION	MAP CODE	PROGRAM	SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
History Exhibit Parking Lot	6	Birds of a Feather (1-1/2 hours)			7:00 am				
Lifeguarded Beach	2	Surf Rescue Demonstration (30 minutes)		10:00 am			10:00 am		10:00 am
Visitor Center	1	Aquarium Feeding (30 minutes)	10:00 am	10:00 am	10:00 am	10:00 am	10:00 am	10:00 am	10:00 am
Visitor Center	1	Life of the Beach (2 hours)			10:45 am		10:45 am		
Old Ferry Landing	7	Bay Explorers (1 hour)		11:15 am		11:15 am		11:15 am	
Old Ferry Landing	7	Canoe Trips (2 hours)	10:00 am 4:00 pm	8:30 am	5:30 pm	8:30 am	8:30 am	5:30 pm	10:00 am 4:00 pm
Old Ferry Landing	7	Shellfishing Demonstration (1 hour)	1:30 pm		1:30 pm		1:30 pm	1:30 pm	1:30 pm
North Ocean Beach	3	Kid's Beach Discovery (1-1/2 hours)		1:30 pm		1:30 pm			
North Ocean Beach	3	Surf Fishing Demonstration (1-1/2 hours)		1:30 pm		1:30 pm			
Campground Ranger Sta.	5	A Walk at Dusk (30 minutes)			8:00 pm			8:00 pm	
See Program Description	4	Campfire Program (1 hour)			8:30 pm			8:30 pm	

1997 SUMMER ACTIVITIES

VIRGINIA DISTRICT

National Park Service - Assateague Island National Seashore
 Sunday, June 15 - Saturday, August 23, 1997

Toms Cove Visitor Center

Make this your first stop each time you visit Assateague's beach area. Located at the beach adjacent to the center parking lot, this large, grey building provides exhibits, a marine aquarium, publications, permits, lost and found, and emergency services. A Ranger Naturalist is available to answer your questions and assist you in planning your stay. Open daily 8:00 a.m. to 6:00 p.m.

Guided Explorations

For The Birds - This leisurely stroll with a spotting scope is designed for the beginning bird watcher. Several different habitats will be observed looking for their winged visitors. Some binoculars are provided. **Advanced reservations are required** - limit 25. Meet at the Visitor Center. Distance: 1/2 mile. Time: 1-1/2 to 2 hours.

The Changing Beach - Did you know that Assateague is constantly moving? This walk focuses on barrier island ecology and the adaptations necessary to live in this changing environment. Meet at the Visitor Center. Distance: 1/2 mile. Time: 1 hour.

Nature's Nursery - The Salt Marsh - If you enjoyed that seafood dinner last night, join the marsh walk and learn about where all that good food came from. The salt marsh is teeming with unique plants and animals. This walk gives you an opportunity to get acquainted with a wetland area that is of vital importance to the marine life in the area. **Footwear will get wet and muddy.** Meet at the Visitor Center. Distance: 3/4 mile. Time: 1 hour.

Marine Explorers - This program involves active participation. Join us in getting our feet wet and take a close look at marine organisms from beach to bay. A good pair of snug wading shoes is a must. Meet at parking lot #4. Distance: 1 mile. Time: 1-1/2 to 2 hours.

Evening Programs

Evening Potpourri - Join a naturalist for a fun and educational activity. Activity will vary depending on naturalist doing the presentation. Check at Toms Cove Visitor Center for current listing of activity offered. Program will end at the site of the campfire. Insect repellent may be necessary. Meet at parking lot #3. Time: 3/4 hour.

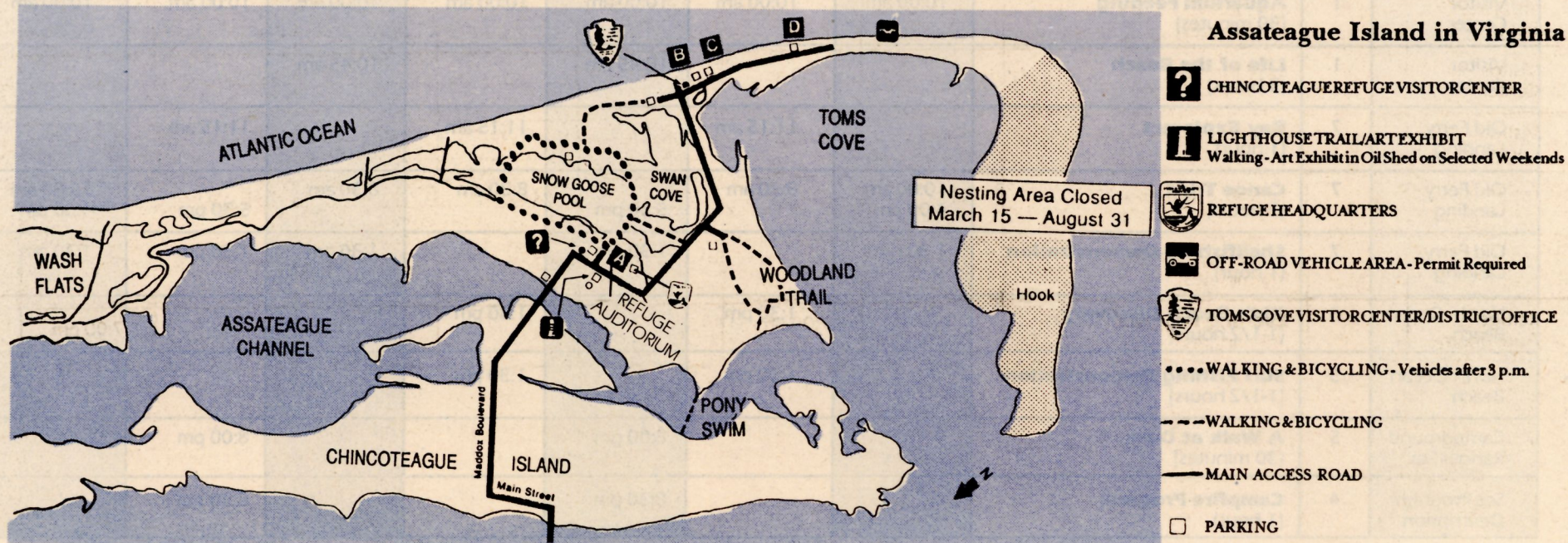
Beach Campfire - A campfire on the beach helps recreate a mood of days gone by on Assateague. Bring marshmallows and a roasting stick. A naturalist will lead discussions about a variety of topics on the rich natural and cultural history of the island. Meet at parking lot #3.

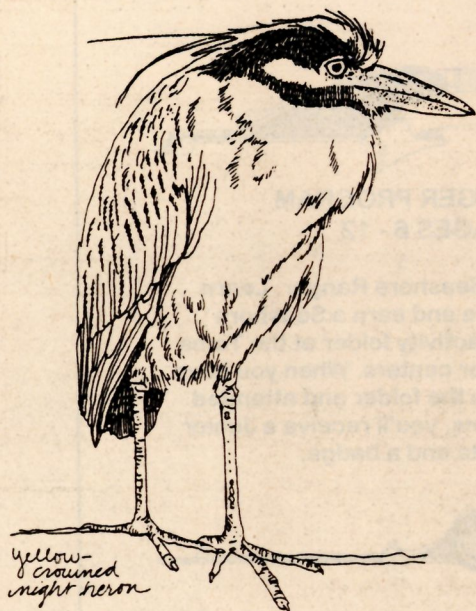
Evening Program - A film, slide, or inter-active program is presented on fascinating aspects of Assateague Island's natural or cultural history. Check at the visitor center for program topics. **Special Note:** Meet at the Chincoteague National Wildlife Refuge auditorium. Time: 3/4 hour.

Nature Talks

Aquarium Talk - The marine aquarium in the Toms Cove Visitor Center contains a microcosm of life representing the underwater world of Toms Cove. Join a naturalist for this talk as the residents of the aquarium are fed. Time: 1/2 hour.

Creature Feature - Gather 'round the naturalist and today's mystery guest. Learn the life and lore of a special island inhabitant during this informal discussion. Meet at the Visitor Center. Time: 15 minutes.





For Young Naturalists

Junior Explorers - For budding marine biologists, ages 9-11. This total "immersion" activity involves active participation, seining for fish, exploring the tidal flats and learning to "read" nature. An excellent experience for any young person with an interest in the outdoors. Register in the Toms Cove Visitor Center - limit 20. Meet at parking lot #4. Distance: 1 mile. Time: 1-1/2 hours.

Certified Seashore Ranger - Children 6-12 can receive Junior Ranger certificates by registering at the Visitor Center desk and completing certain activities. Each successful participant will bring completed forms to a daily 3:00 p.m. awards ceremony.



Recreational Demonstrations

Surf Rescue Demonstration - Join the lifeguard staff for a demonstration of equipment and techniques of ocean surf rescue. Because ocean swimming can be dangerous, the staff strongly encourages your participation in this activity. Meet at the center lifeguard stand on the beach. Time: 1/2 hour.

Surf Fishing - Designed for those with limited surf fishing experience, this program includes demonstrations of equipment, bait and casting techniques. Equipment is provided; however, actual practice time depends on group size. Experienced anglers who would like to share their expertise are welcome! Meet at the Visitor Center. NOTE: Program is for ages 12 and up. Time: 2 hours.

VIRGINIA DISTRICT

LOCATION	MAP CODE	PROGRAM	SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
Visitor Center	B	For The Birds (1-1/2 to 2 hours)	7:30 am			7:30 am		7:30 am	
Visitor Center	B	The Changing Beach (1 hour)			10:00 am		10:00 am		10:00 am
Visitor Center	B	Nature's Nursery The Salt Marsh (1 hour)		10:00 am		10:00 am			
Lot 4	D	Junior Explorer (1-1/2 hours)			9:30 am				9:30 am
Lot 4	D	Marine Explorer (1-1/2 to 2 hours)	9:30 am				9:30 am		
Visitor Center	B	Aquarium Talk (30 minutes)	1:30 pm	1:30 pm	1:30 pm	1:30 pm	1:30 pm	1:30 pm	1:30 pm
Visitor Center	B	Creature Feature (15 minutes)				4:00 pm			4:00 pm
Protected Beach	C	Surf Rescue Demonstration (30 minutes)		10:00 am		10:00 am		10:00 am	
Visitor Center	B	Surf Fishing (2 hours)		8:00 am				8:00 am	
Visitor Center	B	Seashore Ranger Award (15 minutes)	3:00 pm	3:00 pm	3:00 pm	3:00 pm	3:00 pm	3:00 pm	3:00 pm
Lot 3	C	Evening Potpourri (45 minutes)	7:45 pm			7:45 pm		7:45 pm	
Lot 3	C	Beach Campfire (45 minutes)	8:30 pm			8:30 pm		8:30 pm	
Refuge Auditorium	A	Evening Program (45 minutes)		7:00 pm					7:00 pm

Special Note: The National Park Service assists the U.S. Fish and Wildlife Service in interpretation and recreation management, but only on Toms Cove Hook. The **Chincoteague National Wildlife Refuge** provides many other activities throughout the rest of the refuge. Contact the **Chincoteague Refuge Visitor Center** for program details.

BEACH BIOLUMINESCENCE

Take a nighttime hike on Assateague's beaches and you might have a close encounter of the '**glow-in-the-dark**' kind! Rub your hand over the damp sand about 5 to 10 feet from the water's edge. Did you see any tiny, yellowish-green sparks or a momentarily glowing blue-green blob? If so, then you've witnessed **bioluminescence**!

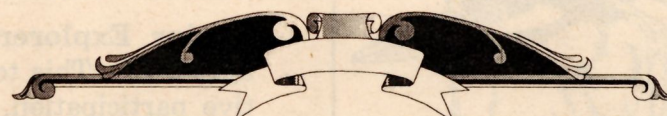
Bioluminescence:

- means '**living light**' and is a term that describes the emission of visible light by living organisms. This light is produced by a chemical reaction and unlike electric light, heat is not produced.
- occurs when luciferin (substrate) reacts with luciferase (enzyme) in the presence of oxygen and ATP (adenosine triphosphate - always associated with living cells).
- is the same reaction that occurs in fireflies (lightening bugs).
- is primarily a marine phenomenon. Certain species of bacteria, plankton, comb jellies, jellyfish, squid, seastars, crustaceans, worms and fish are bioluminescent.
- is the source of the term '**mystery meat**'. Some bioluminescent bacteria live on dead meat and in the days before electric refrigerators, meat that 'glowed' was a common occurrence!
- is found in about 80% of mesopelagic (depths of 200 to 1000 meters) species in the ocean!
- is used by organisms to **attract prey** (deep sea angler fish), to **confuse predators** (squid), to **highlight predators** in the hopes that the predator will be eaten (dinoflagellates, comb jellies), to **attract a mate** (fireflies) and to **communicate** with members of the same species.
- **MAY BE THE MOST COMMON LANGUAGE ON THE PLANET!**

Dinoflagellates, comb jellies and bacteria are the most common bioluminescent species found washed up on Assateague's beaches. Comb jellies look like jellyfish but they don't sting. Dinoflagellates are microscopic, mostly planktonic protists (unicellular organisms with membrane bound organelles). Bacteria are occasionally observed on dead mole crabs. Bacteria give off a constant glow while comb jellies and dinoflagellates only glow when disturbed (by predators, waves, human hands)!

The best time to observe bioluminescence on Assateague's beaches is in the spring, summer and fall on cloudy or 'moonless' nights. Sometimes you can even see the waves glowing an eerie green!

The darker it is, the better the light show!



SEASHORE RANGER PROGRAM FOR KIDS AGES 6 - 12

It's easy and fun to be a Seashore Ranger. Learn more about the seashore and earn a Seashore Ranger badge. Pick up an activity folder at the Toms Cove or Barrier Island visitor centers. When you have completed the activities in the folder and attended two ranger guided programs, you'll receive a Junior Ranger certificate and a badge.



Bioluminescence Brain Teaser

Use the letters in the word 'bioluminescence' to spell as many words as possible. If you need paper, ask for it at the visitor center desk. Participants who compose and turn in a list of more than 75 words will receive an official Assateague Island Bioluminescence Button! No button requests by mail, please.

