



Guide's Guide

Nauset Light

Location Summary

Directions: One mile north of Coast Guard Beach on Ocean View Drive in Eastham.

Safety: Watch out for bicyclists and walkers.

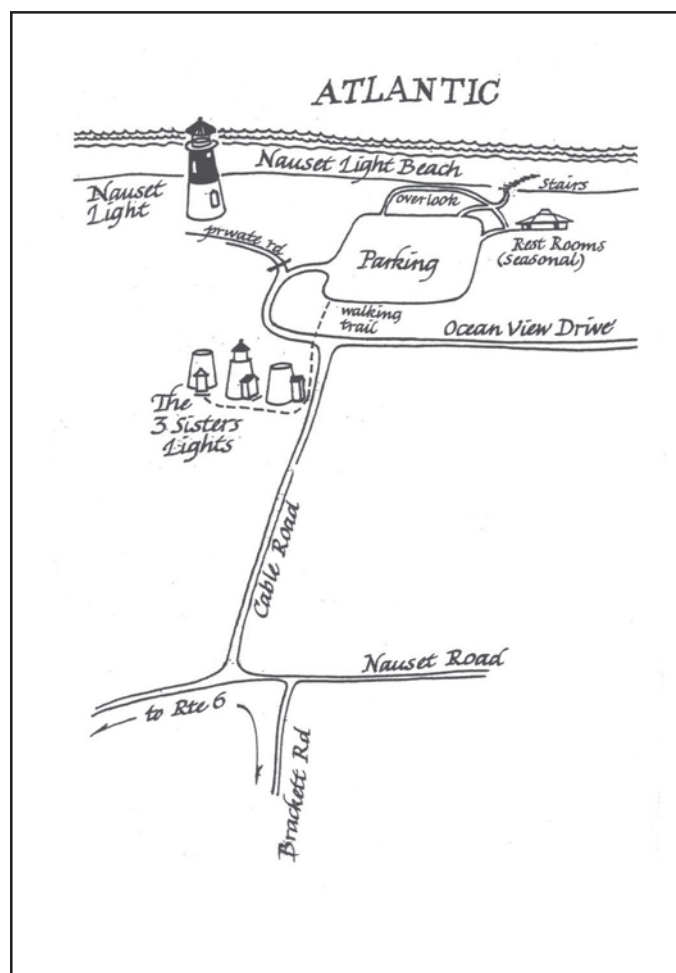
Other: Restrooms open seasonally.

Tips: Ocean View Drive offers one of the few roadside vistas of the Atlantic Ocean on the Outer Cape.

Time Frame: Five-minute narration time on board bus.
Ten to thirty minutes if stops made to observe lighthouses or other features of the area.

Notes for Educators: This area is the first visible portion of the glacial scarp (cliff) that drains from east to west between Eastham and Truro. This is a good place to conduct studies on marine communications (French cable operation and lighthouses) and coastal erosion.

Highlights: Ocean View Drive
Nauset Light Beach
Nauset Lighthouse
Three Sisters Lighthouses
French Cable Station Site
Glacial scarp and beach



Nauset Light

Prominent Natural Features

Nauset Light Beach consists of a broad, sandy beach that is contained by a steep glacial scarp behind it. During winter months, the beach profile is considerably lowered, sometimes exposing features such as the brick foundation of one of the earlier Three Sisters lighthouses.

The trail to the **Three Sisters lighthouses** travels through the emerging pitch pine forest.

Piping plovers, a threatened species under the Endangered Species act, nest on the outer beach from early spring to early summer. Nest sites are marked in order to keep visitors at a proper distance. **Avoid nesting shorebirds in spring (no dogs or kite flying allowed near nesting areas at this time).**



Nauset Light

Touring Script

After turning north onto Ocean View Drive, a spectacular vista of the Atlantic Ocean appears. The view is enhanced by the gradual rise in elevation between Coast Guard Beach and Nauset Light Beach. The reason for this is that the roadway hugs the outer edge of the glacial scarp (or cliff face) left behind during the last glacial ice period some 18,000 years ago.

The glacial scarps here are cliffs, not dunes, composed primarily of sand and gravel, which washed from a lobe of a great ice sheet that was located to the east of here. As sea level rose at the end of the ice age, the eastern most glacial deposits were washed away, leaving the remaining bulk of the Outer Cape as an east/west sloping plain of glacial outwash materials.

As the ocean cut into this formation, it created a steep cliff face that, in turn, supports a broad, sandy beach at its base. Wave and wind action separate sand from gravel and rocks, leaving the beach at the base smooth and even during the summer months. Additional wind and wave action transports sand into offshore sandbars, as well as north and south along the Cape Cod coast.

Three Sisters

Shipping was greatly affected by sandbars off the Cape Cod shoreline, and in 1838, local citizens convinced the federal government to build a series of three lighthouses in this vicinity to forewarn local mariners of the dangers. Three lights were needed to differentiate between the single light of Highland light in Truro and the two lights of the twin lights in Chatham. The first lighthouses at Nauset consisted of fixed lights in three white-painted-brick towers. The three stationary lights became known as the “Three Sisters” because, from the horizon, they resembled ladies in white formal dress with black top hats. But coastal erosion (which averages three feet a year along the outer Cape) eventually threatened these towers, so three wooden “moveable” towers were constructed to replace them in 1892.

In 1911, erosion once again threatened the lights, but this time, it was decided to move one tower back, equip it with a triple flash, and auction off the remaining two towers. (These were purchased by a local landowner and moved to their present site on Cable Road which is accessible by a footpath from the beach parking lot.)

In 1923, the last wooden tower was replaced by one of the “twin” towers from the Chatham Light. This cast iron tower was painted red and white and retained the triple flash to continue the lineage of the “Three Sisters of Nauset.” In 1981, the triple flash lens was removed (and is on display in the Salt Pond Visitor Center) and was replaced with an alternating red and white flashing light.

Another feature of maritime communications at this site is the remains of the French Transatlantic Cable Operation, which was set up here in 1879.

The 3,000 mile long underwater cable stretched between France, the St. Pierre Islands off Newfoundland, and Eastham. Cable operators at the Cape Cod site were responsible for sending, deciphering and re-transmitting messages. In 1899, a newer station was built in Orleans (now the French Cable Museum). The cable operated up until World War 11, when France was occupied by Germany. The only remains of the operation at Nauset Light Beach is a small workers’ hut, under which land and sea sections of cable were coupled.



Nauset Light

The Three Sisters of Nauset Lighthouses

The Three Sisters are a prominent part of local history. As one historian remarked, *The station got its nickname early on ... from offshore, the three towers looked like ladies in white dresses with black dress hats and veils peering over the edge of the cliffs...* Their history is equally interesting.

In the first sixty years of the national government's control of lighthouses, the location and construction of lights usually evolved from local requests made to Congress. On March 3, 1837, Congress called for a board of naval commissioners to examine the proposed sites and determine the necessity for a light at each one.

The First Nauset Beach Lights

Among those new lighthouses for which Congress made an appropriation in the March 3, 1837 act, \$10,000 was awarded for three designated lights at Nauset Beach on Cape Cod. The request for these lights evolved from a study made by the Boston Marine Society.

The rationale for lighting Nauset Beach was not one of providing top-of-the-line lighthouses. Oceangoing vessels that did not come close to shore at Nauset Beach could observe the Highland and Chatham lights and thus chart a course beyond the Nauset shoals. Only those coastal and fishing vessels that hugged the shore needed to be forewarned of the dangerous sandbars.

Congress approved the funds for the Nauset lights contingent upon an inspection of the site by a naval officer. Captain John Percival of the navy inspected the site and approved it as a necessary location for lights. David Henshaw, the Boston customs collector who acted as the area superintendent of lights, purchased approximately five acres of land at the Nauset site from Benjamin H. A. Collins of Eastham on September 14, 1837. Winslow Lewis, as low bidder, signed the contract on May 16, 1838. The contract called for three, round brick towers each fifteen feet high from the ground to the top of the walls.

Lewis' construction crew of four masons, two carpenters, three laborers, and a cook arrived in June. During construction, which took only 38 consecutive days, the workmen often ignored the building specifications. David Bryant, the construction supervisor, felt that the work had been so poorly accomplished that he refused to sign the completion certificate presented by Winslow Lewis which stated that the terms of the contract had been honorably fulfilled. Instead, he referred Lewis to George Bancroft, the superintendent in Boston. Bancroft informed him that Stephen Pleasonton, controller of the lights, had accepted Lewis' word that the construction had been properly finished. As a result Bryant signed the certificate.

Pleasanton, however, was not without his share of critics about the manner in which he operated the Lighthouse Establishment. Lieutenant Edward Carpenter was assigned as the inspector. He concluded, *I cannot believe that the Government will consent to consume 900 gallons of oil, when 300 or 360 will answer every purpose. Accordingly, I shall recommend the conversion of these lights into a single revolving red light.*

In May 1842, the secretary of the treasury appointed Isaiah W. P. Lewis, a civil engineer of unquestioned repute, to inspect the lights of Maine, New Hampshire, and Massachusetts and to report on their condition and management. Lewis, the nephew of Winslow Lewis, produced a document that did not flatter the Lighthouse Establishment or his uncle. He focused on the Nauset Beach lights as a typical example of fraud practiced by contractors. Lewis recommended that there be only one lighthouse at Nauset with a revolving light flashing every 1 1/2 minutes.

The Wooden "Three Sisters"

The Lighthouse Board annual report for 1892 stated, ... *three wooden movable towers were erected by hired labor,*

Nauset Light

The Three Sisters of Nauset Lighthouses continued

thirty feet to the westward of the old towers. This was done because of the washing away of the bank. Despite the jerry-built construction methods, the old masonry towers served for 54 years. The lanterns from the brick towers were moved to the new lights on April 25, 1892.

The circular, wooden towers were taller than the ones they replaced. Raising the lights could perhaps have stemmed from the findings of the 1851 investigation which concluded that many lighthouses were too short to serve effectively. At any rate, the new lights were 22 feet to the top of the tower, with an additional seven feet to the lantern's ventilator ball.

The fourth order Fresnel lenses, placed in the brick lighthouse lanterns in 1873, were transferred with the lanterns to the wooden towers. And in 1895, a storm porch was placed at the door of each tower.

By 1911, continuing erosion brought the Nauset Beach cliff to within eight yards of the north tower and eighteen yards of the one farthest south. As a result, it was decided to move the central light back from the cliff and use it as the only lighthouse into which a flashing light would be placed. Although technology had advanced to the point that a new, single flashing light could produce twenty times the brilliance compared to that of the three lights combined, illuminating power was not the only reason to reduce the lighthouse number to one. Three lights could be mistaken for one or two if a vessel sailed by them at certain angles. In addition, the double and triple light systems in separate structures were being phased out for economic reasons.

The central tower of the "Three Sisters" was moved near the 1875 wood frame keeper's quarters and attached to it by a short covered walkway. It rested on a solid brick foundation. The remains appear in the surf in winter at certain low tides. A fourth order Fresnel lens with a ball bearing flashing apparatus was installed. The light produced a triple flash every ten seconds when it went into operation on June 1, 1911.

Inspector H. C. Poundstone recommended that the two unused towers be torn down. Seven years later in 1918, the two lighthouses were sold. Helen M. Cummings bought the structures at a three-bid auction. She paid \$3.50 for both buildings and had to remove them from the property within ten days. They were removed and placed on a site near the French Cable Hut. In 1920, the two structures were moved inland, where they were butted into a 26 by 28 foot living room.

In December 1965, the National Park Service obtained the two towers from the Cummings' son, John. In 1980, the additions were removed, leaving the two structures freestanding.

The third of the "Three Sisters" remained in service until 1923. At that time, the disused cast-iron north tower at Chatham was moved to Nauset Light Beach and replaced the wooden third sister. Presumably, the lens was transferred to the metal tower at the time and is the one now on display in the Salt Pond Visitor center. In 1923, when the Chatham tower was moved to Nauset Light Beach, the 1875 keeper's dwelling was moved to a new location. In that same year, Albert Hall purchased the wooden tower with lantern and moved it. He built a single-story addition to the tower and named it the "Beacon." Windows were added at the ground floor and landing levels. The landing area was enlarged, but the wooden stairs remained in their original position.

Albert Hall's son, Harold, sold the structure to the National Park Service. In the summer of 1983, the one-story addition was removed, leaving the tower freestanding, and on September 13, 1983, it was moved to a site adjacent to the other towers.

Nauset Light

The French Transatlantic Cable

The French Transatlantic Cable was the first undersea communication cable between the United States and France.

In the 1870s, several communication corporations were formed as speculative ventures. One such organization, the Compagnie Francaise du Telegraphe de Paris a New York, began in 1879 with the objective of laying a transatlantic cable. In Great Britain, the company was known as the P. Q. Company after its president, Monsieur Pouyer-Quertier. Shortly after its inception, the corporation settled on a route from Brest, France, to the island of St. Pierre in the Miquelon Island group and then to Cape Cod. Using a cable built in England by the Siemens Brothers and an American ship, the *U.S.S. Faraday*, the cable was laid in four months. It stretched 2,242 nautical miles across the Atlantic to St. Pierre and 827 nautical miles from there to Cape Cod.

At the North Eastham terminal on Cape Cod, the company constructed a large building that served as a cable station. Here the messages were received in international code and, in turn, transmitted via an overland telegraph line to New York. The station had offices, quarters for the staff, and space for social gatherings. Because the cable arrived approximately two weeks before the structure was completed, office space was provided during that period in the basement of the Nauset Light Beach lighthouse keeper's dwelling. When the station was completed, the cable was transferred from the dwelling to the station.

The married workers built homes near the cable station at Nauset Light Beach. These men, however, subsequently complained that the isolated location created a hardship on them and their families. The school that their children attended, churches, and stores were far from their homes.

Building the Cable Hut

Because of the workers' plight, the cable company decided to center its Cape Cod operation in Orleans, Massachusetts, and opened a new station house in March 1891. A cable from the old station at Nauset was laid across Nauset Marsh to the foot of Town Cove at Orleans and then to the new cable station house. Maintaining the large, old station merely as a connection point proved too costly, and, as a result, the Nauset station house was sold in 1893 to A. W. Reed. At the same time, a small but that measured about ten by fifteen feet was constructed near the old station as a connecting point for the cable. That but was formerly part of the structure known as the French Cable Hut. It was common practice to erect cable huts if the station house were set a distance back from the shore.

When the but was constructed, it had shingle siding on the exterior and cedar shingles on the roof. The inside was not finished, with the studs visible. It was devoid of furniture. Only a connection box, fixed to the corner of the southwest wall above where the cable entered the structure, occupied the room.

The French Cable Company operated the cable until France surrendered to Germany in June 1940 during World War II. While that war continued and for several years thereafter, the cable but stood vacant. In the spring of 1949, Lorenzo Snow, who worked for the company, went to the cable but and found it padlocked. After making an inquiry, he found that the but had been sold to Dorothy LePage in 1946 for nonpayment of property taxes, even though the cable company had never been notified of such action.

Undersea Communications in General

More than six hundred cables have been laid around the world. Between 1857 and 1928, 28 telegraph cables were placed across the North Atlantic between Europe and North America. After 1928, those cables which connected Europe and North America were designed for telephone use. The early cables ran between Great Britain and Newfoundland or Nova Scotia connecting overland to New York with two exceptions.

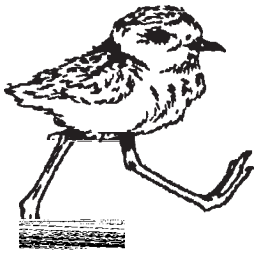
An 1869 cable laid by the French Atlantic Telegraph Company connected Brest, France to Canada via St. Pierre Island and the Compagnie Francaise du Telegraphe de Paris a New York's 1879 cable connected Brest, France to Cape Cod via St. Pierre Island. This was the first submarine cable to connect the United States to Europe. In 1897-98, the French Cable Company (Compagnie Francaise due Telegraphe de Paris a New York) laid the first cable directly between the United States and Europe. It ran 3,173 nautical miles from Brest, France to Cape Cod. This second cable to Cape Cod did not pass through the cable hut. It went directly to the Orleans station. In 1899, a submarine cable was laid between the Orleans station and New York.

The 28 submarine cables laid between North America and Europe from 1857 to 1928 are:

- 1857 Atlantic Telegraph Company
- 1858 Atlantic Telegraph Company
- 1865 Atlantic Telegraph Company
- 1866 Anglo-American Telegraph Company (England to Hearts Content, Newfoundland)
- 1869 French Atlantic Telegraph Company (Brest, France to Canada via St. Pierre Island)
- 1873 Anglo-American Telegraph Company
- 1874 Anglo-American Telegraph Company
- 1874 Direct United States Telegraph Company
- 1879 Compagnie Francaise du Telegraphe de Paris a New York
- 1880 Anglo-American Telegraph Company (renewal of the 1866 cable)
- 1881 American Telegraph and Cable Company (Cornwall, England to Canso, Nova Scotia. Connected from Nova Scotia to New York in 1889)
- 1882 American Telegraph and Cable Company (same route as its 1881 line)
- 1883 Commercial Cable Company (LaHavre, France to New York via England, Ireland, and Dover Bay, Nova Scotia)
- 1884 Commercial Cable Company (same route as its 1883 line)
- 1894 Commercial Cable Company (same route as its two previous lines)
- 1894 Anglo-American Telegraph Company
- 1897 Compagnie Francaise du Telegraphe de Paris a New York
- to 1898 (First direct cable from Brest, France to the United States)
- 1900 German Atlantic Telegraph Company (Europe to New York via the Azores)
- 1900 Commercial Cable Company
- 1901 Commercial Cable Company
- 1903 German Atlantic Telegraph Company
- to 1904
- 1905 Commercial Cable Company
- 1910 Anglo-American Telegraph Company
- 1923 Commercial Cable Company (Europe to New York via the Azores)
- 1924 Western Union (Europe to New York via the Azores)
- 1926 Western Union (same route as 1924 cable)
- 1926 German Atlantic Telegraph Company
- 1928 Western Union (New York to Europe via Newfoundland and the Azores)

Nauset Light

Piping Plovers



Piping plovers (*Charadrius melodus*) are special birds found at times on the beaches of Cape Cod. Since they are listed as threatened on the federal endangered species list, the National Seashore must do all it can to preserve and protect them while they are here. The question is: Why are they here only sometimes? One must explore the life cycle of the piping plover to come up with answers.

First, they are migratory birds. Those that come to Cape Cod do so to nest during the early spring to early summer. These birds migrate south along the Atlantic coast from North Carolina to Florida for the winter. But why leave Cape Cod?

Scientists feel that birds migrate in order to increase their chance of survival. When great ice sheets, or glaciers, covered New England-and created Cape Cod-the birds that lived here had to move south. Since other animals already lived in these southern areas, there was less food and living space to go around. So, as the glaciers slowly receded, those animals that had migrated south moved back. Some birds, like the plover, continue to migrate south for the winter months.

Try to imagine a Cape Cod beach. During the summer, tides deposit a line of seaweed and other treasures from the sea on a warm sandy beach. In and amongst this wrackline, the plover finds its favorite foods, beach fleas and insects, that also come to feed on the seaweed. But what does the beach look like during the winter? Cold and barren (though there is more there than meets the eye), and sometimes sea ice lines the shore. Though there is food, it does not equal the amount that can be found easily in the sunny south.

Habitat determines the number of birds that can live on a beach. For migrating birds like the plover, that means habitat in two areas: the nesting areas on the Cape and the areas where they winter in the south. If either of these areas is decreased by human activities or by some natural cause, the existing population will be threatened with extinction. Biologists for the National Seashore are now trying to figure out just how many plovers could successfully nest on Great Beach. In 1992, 27 pairs were found, almost twice as many as six years earlier. And the numbers have grown since then.

Invisible to Feet and Tires

Piping plovers nest in the sand of the upper beach beyond the high tide mark. The nest itself is no more than a shallow depression, something like your footprint in soft sand. This type of nest is called a scrape. At times it may be shaded by American beach grass (*Ammophila breviligulata*). Four eggs are then laid in the sand. Both parents take turns sitting on the eggs. When an intruder gets too close to the nest, one parent will quickly run away from the nest, peeping the entire time. This is how the birds distract predators like foxes from their nests. The eggs are light-buff colored with brown spots, effectively blending them into the sand. This protective coloration, as you may guess, has both good and bad points. While becoming invisible to predators in search of a meal, they are also invisible to feet and tires!

To help protect the nests, wire fencing, called a predator enclosure, is sometimes put up around each nest site that is found. The fence has holes big enough for the plovers to get in and out, but too small to allow entry to animals like foxes, skunks and raccoons trying to get to the eggs. Since the Seashore started this program, the number of chicks successfully fledging has increased from less than one chick per nest to almost three per nest.

When the fledglings begin to move away from the nesting area, their protective coloration stands them in good stead, as does their built-in fear response: duck and freeze. Often, the places that they choose to duck into are footprints or tire tracks in the sand. Because of this, the Park Rangers watch them closely and will close beach areas to over-sand vehicles (four-wheel drive cars and trucks) during this period.

It is hoped these efforts will help the threatened plover from becoming another number on the growing list of endangered species. By being aware of what it takes to keep one species of bird alive, we can join in the effort to help preserve all of life.

To help protect the nests, wire fencing, called a predator enclosure, is sometimes put up around each nest site. Please do not approach within 150 feet of enclosures.