

The shifting sands of Cape Cod

New landscape threatens refuge

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CHATHAM -- The Saturday after Thanksgiving, Chatham Harbormaster Stuart Smith drove down the long narrow peninsula known as South Beach -- and parked on what had been ocean three days earlier.

During a fierce Thanksgiving Day storm, surging seas had churned up and carried enough sand to the southern tip of South Beach to fill in what was once a wide inlet, connecting the remote South Monomoy Island to the mainland for the first time in almost 50 years.

The connection closed a popular boating shortcut from Nantucket Sound to the Atlantic Ocean, forcing vessels to travel 9 extra miles through a dangerous channel. Five coyotes have already been spotted at the new land bridge, worrying wildlife officials that more predators will have easy access to piping plovers and other rare birds on the island, part of a national refuge. Meanwhile, the thousands of seals that used to cut through the inlet to feed off the northeastern shore of South Monomoy are looking for a new place to go.

To many, the newly molded shoreline is a reminder that Cape Cod remains a geological work in progress that humans are largely powerless to control.

"Buy inland," joked Smith as he walked along the 200-foot wide connection last week. As it became clear in recent years that the inlet, which flows into a remnant of Chatham Harbor known as the Southway, was gradually closing, some boaters asked selectmen last year to dredge it. "But it was ridiculous -- it wouldn't last even three months before it filled in again," Smith said.

Cape Cod's coast continually changes, although it's rare to have a new shoreline such as the South Beach connection affect so many people and kinds of wildlife.

Every day, the Atlantic eats away vast amounts of material from the outer Cape, only to redistribute some of it north to build up Provincetown's hook, or south to help construct Chatham's spits, shoals, and sand bars. The southern edges of Nantucket can erode 3 feet or more a year, occasionally toppling homes into the sea. For generations, some Cape homeowners have tried to buttress their lands against nature's wrath but have had limited success.

But the Atlantic's pummeling dramatically increased about 6,000 years ago when an island that used to absorb much of the ocean's fury 100 miles east submerged as sea levels rose after the last ice age. That island -- now the lush fishing grounds of Georges Bank -- allowed the ocean's power to rush in. That energy continues to reshape the Cape today.

Chatham, at the elbow of Cape Cod, is in a precarious position because it is constantly receiving sediment at the same time vast amounts are being lost to the Atlantic. Its sand bars and channels shift so often, navigational charts are outdated almost as soon as they are printed; Smith continuously updates his charts with a black colored pencil.

Dramatic change comes to the community every few decades. A winter storm in 1958 separated Monomoy from the mainland. In 1987 a fierce winter storm cut through the middle of the long, narrow Nauset barrier beach that once protected downtown Chatham from the ocean, allowing the Atlantic to eventually wash away about 10 homes.

"It's an incredibly dynamic area," said Graham Giese, oceanographer emeritus at the Woods Hole Oceanographic Institution and senior scientist at the Provincetown Center for Coastal Studies.

Giese said the new land bridge has its origins in that 1987 break through Nauset Beach; the broken off southern section is now called South Beach by locals.

The opening to the Atlantic created a new pattern of currents that has caused South Beach to act much like an icicle: Sand is washed from its northern section to the southern tip. Growing several hundred feet a year, this tip began closing the Southway.

Two years ago, it became difficult to get fishing vessels through the opening. By this summer, only small boats could squeeze by, and then only at half or high tide. In early November, Monomoy refuge workers measured the opening at 90 feet across. Two weeks later it was 33 feet, and the Thanksgiving storm finished the job.

Since then, dozens of hikers have trudged the 5 miles from Chatham Lighthouse to the land bridge and sunk their feet in what was at first a gelatinous sludge but now is traditional beach sand. US Fish and Wildlife Service officials have placed new signs at the connection, reminding hikers that South Monomoy Island is part of a national refuge and wilderness area and that dogs are prohibited. The no-name connection looked so much like a long-lived beach last week, Smith had to point out its boundaries to a reporter.

One of the most serious threats is to navigation, because boats must travel an extra hour to get to the Atlantic around the southern tip of South Monomoy, a turbulent area where a tuna boat ran aground last year.

"People, especially recreational boaters, are unfamiliar with Monomoy Point," said Ted Keon, coastal resources director for Chatham, who urged extreme caution. "Fog can come in, people can be unsure where they are, and there are rip currents that can be dangerous."

On South Monomoy, US Fish and Wildlife officials say the land bridge formed right where the largest common tern colony on the Eastern seaboard is located. While coyotes have occasionally swum across the Southway in the past, officials are worried those animals along with skunks, opossums, and weasels can easily walk across to prey on the ground-nesting birds such as federally endangered roseate terns and threatened piping plovers. Refuge officials shoot animal predators and say they will have to be especially vigilant now.

Seals, meanwhile, have been spotted with more frequency near the Chatham Fish Pier, likely as a result of being unable to get through the Southway to feed and rest on the beach. While there is a wide opening between South Monomoy and North Monomoy islands, officials say it is too filled with shallow sand flats and shellfishermen for seals to feel safe navigating through it.

Geologists say that over the years, South Beach will slowly continue moving westward, and the cycle of breaks and reattachments will occur over and over until the land mass eventually finds some equilibrium.

"We spend so much time trying to harness the forces of nature that this is a good reminder that Mother Nature is very, very powerful," said Maggie Geist, executive director of the Association to Preserve Cape Cod. "I know people are surprised by the change . . . but that tells me they have lost the connection to their own geography."

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