



Coastal Erosion – Is it Pointless to Resist?

By DAVID McCORMICK
Newhouse Newspapers

CAPE HATTERAS, N.C. – They say it's been seen as far out as 50 miles offshore, on the dark nights when it pays to keep an eye out for such things. Since the days of the tall ships, first with whale-oil lamps and later with thousand-watt incandescent bulbs, the lighthouse here has cast a warning beam out across the treacherous shoals that lie in wait off just off the coast.

Generations of sailors have steered safe passage by its light, and the people of North Carolina have embraced it as a symbol of the state's rich maritime history.

But the landmarks of man mean nothing to the sea. Year after year, every high tide has edged just a little bit closer, until the lighthouse now stands just 150 feet from the pounding surf. Officials say that if something isn't done, it may be only a few years before the ocean claims it as one more victim.

No one wants to see that happen, but an important controversy has developed over how to respond. Beachfront erosion is worsening along every coast in the nation, threatening not just lighthouses but homes, hotels and other businesses. Meanwhile, scientists have shown that seawalls and other barricades are merely temporary solutions that often create even worse erosion elsewhere along the beach.

As a result, America's 18 coastal states are confronting a major debate over what, if anything, should be done to try to stem the tides.

Those who would let nature take its course have made the Cape Hatteras lighthouse their rallying point. Rather than try to wall off the surf, they propose to move the lighthouse.

“What they do here is going to set an example for the nation,” said Orrin Pilkey, a coastal geologist at Duke University who advocates a \$4 million plan to lift the lighthouse off its foundation and move it a half mile inland.

The National Park Service, on the other hand, has proposed building a \$6 million seawall around it. Pilkey said this would indeed save the lighthouse, but ultimately leave it standing on a small island as the ocean eventually surrounds it.

“It’s clear that relocation is the only way to save the structure as we know it,” he said.

Both ideas are now being studied by the National Academy of Sciences, whose report is expected to influence state governments’ response to coastal erosion for decades to come.

A Landmark Question

The idea of moving the lighthouse worries Ray Jennette, whose father and grandfather tended its lamps before the beacon was automated in 1950.

“I’m afraid they’d end up with a pile of bricks,” he said. “Having it out on an island would be better than that.”

Jennette carries on the family tradition as a park ranger at the lighthouse visitors center. He was born in the keepers’ quarters, and remembers as a child that the surf was still 400 feet away.

When the lighthouse was built, in 1797, it was 1,500 feet from the shore. Its construction was one of the earliest acts of Congress, when the waters off Cape Hatteras were already known as the “Graveyard of the Atlantic,” covering the bones of what has been estimated at 600 ships.

Over the ensuing years, the Outer Banks have become a living museum of various erosion control methods. The towering sand dunes that made the islands so attractive to tourists were non-existent until the 1930s, when the Civilian Conservation Corps bulldozed them into place in hopes of slowing the encroaching sea.

It didn’t help. “Today, we know that a flat beach hold up better,” Jennette said.

In the 1970s, 10 million cubic feet of sand was dumped in front of the lighthouse in hopes of gaining more ground. But the new sand eroded more quickly than the more densely packed original, something engineers are learning across the nation. In Miami, contractors must regularly replenish the new \$50 million beach dredged forth in 1977, when the Atlantic was lapping at the foundations of the grand hotels along Collins Avenue.

Rising sea levels brought on by climate change are only speeding the problem. In 1992, the Environmental Protection Agency estimated that the Atlantic had risen by one foot in the past 100 years, and would likely swell another three to seven feet over the next century.

That's a tidal surge equivalent to a year-round hurricane, and states are responding with an increasing number of limits to seaside construction. North Carolina now bans the construction of any new seawalls, while Florida prohibits new development along any stretch of beach seen as threatened within 30 years.

Pilkey said he's glad to see erosion starting to become framed as a problem with development, not the environment.

"Buildings are 100 percent of the erosion problem," he said. "There is no erosion problem until you build something next to the beach. If we can move a 20-story lighthouse, we can move a 10-story condominium."