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State park's wayward sands pose problems for scientists

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NAGS HEAD (AP) — Scientists, park officials and nearby residents face a unique problem at Jockey's Ridge State Park: What do you do when the park won't stay put? Strong winds are pushing the tallest sand dune on the Atlantic coast steadily south at a rate of 3 to 6 feet each year. Sand routinely spills onto backyards, driveways and local roads.

A haven for hang gliders, kite flyers and campers, the 419-acre park now is encroaching on Soundside Road, which borders the southern end of the dune.

"That's the trouble spot. That's the cork in the bottle," said Marshall Ellis, a resource management specialist with the N.C. Division of Parks and Recreation in Raleigh who has been studying the dune.

Researchers and park officials are trying to devise a long-term plan to corral the dune, which has migrated 600 feet in some areas.

The park service has bought houses, installed fences and bulldozed sand. In May 1995, officials asked the public for recommendations.

Five years later, the suggestion box is still open.

"Here we are trying to manage resources in a park that is inherently mobile within a fixed boundary," said Sue Regier, head of the resource management program with the parks division.

Five scientists recently completed a two-year study of the park's geological history and likely future movement. The researchers studied when and how the dune formed and how it has changed. They examined the sand supply, vegetation, wind and visitor impact.

Officials say the study will help them better understand the park's sand movement so they can contain Jockey's Ridge within its boundaries, but the options are limited.

Jockey's Ridge, bordered on one side by Roanoke Sound, is the southernmost in a series of massive dunes extending north to False Cape, Virginia. It is about 85 feet tall and contains 10.4 million cubic yards of sand, enough to fill about six million dump trucks.

"It's over a mile long. I tell people it's visible from the space shuttle," Ellis said. "It's quite a sand pile. It just won't stay still."

Officials want to preserve the dune because it provides a habitat for plants, wild game, birds and rodents that can survive the harsh and windy climate.

"Jockey's Ridge is one of the most unique natural areas in the world," said park superintendent George Barnes. The sand dune became a park in 1975; a 25th anniversary celebration is planned for June. More than 1.2 million people visited the park last year.

Scientists believe the sand originally came from offshore islands and was transported by strong winds. Recent storms — including Hurricanes Dennis, Floyd and Irene — continue to wreak havoc on the dune.

"This place is pretty fragile. Anything you do has an effect on it," Barnes said. "It moved a lot faster because of the storms.

The storms really messed us up."

Cola Vaughan co-owns and manages a rental home on the same side of Soundside Road as Jockey's Ridge. Part of the sand dune looms over the house's backyard. Vaughan said when it happened before, the park service moved the sand.

"I'm not terribly concerned," he said. "If they do a haul like they did four or five years ago, that will keep the sand under control. They want their sand. It's like owning a dairy farm, and the cows keep wandering off."

Researchers say the dune is losing its height, although the amount of sand is the same. Once a pointy, 110-foot-tall behemoth, it now is 25 feet shorter and rounder.

The park swallowed a miniature golf course; the turrets of the course's miniature castle poke from the mounds of sand. The park service bought the land as well as six threatened houses. A massive pile of sand occupies the spot where one house was torn down.

Barnes said officials will consider buying other properties if the owners make an offer.

"We can't keep buying up property. Our neighbors probably wouldn't want that," Regier said. "We're dealing with them as willing sellers. We're not actively pursuing them, though the dune could be."

Four-foot-tall fences and old Christmas trees placed throughout the park to catch the sand now are buried in it. Only a few branches and fence posts are visible.

Researchers and park officials are reviewing countermeasures.

"You've basically got three choices," Ellis said. "You can do nothing, which is not an option, you can haul sand away on a regular basis, or you can vegetate it.

"Hauling is what we've been doing, but hauling sand is expensive," he said.

Regier said 50,000 cubic yards of sand could be moved about every five years from the park's southern end to the northern end for recycling back through the dune.

Barnes said 40,000 cubic yards of sand were moved in 1994; 8,000 cubic yards in 1996; and 4,000 cubic yards a month ago. Park officials are planning to move another 40,000 to 50,000 cubic yards of sand within the next month.

Regier said a regular bulldozing program could put the park on a cycle that might control sand movement without harming the dune.

"Hauling sand seems to be the only sure decision now," Ellis said. "Hauling sand is the easy thing to do."

Park officials also are considering planting vegetation. The study shows the dune was stabilized twice that way since its development, but fire, wind or salt spray destroyed the vegetation.

Regier and Ellis warn that anchoring the dune with plants would defeat the purpose of having an active dune system.

Most residents feel the same way, said Majid Elbers, president of the board of directors for the Friends of Jockey's Ridge. She lives at the northern end of the park.

"Everybody who has been involved in this project in any way has (been opposed) to grassing it over," she said. "What's exciting about the park is the sand."

The Wright Brothers Memorial in nearby Kill Devil Hills once had a marching dune, but in the late 1920s, the state stabilized the dune with grass, and it now is a grassy hill, Ellis said.

"If we're going to vegetate it, we're only talking about this southern end. But the majority of the park, we would not even consider that," Ellis said. "We acquired the dune because we wanted to keep it as a naturally functioning dune."