

Great Sippewissett Salt Marsh Threatened

Barrier Beach Eroding At Alarming Rate

By BRENT RUNYON

During the astronomically high tide that coincided with Hurricane Sandy last month, the waters of Buzzards Bay came close to washing over the barrier dunes that separate Black Beach from the Great Sippewissett Marsh in West Falmouth.

Had the waters breached the barrier dunes the water could have disrupted the sensitive marsh ecosystem of threatened, rare and endangered species, said Robert B. Hamilton Jr., a coastal engineer at the Woods Hole Group. "Salt marshes in general are a tremendous habitat for birds and fish and vegetation," he said. "Salt marshes are really where, for a lot of species, life starts."

The Great Sippewissett Marsh is home to endangered species including piping plovers, New England blazing star, and Arethusa, a perennial orchid. The marsh is also a habitat for 40 critical species including least terns, Northern diamondback terrapin, salt-pond grass and bushy rockrose. The marshes and creeks also provide nursery areas for commercially important winter flounder, bluefish, striped bass and tautog.

The Black Beach area of West Falmouth, like other areas of Falmouth, is vulnerable to storm damage, said S. Jeffress Williams, a scientist emeritus at the United States Geological Survey, but with Hurricane Sandy, it could have been worse. "Sandy was really a minimal storm, as far as storms go," Mr. Williams said. The fact that she turned west south of Cape Cod meant a glancing blow for Falmouth. "If we didn't have that high pressure system, the damage would have been much worse."

Of course, this is not the first storm to damage the barrier marsh. Hurricane Carol in 1954 and Hurricane Bob in 1991 low-

ered the elevation of the dunes significantly, said Daniel H. Shearer, who owns a 9.5-acre property just north of Black Beach. "We have, in front of my house, a stone barrier, and until Hurricane Bob no one knew it was there," he said. The dunes were so high when Mr. Shearer was a boy he remembered skiing on them.

Storms cause the most dramatic

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Falmouth May Receive Storm Funding

By MICHAEL C. BAILEY

The Town of Falmouth could within the next few weeks get a sense of whether it will be eligible for disaster relief funds in the wake of Hurricane Sandy.

Mark D. Sullivan, chief of the Falmouth Fire Rescue Department, met last Thursday with representatives from the Federal Emergency Management Agency (FEMA) and the Massachusetts Emergency Management Agency (MEMA) to review the town's preliminary damage assessments from Hurricane Sandy, which hit Cape Cod on October 29.

The chief's two-hour meeting last week involved a review of the town's preliminary damage assessments to see if we're getting more or less money than we asked for. It's quite an involved project, but it's worth it because the community gets some money back for its expenses from the storm.

"We're just right at the beginning of the process," Catherine

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changes to the beach, but erosion is ongoing at Black Beach, which damages the barrier to the Great Sippewissett Marsh. Black Beach has eroded at high rates, between .79 and 1.21 feet a year, since 1845, according to a study of historical shoreline change the Woods Hole Group published in 2002.

The changing shoreline is nothing new. Mr. Williams said that 20,000 years ago the water levels were 400 feet lower than where they are now, but climate change is increasing the rate of sea level rise. "Issues with storms and sea level rise are just starting now and they're going to get progressively worse in the future," he said.

But efforts have been made to protect the area in the past. The sensitive ecosystem has been protected as a District of Critical Planning Concern (DCPC) since 1996, because of concerns that continued development would cause irreparable harm to the Great Sippewissett ecosystem.

The 370-acre Black Beach Great Sippewissett Marsh DCPC is bounded roughly east to west by Route 28A and the Buzzards Bay shoreline, and north to south by Chapoquoit Road and Saconnesett Hills.

The DCPC document makes clear that the marsh has more than just ecological value. Much of the knowledge about the function and human value of the New England saltmarsh has been learned from scientific research conducted in the Great Sippewissett Marsh. More than 100 scientific reports on the marsh accumulated scien-

tific data over three decades that is without equal in the world, according to the report.

The purpose of the DCPC, among other things, is to maintain the barrier beach and dune system and to protect the area against storm and flood damage. It was the first DCPC created on Cape Cod after two years of work. But the next year Falmouth Town Meeting rejected a zoning bylaw that would have given the designation teeth.

After the DCPC was passed, there were plans to replenish the Chapoquoit Beach area to slow erosion, but those plans have been tabled. Mr. Hamilton worked on a proposed beach replenishment project for the Chapoquoit Beach area for the town and residents that would have added 98,000 cubic yards of sand to the beach spread over 12 acres to slow beach erosion.

The beach nourishment project was expected to start in 2002 or 2003, but never happened after concerns about the cost of the project. "It became clear that it was something that wasn't going to happen," Mr. Hamilton said. "I think it will someday. I think it's inevitable. The beach isn't going to stop eroding," he said.

It will take significant investment to maintain the property and protect the marsh. Already the town has committed \$250,000 to fund the design and reconstruction of a 150-foot section of the Chapoquoit Road seawall north of Black Beach.

Mr. Shearer, who recently offered his property on Black Beach to The 300 Committee to turn it

into conservation land, agreed. "We have to work on our dunes if we want them to stay," Mr. Shearer said. "We can't go out and have them cleaned of seaweed. Seaweed holds the sand. We do not have a swimming pool, we have a beach."

But whatever investments are made to hold back the rising sea will not hold forever, Mr. Williams said. "All of those are temporary measures," Mr. Williams said. "There is no permanent solution to sea level rise."

What Falmouth needs is a town-wide comprehensive plan to manage the coasts as sea levels continue to rise, Mr. Williams said.

Addressing each flood as an individual event misses the larger point that sea levels will continue to rise, the barrier beach will continue to erode and the shoreline will continue to change. "The impact is really on the folks that live along the shoreline," Mr. Williams said. "We need to recognize that in the decades ahead our coastlines are likely to be very different."

Over the years, discussions about the DCPC in Black Beach and the Great Sippewissett Marsh have become less common, Mr. Shearer said. "I finally threw away my copy of the DCPC when I moved," Mr. Shearer said. "It was 15 years old and nobody seemed to care about it."