

Scientists cite new obstacles to rebuild vanishing beaches

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WOODS HOLE — Sandy beaches drive the Cape and Island's tourist industry and property values. But they have never faced as high a risk as they do now, squeezed between homeowners who want to protect their property and a remorseless ocean.

With growing concern over global warming as a backdrop, 140 erosion experts, town, state, and federal officials, coastal engineers, and ordinary citizens crowded into a hall at Woods Hole Oceanographic Institution to hear about what many believe may be the last resort in preserving the Cape's beaches.

Called "beach nourishment," the coastal erosion remediation efforts involve moving thousands — sometimes millions — of cubic yards of sand to beaches from offshore or inland sources.

"There isn't a town in Massachusetts that doesn't have some linear stretch of their beach where there is no beach at high tide," said Jim O'Connell, a coastal geologist with the Woods Hole Sea Grant program and the Barnstable County Cooperative Extension. O'Connell helped organize yesterday's forum.

Beach nourishment may be the best hope for eroded beaches, but the expense and regulatory hurdles left many participants in yesterday's forum fearing the worst.

"What we've been told is to forget about the offshore areas," said Joe Orfant, director of the Boston Harbor Beach Program.

Orfant has been trying for eight years to get permission to dredge 350,000 cubic yards of sand from deep water to rebuild beaches in Winthrop.

Typically, beaches retreat over time as the tides and storms erode sand away. The natural beach erosion process is not entirely negative — some eroded sand helps build offshore sandbars that protect beaches from the full impact of destructive storms.

Seawalls and other protective structures disrupt the natural process, keeping sand eroded from a beach from feeding sandbars. Waves then scour the sand in front of seawalls, until there is no beach at low or high tide.

"Ironically, we want to rebuild the beach to protect the seawall," Orfant said of the situation in Winthrop.

The problem with getting approval for beach nourishment in Winthrop, Orfant said, is National Marine Fisheries Service protections for essential fish habitat.

With New England's traditional fish stocks still struggling to recover from chronic overfishing, the federal agency is reluctant to disturb underwater habitat for any reason, Orfant said.

Louis Chiarella, the Northeast essential fish habitat coordinator for the fisheries service, said the federal agency is seeing more Massachusetts requests for large volume sand mining offshore.

He said the fisheries service allowed such operations in the Mid-Atlantic states because the sand there gets moved around a lot by storms and isn't as suitable for fish habitat as New England's cobbled bottom.

Protecting fish habitat is just one of many hurdles for beach nourishment projects. Endangered shore birds and beetles, and even the type and color of sand must also be addressed.

Some participants at yesterday's forum discussed beach nourishment success stories on the Cape and elsewhere in the state.

The effort to replenish Revere Beach in 1991 was heralded as a major accomplishment, with minimal loss of beach sand in the years since. Smaller projects at Dead Neck in Osterville and Long Beach in Centerville were also praised for their effectiveness.

Wayne Jaedtke, program manager for the Barnstable County dredge, said that 92 percent of the 1 million cubic yards of dredge material removed over the past 10 years had been recycled onto Cape beaches.

O'Connell said dredge materials didn't come close to meeting the need. He agreed with Orfant that offshore sand resources probably will be off-limits, suggesting towns and homeowners would be better off looking for inland sources of sand.

For residents along Baxter Road on Nantucket, erosion has erased much of the coastal bluff in front of their waterfront homes.

Desperate for a solution, Baxter Road residents are willing to spend many millions of dollars to rebuild the beach and bluff with sand dredged from a spot three miles offshore. That's still far cheaper than the estimated hundreds of millions of dollars it could have cost to transport sand from the mainland.

Andrea Langhauser, beach access expert for the state Department of Environmental Protection, offered a word of caution for homeowners seeking government assistance to address beach erosion.

Homeowners who receive sand purchased with public money must sign an easement granting the public the right to walk across their beach below the high tide mark, she said.

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