

# Deer Island, Katrina Key expansions promise environmental benefits, storm protection

August 15 2024, by Samuel Hughes, The Sun Herald

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Amid predictions of sea level rise, higher storm surge and increased storm activity, the U.S. Army Corps of Engineers and the Mississippi Department of Marine Resources have launched two projects to increase

the security of the Mississippi coastline.

The Corps' project manager, Matthew Scott Ellzey, said the agency will begin a \$30 million, 400-acre expansion of Deer Island's east end this spring. The project aims to restore the island to its 1850 dimensions, creating [natural habitat](#) for many wildlife species while providing storm protection to the cities of Biloxi and Ocean Springs.

"This includes 128 acres of tidal marsh habitat, 78 acres of coastal maritime forest and then increasing the beach and dune habitat for sea turtles. The ecosystem is going to be a good habitat for an [endangered bird](#) called the piping plover, so bird species, and there's several bald eagles that nest there too," Ellzey said.

Ellzey said that in the project's first phase, the Corps will build a breakwater, a structure to protect against tides and waves, to keep safe new sand dunes to be completed by summer 2026.

The new dunes will follow the southern length of the island, eventually rounding out the eastern end and forming an enclosed lagoon. This second phase will restore some of the island's elevation and is expected to be complete by fall 2027.

Ellzey said repeated storms have broken down the coverage of Deer Island's forest. The project's third phase, which will replant pine and live oak trees, is expected to be complete by the fall of 2028.

Justin McDonald, chief of civil works programs at the Corps Mobile District, said that in the years following the dune construction, the agency will dump dredge material within the boundaries of the new dunes to create new marsh habitat.

"One of the objectives of a lot of these coastal restoration efforts is to

try and help nature keep up with [sea-level change](#)," McDonald said.

"One of the big pushes around the nation is to beneficially use the material that we dredge out of our channels to help provide a sediment source for either re-nourishing marshes that need sediment because they can't keep up with sea-level change, or they don't have a good natural source of sediment, or to create new marsh."

The expansion of Deer Island is a part of the Corps Coastal Resiliency Program, which intends to protect the mainland through the restoration of barrier islands, beaches and marshes. This program included a major restoration of Deer Island in 2013, as well as [restoration projects](#) on other Mississippi barrier islands.

After the project is completed, Deer Island will fall under the management of Mississippi's Department of Marine Resources. DMR Chief Scientific Officer Rick Burris said the agency will ensure the new habitat remains functional for various [wildlife species](#), prescribing burns when necessary to maintain the new maritime forest.

"We also want to make sure that it has the right habitat to promote native species and threatened and endangered species, while also making sure that we remove all invasive species," Burris said. "Ultimately, the overall outcome is going to provide storm protection for the mainland, provide a good area for migratory birds, nesting areas, and then, public access and recreational use."

## **Katrina Key**

The Mississippi Department of Marine Resources is working on an \$8.49 million project to extend Katrina Key, an artificial reef southeast of Deer Island constructed from the rubble of Biloxi Bay Bridge, which Hurricane Katrina destroyed.

DMR is designing a 2.6-mile extension of Katrina Key to the west, opposite the Deer Island expansion eastward. Burris said the project's main objective is to create additional fishery habitat while providing shoreline protection to Deer Island. Katrina Key is popular among recreational fishermen angling for speckled trout, Spanish mackerel and red drum, among other fish species.

"It's a key—it's essentially an artificial reef that comes out of the water and provides vertical habitat from above the water all the way down to the bottom," Burris said. "The secondary aspect of that is it's going to provide shoreline protection, and it's going to provide some wave attenuation for the off-bottom [oyster](#) aquaculture."

Oysters require balanced water conditions to survive. The area north of Katrina Key and south of Deer Island is an ideal location for off-bottom oyster aquaculture and is the only active location in Mississippi approved for year-round farming. Burris said the extension of Katrina Key should calm wave energy in the area.

Thomas Piecuch, owner of Holy Ground Oyster Co., recently stood in his skiff off Katrina Key, his oyster farm about 400 yards from Deer Island. He said that since he started his company in 2021, more people have become interested in cultivating and buying farm-raised oysters.

Piecuch, formerly a marine biologist, said the impacts of the Deer Island project on oyster farming remain to be seen.

"It's 400 acres of material being dumped out there, it's gonna stir up a lot of sediment, and that sediment could settle onto our gear, our oysters, and potentially kind of smother them out. It could change currents, it could change the current erosion and deposition pattern on the island," Piecuch said.

"It could be net beneficial. If there's any potential for any freshwater coming out of the bay, it could help bypass the farm and go into the Sound, instead of wrapping around—a lot of that's kind of wind current—and it could, you know, keep salinity levels high. The oysters like salty water. So, I think it's kind of something where you'd have to wait and see."

Peicuch also said the Katrina Key project could have a mixed impact on off-bottom oyster farming. He said current high wave energy helps tumble the oysters into the shape farmers are looking for, and a change in that wave energy could cause farmers to change practices.

Burris expects the Katrina Key project to begin construction within the next year. Construction will be a year-long process using concrete reef modules.

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Citation: Deer Island, Katrina Key expansions promise environmental benefits, storm protection (2024, August 15) retrieved 15 August 2024 from <https://phys.org/news/2024-08-deer-island-katrina-key-expansions.html>

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