

Lack of rain stunts recovery of some vital wetlands damaged by Hurricane Ike's storm surge

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McFADDIN NATIONAL WILDLIFE REFUGE — Even one of the wettest places in Texas is in need of rain.

Here along the upper Gulf Coast, amid a landscape of shallow ponds and grassy flats, it's a particularly bad time for a dry winter.

Without the usual rainfall, the region's freshwater and brackish marshes cannot flush the saltwater dumped by Hurricane Ike six months ago. As a result, the withering wetlands are covered by dead cattails and cord grass.

"We're seeing very little life out of the marsh," said Jena Moon, a U.S. Fish and Wildlife Service biologist based at the refuge near Port Arthur.

The health of the marshes is a pressing concern, because they act as nature's speed bumps, slowing down hurricanes and suppressing tidal surges. The marshes also provide feeding grounds for migratory birds and nurseries for fish.

Ike hit the coast along the refuge with a 17-foot tidal surge and carried saltwater and debris over the marshes to Highway 73, more than 10 miles inland. The surge also devastated the beach ridge in front of the marshes, lowering a natural buffer from creeping seawater at high tide.

It's unlikely the marsh system will recover to pre-Ike conditions without "radical intervention," according to a recent Federal Emergency Management Agency report. To restore the marshes after Ike could cost tens of millions of dollars, state and federal officials said.

Open water

There is the fear that once-healthy marshes will turn into open water over time, no longer able to absorb some of a storm's wallop before it reaches homes and heavily industrialized areas. Experts estimate that every 2.7 miles of wetlands will reduce a storm's tidal surge by a foot.

The disappearance of wetlands has been a problem for decades before Ike. From 1998 to 2004 alone, the Gulf Coast lost 96 square miles of marshy land per year, according to the National Oceanic and Atmospheric Administration's most recent data.

Flood control, man-made canals and oil and gas drilling have played a role in the loss of marshland. What's more, the land is sinking, and the rising sea level, a result of warming oceans caused by climate change, will only make things worse, experts say.

A hurricane itself isn't necessarily bad for the marshes, because it kills exotic plants and brings sediment, said Dean Bossert, manager of the McFaddin refuge for three years.

"In the long run, it's good," Bossert said. "In the short term, it's bad."

And it's really bad now because of the lack of rain.

Before receiving about two inches of rain last week, the refuge, like most of Texas, hadn't seen significant rainfall since Ike. Historically, the area receives nine inches of rain in January and February — enough to flush the saltwater from the marshes, Bossert said.

To McFaddin's north end, samples still show salt levels as high as 20 parts per thousand in water that usually has no salinity. Water begins to taste salty at six parts per thousand, officials said.

The higher salinity has threatened important habitats for an astonishing range of life, from amphibians to fish to migratory birds. Alligators, frogs and turtles have all but disappeared.

The saltwater also has killed vegetation throughout the refuge, prompting land managers to burn acres of brown plants and grasses with the hope of stimulating new growth. Over time, the salt levels could alter the area's food chain, including the nurseries that produce blue crab, red drum and white shrimp, among other commercially important species.

Meanwhile, Ike's long-term impacts on Galveston Bay's coastal marshes are thought to be negligible, officials and environmentalists say. That's because the marshes, which are sloped toward the bay, drained quickly after the hurricane. The marshes to the east of the bay are concave in shape.

State and federal officials estimate that Galveston Bay will need \$50 million for large-scale restoration of its marshes, while McFaddin's new beach ridge will cost about \$80 million.

Ike reduced the ridge to three feet in height. To restore the marsh behind it, the refuge's managers plan to rebuild the ridge to 4½ feet with replacement sand pumped from the Gulf.

But the fix would only be temporary, as hurricanes reoccur, said Robert Young, a coastal geologist at Western Carolina University.

“We can’t keep the status quo forever,” he said