Study examines impact of climate change on Louisiana's Houma tribe

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Social work professor Shanondora Billiot studies the United Houma Nation's experiences with climate change and the impact it is having on tribal culture and members' health and well-being. Credit: Fred Zwicky

Repeated disasters and environmental changes on Louisiana's Gulf Coast

are rapidly eroding the land, and along with it, an Indigenous tribe's ability to sustain its culture, health and livelihoods, new research suggests.

Shanondora Billiot, a professor of social work at the University of Illinois, interviewed 160 members of the United Houma Nation living in Terrebonne Parish—one of six districts in the tribal service area bordering the Gulf of Mexico—about the effects of climate change and land loss on their families.

The Gulf Research Program of the National Academies of Science, Engineering and Medicine recently awarded Billiot an Early-Career Research Fellowship to support her ongoing research on the Houma tribe .

Billiot spent six months in the community recruiting study participants, lingering at marinas, docking stations, commodity distribution sites and other places where tribe members gathered to talk.

Although Billiot is a tribe member, she said many of the Houma were reluctant to talk with yet another climate change researcher until she had been vetted by tribal leaders and mutual acquaintances, and they were confident the research would be culturally sensitive and the findings shared with members of the community.

"The guy that owned the docks said I couldn't just be this awkward person sitting there, listening and staring, that I had to participate," Billiot said. "I helped knit crab traps, sorted shells one day and did things to be of assistance" and build rapport.

Environmental change is whittling away Louisiana's coastline, and scientists predict that erosion and rising sea levels will consume an area comparable in size to that of Baltimore and Washington, D.C., by 2050.

Inhabiting a region that is covered by 90% water and marshland, many of the Houma tribe, which includes about 17,000 people in Southeastern Louisiana, earn their living through fishing, shrimping, trapping and other subsistence activities.

The landscape is changing so rapidly, fishermen said they can no longer navigate by sight and must rely instead on GPS and radar systems.

"Participants who are away from the coast for a few months or a season have trouble recognizing certain places when they return" and easily get lost, Billiot wrote.

"They can't go out to these islands where they used to go and show their grandchildren how to trap," Billiot said. "They can't show them where some of their ancestors are buried because that land is not there anymore."

"We've lost a life that already will never be restored," one person told Billiot.

Tribe members expressed a deep sense of grief about the land that is gone, and they "did not seem hopeful that future generations will be able to continue the traditional way of life because the land has changed so much during their lifetime," Billiot wrote.

Raised to live off the land and grow their own food, tribe members learned from their elders how to care for the environment, Billiot said. However, some traditional practices such as burning portions of the marshland each year to promote healthy regrowth or to flush out game for hunting are now considered dangerous or illegal.

Over the years, dams have cut off the supply of fresh water to the marshes, killing trees and vegetation. "Black water"—water polluted by

flooding, agricultural runoff and oil drilling—is killing fish in the Gulf, bayous and canals, fishermen said.

Accordingly, fishermen have noticed that the volume of their seafood harvests has declined, as have the size and weight of the shrimp.

With the climate warming, some waterfowl have changed their migratory patterns, arriving later than they did in the past, limiting the time that hunters have to collect them during Louisiana's hunting season, they said.

While tribe members' traditional diets consisted largely of fresh fish and home-grown vegetables, the incursion of salt water has rendered the soil too salinic for growing vegetables and the roots and trees used in traditional Houma medicines. Tribe members now must use raised beds to garden, cultivate land away from their homes or buy the fresh produce and traditional medicines elsewhere.

As produce and seasonal freshwater fish become less plentiful, tribe members said they're noticing health implications. Cancer diagnoses, which were rare when they were young, are commonplace among community and family members now, elders said.

The environmental and cultural changes also chafe old wounds from individual experiences with racial discrimination and the tribe's collective history of forcible relocations. Some tribe members believe that corporations and government officials want to drive them off their land to make way for lucrative tourist developments.

"People are not included in decisions that directly impact them. They feel a lack of agency," Billiot said.

Trauma and crisis interventions are needed for the Houma and other

Indigenous people who are disproportionately affected by land loss and climate change, she wrote. Social workers can help members of these communities adapt by conducting vulnerability assessments, developing disaster preparedness plans and implementing educational and sustainable living programs.

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