

## A Maine shellfish harvester has a guess why his town is losing its mud



by [John Boit, Castine Patriot](#)

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*Stefan Claesson, owner of a New Hampshire-based aerial survey company, readies a drone for a flight over Penobscot's Northern Bay on Aug. 22. The drone was being used to map Penobscot's intertidal zone to better understand how rising sea levels will affect mudflats in the future. Credit: Courtesy of John Boit / Penobscot Bay Press*

PENOBSCOT, Maine — The town of Penobscot's shellfish committee has teamed up with a Massachusetts nonprofit and a New Hampshire drone operator to solve the case of Northern Bay's disappearing mud.

Manomet Conservation Sciences, a Massachusetts-based nonprofit that studies coastal ecosystems, contracted a New Hampshire-based drone operator to map the 1,000 acres of mudflats on Penobscot's Northern Bay on Aug. 22. The drone's multiple morning flights across the bay at the low tide will hopefully yield detailed maps that can provide insights into what is happening to the mud, researchers say.

The research project is part of a collaboration with Penobscot's shellfish committee, chaired by Bailey Bowden.

"The shellfish committee is concerned about the disappearance of the soft peanut butter mud in Northern Bay," said Bowden, who grew up in Penobscot and who says that "at least a foot" of mud appears to have sloughed off from the top of Penobscot's once-productive clam flats.

"I've been watching this for 50 years," Bowden said. "More rocks are appearing on the flats. There used to be a few boulders. Now there are all these other rocks appearing, from the size of a basketball to a car engine. Where the hell are these rocks coming from?"

One of Bowden's theories as to why this is happening is intriguing researchers at Manomet.

Decades ago, Bowden said, the bay regularly froze over for months at a time during winter, protecting the soft mud from violent storms, wind and wave action. Now the bay rarely freezes over, leaving the muddy ecosystem completely exposed to the elements over the winter, resulting in mud being scraped off the top and sent down the tidal Bagaduce River.

"It used to be you'd go out on the mudflats and sink up to your knees," Bowden said. "Now you sink up to your ankles. With all the talk about climate change, no one has talked about the implications for shellfish harvesting. How much of the flats will be lost?"

Emily Farr, a fisheries program manager at Manomet, said the mapping project shows the valuable intersection of local harvesters' knowledge and scientific data.

"Bailey knows better than anybody else what's happening out there," Farr said. "The drone survey helps get really detailed observation data so we might be able to see what we might lose of the mudflats."

The drone, operated by Stefan Claesson and Sam Johnson of the New Hampshire-based survey company Nearview, will create detailed maps of the flats using Lidar, a technology that uses lasers to create highly accurate measurements from the air. In addition to mapping elevations of the mudflats, Nearview also will be able to map the low tide mark, data that can be used in the future to measure changes in water levels due to rising seas.

Data from the mapping project, which is also conducting research in Scarborough, are expected to be released to the public in mid-2025, Farr said.

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