

## 'A risk for the future': How warming oceans are disrupting America's seafood supply



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Recorded temperatures in the Atlantic Ocean are increasing at an “alarming” rate, according to one scientist, and forcing fisherman to confront a seafood industry primed for disruption.

Scientists at the Woods Hole Oceanographic Institution (WHOI) in Massachusetts recorded 2017 as the warmest year on record for water temperatures in the Northeast. Glen Gawarkiewicz, a senior scientist at the institution, said 2019 was equally “disturbing,” adding that over the past seven years, water temperatures off southern New England have increased by nine degrees Fahrenheit, faster than any region outside of the Arctic.

“The ocean is changing pretty rapidly,” Gawarkiewicz said. “Typically, temperature variations might be two degrees Fahrenheit there, and fish are probably sensitive at about one-degree Fahrenheit there. So, it’s almost an order of magnitude more that you normally need to get some kind of change.”

With 2020 already shaping up to be one of the [warmest years on record](#), there is growing concern about the sustainability of the fishing practices that have dominated this region for generations. Scientists say lobster, a mainstay in waters off of Cape Cod, are moving further north into deeper waters, while warm-water fish are moving in. The dramatic shifts are re-shaping the ecosystem here, potentially putting the traditional food-supply in jeopardy.

“Certainly, many of the locally caught seafoods in New England are iconic,” Gawarkiewicz said. “I think it is a risk for the future there.”



A lobster is removed from a trap at the Sandwich Marina in Sandwich, MA on July 17, 2019. (Photo by John Tlumacki/The Boston Globe via Getty Images)

Fears about that risk of warming climates have only been magnified by the coronavirus outbreak. As lawmakers look to craft economic policy to lead countries out of this pandemic, researchers, as well as citizens concerned with the fallout from greenhouse-gas emissions, have urged governments to adapt sustainable solutions, to avoid exacerbating a public health crisis with a climate crisis. The sudden shutdown, caused by stay-at-home restrictions are expected to [reduce CO2 emissions by 8%](#) this year, strengthening the case for collective, global action.

## **Diversification a necessity**

For his part, Gawarkiewicz believes that the region needs to diversify economically — meaning expanding beyond traditional catches like American lobster and supplementing with other, non-traditional species, like the Jonah crab.

“Jonah Crabs used to almost be like trash. People would throw them away,” said Bobby Colbert, a longtime fisherman who, along with his brother Denny, operates a fleet of boats out of Sandwich, Massachusetts, on Cape Cod, and has been fishing the mid-Atlantic waters for 35 years.

The market for Jonah Crabs has spiked, growing from only about 1 million pounds being caught in 1990 to 19 million pounds last year, according to Aubrey Ellerston, a researcher with the Commercial Fisheries Research Foundation.

“It’s a huge economy now on our East Coast,” she said, “and it supports hundreds of fishing families and allows lobstermen to diversify and reduce their dependence on lobstering.”



MARTHA'S VINEYARD, MENEMSHA, MASSACHUSETTS, UNITED STATES - 2013/10/20: Shack, lobster traps and boats in fishing village. (Photo by John Greim/LightRocket via Getty Images)

## How temperatures affect lobster

Historically, lobster “landings” — the industry word for “catches” — have been primarily been in shallow waters closer to shore. But warming oceans are sending lobsters, and those who catch them, farther out.

“It’s been well documented that bottom water temperature really impacts American lobster. So it affects their growth, maturity, their egg extrusion and development. So many females are trying to seek cooler waters to protect egg development,” explained Ellerston.

According to WHOI's research, the rise in ocean temperatures is also bringing non-native species into the waters off New England. "One of the most dramatic examples recently was in January of 2017. There were juvenile black sea bass that were caught near Block Island, south off the coast of Rhode Island," said Gawarkiewicz, adding, "that had never happened before."

The changes in ocean temperatures and a drive for more data have created an unlikely alliance between fishers and scientists. Fishermen, once concerned about restrictions placed on them through government intervention, are now working alongside scientists in a mutually beneficial arrangement — to preserve the industry.

"Fishermen do talk about it a lot. And a lot of fishermen are like, 'Yeah, they're trying to get us. They're going to close us down.' Well that's not the whole thing," Colbert said. "We're working at it together, how do we keep it around? I mean, we're creating a food source so we want to protect that."

Colbert remains optimistic about the fishing industry, despite shifts in the supply chain brought on by warming ocean waters. He thinks fishers will adapt to changing conditions as good stewards of the sea — partly as a matter of necessity.

"I think the generation that we have fishing now is more concerned about the resources and protecting it, but also knowing it's how we make a living," he said. "It has to be sustainable, because I mean, we want to pass something on to the next generation."

***Yvette Killian is a producer for Yahoo Finance's On The Move.***