

UMass Dartmouth researcher urges long-range planning for fishing communities as changing ocean temperatures shift habitats

A UMass Dartmouth scientist contributed to research recently published in *Nature Climate Change*, indicating that many east coast fishing communities face risks due to changing ocean temperatures that are altering the location of fish populations.

“Climate change is expected to have a profound impact on the distribution, abundance, and diversity of marine species globally,” states the study, co-authored by Dr. Robert Griffin of the UMass Dartmouth School for Marine Science and Technology. “These ecological impacts of climate change will affect human communities dependent on fisheries for livelihoods and well-being.”

The research team examined the impact caused by climate change on 85 coastal fishing communities from North Carolina to Maine, including New Bedford and dozens of other New England communities, by 2040-2050.

The team concluded that shifting ocean temperatures are changing the locations of commercially harvested marine species into more northerly and deeper areas. As fish migrate to their preferred waters out of the places they had traditionally been caught, fishing fleets and the supporting seafood economy in each port will need to transition away from traditional species and adjust to new ones. This study measures the extent of this risk across all ports in the Mid-

Atlantic and Northeast, finding highly variable exposure even in nearby ports depending on their existing practices and anticipated changes in habitat suitability across species.

The study urges fishing communities to begin adaptation planning. “A majority of fishing communities are projected to face declining future fishing opportunities unless they adapt, either through catching new species or fishing in new locations,” the study states.

“Our goal here is to understand the intersection of the marine environment with the community that depends on it for its livelihood,” Griffin said.

Griffin said long-term projections for a community could help guide strategic decisions by individual fishers, processors, or other business owners about investment and divestment in permits, quotas, boats, gear, marketing of new species, and perhaps most importantly, time spent finding fish of a particular species.

Risk profiles could also help ports and municipalities develop policies relating to infrastructure investment, community cooperatives, and the role fishing plays in the local economy.

Scientists at Rutgers University, Princeton University, and NOAA’s Alaska Fisheries Science Center also contributed to the study.