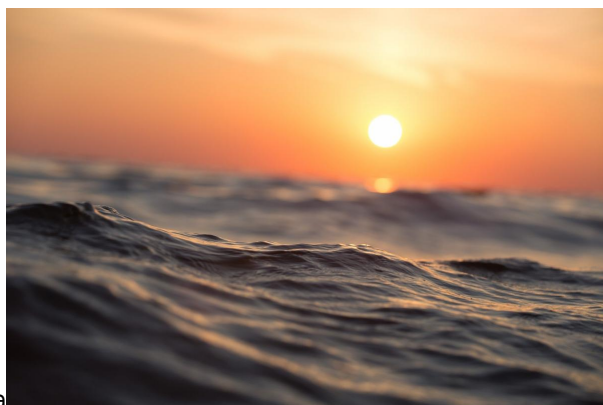


New modeling will shed light on the ways policy decisions affect migration from sea level rise

Nov 27, 2019

A new modeling approach can help researchers, policymakers, and the public better understand how policy decisions will influence human migration as sea levels rise around the globe, a new paper published in *Nature Climate Change* suggests. These findings emerged from an [interdisciplinary working group](#) [1] supported by the University of Maryland's National Socio-Environmental Synthesis Center (SESYNC) with funding from the National Science Foundation.

About 1 billion people around the world live near the coastline and could be impacted directly or indirectly by rising sea levels due to climate change. But the number of people who will actually migrate due to sea-level rise is still uncertain. David Wrathall, the lead author of the paper and an assistant professor at Oregon State University says that a wide range of economic policies, planning decisions, infrastructure investments, and adaptation measures have the potential to influence how, why, and if people migrate to new places as a result of sea level changes.



In the paper, Wrathall and his team of internationally known climate change researchers suggest that while policy decisions are key, experimental policies should not be tested on vulnerable populations in the real world, as doing so can be both expensive and risky. Instead, researchers suggest using simulations, made possible by advanced computation and modeling, to predict the effects of realistic policy changes.

For example, armoring coastlines against surging tides and rising waters could impact whether people are able to stay in their homes or need to relocate. Tax incentives and zoning regulations that allow businesses to locate near ports, a global trend, potentially puts whole industries and labor markets at risk. Even interest rates can affect who can afford to borrow money, which could be a crucial part of people's decisions to migrate.

In addition, global policy decisions about the management of greenhouse gas emissions, which are responsible for the warming of the planet, could impact how quickly the planet warms and sea levels rise, Wrathall said.

"Right now, people are actually moving toward coastlines that will be more and more vulnerable as the planet warms," Wrathall said. "The only thing that will change this trend is policy. If we start changing the incentives to live, work, and invest in safer places, we could make sea level rise-induced migration less expensive and disruptive down the line."

As part of the simulations, researchers suggest that policy makers need to model the impacts of policy decisions on the communities or regions where migrants might be relocating, since those arriving will have a significant impact on their new community as well, Wrathall said.

Using modeling to determine the outcomes of various global emissions policies in terms of sea-level rise and expected adaptation policies for migration will also be key, the researchers suggest.

“Modeling allows us to look at all kinds of scenarios to identify the specific policies that might work to help people migrate and anticipate the policies that cause problems,” he said.

This news story was adapted from a [press release](#) [2] from Oregon State University.

Read the full comment, [“Meeting the looming policy challenge of sea-level change and human migration”](#) [3] in *Nature Climate Change* now.

Associated Project:

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