

'Maine's Climate Future' documents progression of accelerating change

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Nearly every climate-related parameter measured in Maine is

accelerating, according to "Maine's Climate Future—2020 Update," the latest report from the University of Maine. The rate of air and sea warming is increasing. Precipitation is increasing in intensity and volume, and sea level is not only rising, but rising faster than in the previous century.

"[Maine's Climate Future—2020 Update](#)" builds on previous reports, "Maine's Climate Future—2015 Update," "Maine's Climate Future—An Initial Assessment in 2009" and "Coastal Maine Climate Futures." The new report also was supported by Schoodic Institute at Acadia National Park.

"The goal of this work is to build on reporting at the global scale through the Intergovernmental Panel on Climate Change and at the national scale through the periodic National Climate Assessments," says Ivan Fernandez, UMaine professor of soil science and [forest resources](#), and the report's lead author. "What is most important for Maine people is information that is local, from our backyard."

Key new findings include faster rates of warming along the coast compared to interior and northern Maine, and changes in Maine winters. Average minimum temperatures in Maine are warming 60% faster than average maximums.

The growing season is more than two weeks longer with warmer springs and even warmer falls. In contrast, in the Gulf of Maine, it is the summer season that has warmed. And the weather is becoming more and more uncertain.

The report briefly discusses possible future conditions in Maine, underscoring that steps taken now to reduce greenhouse gas emissions determine which alternative future pathway Maine experiences.

"From the historical record we know that Maine's [climate](#) has warmed and become wetter over the past century," says Sean Birkel, Maine state climatologist and UMaine research assistant professor, and co-author of the report. "The factors propelling these changes are estimated by [climate models](#) that show that the warming signal from greenhouse gas emissions emerged from the noise of natural variability by at least the 1960s.

"Model projections, in addition to historical trends, provide a spread of physically plausible climate outcomes over the next century that can inform both adaptation and mitigation measures," Birkel says.

The report points to the growing evidence of impacts of these changes on Maine's farms, fields, forests, marine resources, and aspects of our culture and economy. The report also points to resources and activities that represent opportunities to address the climate challenge, and actions that Mainers are taking to deal with climate-related changes.

"Our work at Schoodic Institute focuses on understanding environmental change in Acadia and beyond, as well as helping those charged with managing protected areas to respond and adapt to change. This 2020 update, while alarming, affirms that Maine people have the will and capacity to thrive in uncertain times," says Catherine Schmitt, Schoodic Institute science communication specialist and a co-author of the report.

Scientists at the University of Maine in the Climate Change Institute and Maine Sea Grant study the effects of climate change from across the planet to marine fisheries and coastal communities in Maine. In addition, UMaine scientists contribute critical expertise that informs Maine about how to respond to the changing climate.

"This report hopes to connect Maine people with the information they need for decision-making," Fernandez says. "We are in awe at the stories

from elsewhere about fires in Australia and California, hurricanes in Puerto Rico, melting ice and permafrost in the Arctic, droughts in Africa, and Pacific island nations being lost to rising seas. This can make us less aware of the changes all around us here in Maine.

"Science-informed decision-making in the face of [climate change](#) about the future we want is always more cost-effective than constantly trying to catch up, or investing in the past," says Fernandez. "As the report states, business as usual is not an option."

Provided by University of Maine

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