

MEETING THE REGION'S CLIMATE CHALLENGE

Issue 3



Climate Hazards Come To Maine

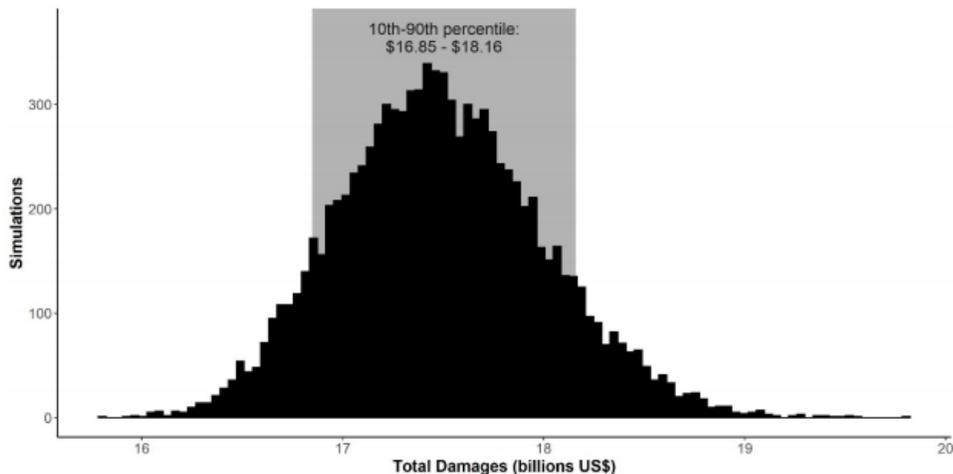
Climate change is reshaping Maine's environment. Sea levels are rising, average temperatures are increasing on land and in the ocean, and the intensity of precipitation around the globe is shifting. This month's issue highlights current and future hazards resulting from our changing climate.

Sea level rise has necessarily been at the center of planning for climate impacts in Maine. This bulletin focuses on other hazards, which will impact inland towns, threaten Mainers' livelihoods, and further burden vulnerable communities. See the funding section at the bottom of this issue for opportunities to bolster climate adaptation in your region!

The Cost of Doing Nothing

Doing nothing has a high cost, one that Mainers will feel for a long time. Without action, Maine's total economic output would decline more than 15% by 2050 due to losses in the tourism sector, and climate-related flooding could cost Maine billions in the next three decades, according to the Maine Climate Council report, *Maine Won't Wait*.

Figure 5. Total Storm Surge and Sea Level Rise Damages Between 2020 and 2050



Deep Dive: Key Climate Hazards Explained



Flooding in Wallagrass, ME in 2008

1. Flooding Hurts Tax Revenues

Property taxes account for 45% of Maine's tax base. Increased flooding decreases property values in flood zones, thereby decreasing the municipal tax base. This can strain municipal budgets and reduce access to the capital needed to adapt to new climate hazards, putting mitigation and adaptation actions out of reach.

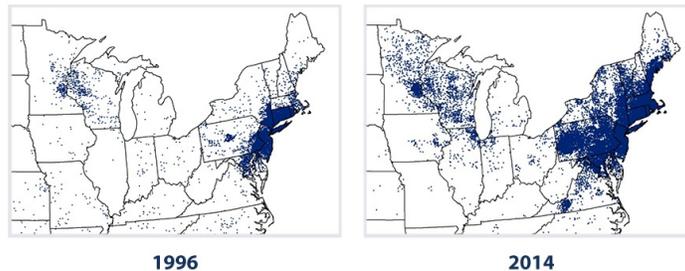
Building Resilience

Providing homeowners high-quality data on existing and, more importantly, future flood risk can help reduce this risk. If homeowners understand their own flood risk and how it could impact the value of their homes, they are more likely to take steps to reduce this risk. [Here](#) is a good place for homeowners to start.

Reported Lyme Disease Cases in 1996 and 2014. Reported by the CDC, 2015.

2. Disease Will Spread

Cold temperatures kill many pests, including ticks and mosquitoes. Warmer weather has already led to an uptick in the vector-borne diseases—Lyme, West Nile virus—that ticks and mosquitoes carry. The [brown-tail moth](#)



[population](#) has increased due to drought conditions, forcing municipalities to treat parks and public spaces with pesticides to reduce health impacts.

Building Resilience

Healthcare providers should plan to treat more cases of Lyme disease, West Nile virus, and other vector-borne diseases each year. Public health agencies and officials should plan for the spread of other warmer-weather diseases and disease-carrying pests to Maine in the future, and should educate the public on new hazards as they emerge.

3. Heat Will Kill

While Maine stays relatively cool, our summers are changing. Increased high heat days in the summer increases risk of heat-related illness and even death, especially for seniors or low-income populations who are unable to pay for air conditioning.

Building Resilience

Proactive planning for high heat days includes identifying public cooling stations and shelters, providing transportation for those who need it, and educating vulnerable populations about heat risk. These actions could save lives each summer.

4. Fishery Jobs in Jeopardy

Maine's valuable ocean economy is particularly vulnerable to impacts from climate change. Ocean warming is threatening Maine's fisheries, pushing cold-water fisheries northward. For example, attempts to rebuild Maine's cod fishery from overfishing have been slowed due to ocean warming. Ocean acidification also threatens Maine's shellfish, especially those that make their shells from calcium carbonate, like mussels, clams, and oysters.



Building Resilience

Although cold-water fish are moving northward, warmer-water species are replacing them. One way to develop resilience is to offset losses by shifting towards new opportunities, which will require significant planning and support for industry workers.

5. Low-Income Mainers Hit Hardest

Maine is not only vulnerable to local climate hazards. National and global climate hazards—like drought in California—can strain the systems that connect us to the world. These combination of stresses can worsen existing social vulnerabilities.

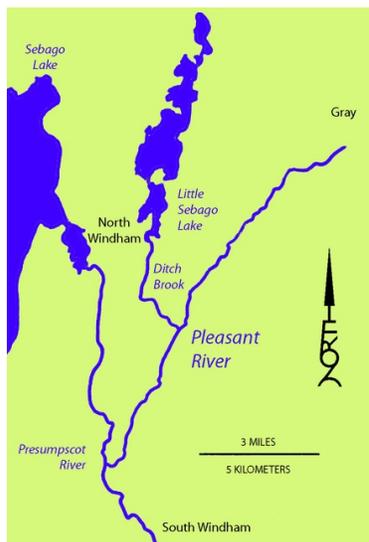
For example, food and energy prices increase globally when the system is threatened by weather disasters. This overly burdens low-income communities who have less ability to pay increased prices. Locally, power outages from local hazards also disproportionately impact low-income and rural residents.

Building Resilience

Considering existing social vulnerability when identifying risk to climate change is essential. Municipalities should engage with vulnerable populations to discover how climate change may compound existing social vulnerabilities that impact them. Measures that contribute to general social resilience will also help communities weather the harms of climate change in particular.

Regional Spotlight: Climate Hazards in Inland Maine

River management in Windham



The Pleasant River in Windham is susceptible to landslides that threaten homes along the river. The area also has undersized stream crossings that have the potential to overflow during heavy rain fall according to Heather Hunt, project manager of [Cumberland County Soil & Water Conservation District](#).

“Increased rain events and rain intensity expedite the potential of landslides. Living shoreline methods of stabilization can help prevent landslides but a comprehensive review of the river is needed for a full analysis of the risks.”

Windham will be working closely with Cumberland County Soil and Water District to update a watershed management plan in the next couple years taking this and other climate change impacts into consideration.

Lakes Region Under Threat



The [Lakes Environmental Association](#), based in Bridgton, stewards more than 40 lakes in western Maine and is planning for current and future climate hazards impacting freshwater systems. Changes to freshwater systems affect resident's use of waterways and financially burden Maine municipalities. Colin Holme, the association's executive director, identifies two challenges climate change is bringing to Maine's lakes: warmer water and air temperatures and the increasing frequency and intensity of storm events.

Northeastern water bodies are warming faster than most other systems on the planet. Since the 1980s, lakes in the northeast have warmed at a rate of 1.4 degree Fahrenheit each decade. Warmer water and increased storm runoff lead to a range of problems for fresh-water resources, including bacteria growth and pathogens in the water, reduced ice cover, diminished fish populations, and increased blue green algae (cyanobacteria) blooms.

China Lake, Unity Pond, Upper Pleasant Pond and Sabattus Pond are a few of Maine's lakes already experiencing summer blue-green algae blooms. These blooms make the water murky green and may give off dangerous toxins. Aside from possible health effects, these blooms also greatly reduce property values, as documented by [past University of Maine Studies](#). The Lakes Environmental Association is working to reduce these impacts by supporting municipalities with planning and compliance, education, and water testing and monitoring. Contact them for more information about protecting your town's fresh water resources.

Know of other effective regional organizations or networks working on climate change in Maine? Let us know! [Email Sara Mills-Knapp](#).

Upcoming Funding Opportunities

Efficiency Maine Trust has a limited-time funding opportunity available to help smaller municipalities accelerate the conversion of heating and lighting to more efficient solutions. Geared toward municipal buildings, towns with 4,000 or fewer residents can apply for heat pumps and LED lighting incentives, including up to \$7,800 for heat pumps and up to 90% of total cost of LED installations.

Visit [Efficiency Maine's website](#) for more information and to find the application due March 31, 2021.

Salazar Center's Thriving Cities Challenge is a competition focuses on finding innovative nature-based solutions that improve the equity, health, and resilience of urban communities in North America. A \$50,000-100,000 award will be presented to the winning

team to implement their proposal. Applications due April 15th.

Visit the [Thriving Cities Challenge website](#) to learn more.

The Onion Foundation's mission is to encourage conservation and stewardship of the natural environment and to promote music and the arts in the state of Maine. Two grant cycles occur each year to uplift organizations aligned in mission. For the spring, applications are due Wednesday March 3, 2021 for the fall, application are due on Thursday Sept. 30, 2021.

Spring & Fall Cycle Grants range between \$5,000 and \$20,000 [visit the Onion Foundation's website](#) for more information!

