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NEWS FEATURE

BLUE HILL

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Grassroots group seeks collaborative solutions for climate adaptations

by Clark Tate

If you’ve noticed milder winters, warmer waters, and a spike in sweltering summer days, you’re not alone. “Many, many people, hundreds of people, told us that they’ve noticed over their lifetimes that Maine is warming up,” said Dr. Cassandra Rose of the Governor’s Office of Policy Innovation and the Future. “Climate change is already a reality for Maine.”



Ocean Temperature Trend chart from NOAA. Photo courtesy of Clark Tate

A recently formed Blue Hill Peninsula Planning Group is working on what to do about it. Members include Allen Kratz of Brooksville, Randy Curtis and Jeff Milliken of Blue Hill, Bailey Bowden of Penobscot, and Jim Fisher of Deer Isle. The grassroots group hosted a Zoom meeting June 4, with members of the public, community leaders, and, notably, Maine District 133 Rep. Sarah Pebworth in attendance. The stated purpose was to “combine usable information and opportunities for action.”

The meeting started with background information in fire hose fashion, with Dr. Susie Arnold, a marine scientist at the Island Institute, and Rose, a senior science analyst and climate control coordinator, discussing the state of climate science.

Temperatures and sea level rising

Air temperatures in Maine are 3.2 degrees higher than they were in 1895. They could rise an additional two to four degrees by 2050, and up to 10 by 2100, according to the Maine Climate Council’s Scientific Assessment of Climate Change and Its Effects in Maine published in 2020. The Council’s interactive Climate Dashboard shows that ocean surface temperatures are 3.8 degrees hotter than historic averages. Under worst-case emission scenarios, they could climb to up to 55 degrees by 2050, temperatures found in southern New England today, according to Maine State Climate Office’s CMIP5 model forecasts, with data sourced from National Oceanic and Atmospheric Administration.

That’s not good news for Maine’s fishing industry, valued at nearly \$673 million in 2019 and \$517 million in 2020, according to the Department of Marine Resources. Lobsters, which accounted for over 70 percent of those profits in 2019 and nearly 80 percent in 2020, have been moving northward and into deeper waters offshore to escape the heat. Eventually, said Arnold, this will take them to Canada, forcing the fishery to adapt. (Conversely, fish such as menhaden and black sea bass may become more abundant.) Acidity isn’t good for shellfish, either, and the oceans are now 30 percent more acidic than historic records, with most of the decline occurring in the last 70 years, according to the Climate Council’s scientific assessment.

Sea levels are rising. Storm surges and high tides will creep further inland. No one knows how bad it will get, but the Climate Council’s most likely projections range from an increase of 1.1 to 1.8 feet by 2050 and 3 to 4.6 feet by 2100. The Council’s high estimates put the sea level rise at 3 feet in the next 30 years and 8.8 feet in the next 80; its science assessment notes that annual precipitation in Maine has increased by more than 6 inches (largely driven by the wet years from 2005 to 2014) and severe storms are more frequent.

The costs of doing nothing are high, Rose explained, summarizing the results of last year's joint report by the Eastern Research Group and the state. By 2050, the state GDP may drop by well over \$118 million due to mid-range predictions of sea level rise alone, and hospital visits and heat-related emergencies on sweltering summer days could cost \$2 to \$3 million a year. Then there are the lobsters that will slowly march north, the shellfish that will suffer, and the homes, roads, bridges and causeways that will flood.

Solutions look to emissions, resilience

After Arnold and Rose laid out the challenges Maine faces due to climate change, the remaining speakers shifted to solutions, which include working to reduce emissions and building resilience in infrastructure, natural systems, and communities.

Joyce Taylor, chief engineer at the Maine Department of Transportation, led the carbon reduction conversation since transportation accounts for 54 percent of the state's emissions. According to Taylor, electric vehicles are the key to reducing them. "It's unrealistic to think, in a rural state like Maine, that you're really going to have a lot less vehicle miles traveled," she says. MDOT is also revamping the GO MAINE Rideshare program for a 2022 relaunch.

Resilience projects range from raising roads and bridges to widening culverts and creating living shorelines. They also include acquisition and demolition projects, where government funds purchase properties in harm's way, such as homes, then demolish buildings to create open space.

Three presenters provided a wealth of project planning and funding information. Martha Sheils noted that funders like to support regional collaborations and large scale climate resiliency projects. She's with the New England Environmental Finance Center, which offers training and technical assistance to communities.

Nathan Robbins, with the Department of Environmental Protection, reviewed a long list of DEP grants and loans. He also stated that building resilience is a cyclical process and shared a useful community action framework. Anne Fuchs, with the Maine Emergency Management Agency, spoke about the Federal Emergency Management Agency's Building Resilient Infrastructure and Communities (BRIC) funding. She said that BRIC grants go to cost-effective projects that help a lot of people for a minimum amount of money. Fuchs sees this as a challenge in rural Maine.

In the discussion that followed the presentations, Arnold and Rose explained that the state has committed to manage for sea level rise estimates of 1.5 feet by 2050 and 3.9 feet by 2100 and will consider preparing for worst-case scenario estimates of 3 feet by 2050 and 8.8 feet by 2100. It's hard to say what that means in the real world.

When Taylor brought up a project to raise a local bridge by 4 feet, Scott Miller of Blue Hill dove into the issue. "New bridges are 100 year assets," he said. "You know, we're being told effectively to plan for 9 feet over the next 80 years, but the state itself has decided 4 feet's good enough." He asked, respectfully, for clarification, saying later, "What should towns be taking away from this in terms of their own investment in infrastructure?"

Taylor, Rose and Arnold confirmed that the plan is consistent with state recommendations. Then Taylor spoke about the complexity behind these decisions. Currently, MDOT is removing needed infrastructure in Maine because they don't have the funds to maintain it. They don't want to spend money raising a functional bridge that may never flood. But, better information may be on the way.

"There is a state agency conversation in two weeks about going out and getting a sea level rise inundation model, and our goal would be to be able to share it with towns, so that we're all talking the same language," said Taylor, though she doesn't know if they'll be able to afford it.

Taylor also worries about whether communities will still be at the end of a road when the project is done. "I could be building a road at 9 feet that goes to absolutely nobody," she said. "Are people going to retreat?"

"We've been asked by NOAA a couple times to go to 8 feet," Taylor explained. In one case, building the bridge that high would have destroyed six historic buildings. "You can't have it all when you start talking about adaptation," she said. "And I don't think we've had enough of that conversation about the difficult trade-offs."

Discussion moderator Kendra Jo Grindle of the Island Institute responded, saying, "I think the hope of today is to start some of those difficult conversations for the Blue Hill Peninsula area and continue them forward with more of a collaborative, regional group."

To view the presentations, visit tinyurl.com/BlueHillPenCC.

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