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CHANGED MAINE POLITICS

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THE MAGAZINE OF MAINE | NOVEMBER 2022



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Taking the Long View

An aerial photographer took to the skies to capture Maine's stunning, surreal, and vulnerable coastline, offering a unique perspective on Maine communities anticipating the effects of sea-level rise.

PHOTOGRAPHED BY ALEX MACLEAN
TEXT BY KATE COUGH

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Tales from the Borderlands

More than 600 miles of international border separates Maine from Quebec and New Brunswick. But for the people who live on either side, that line isn't a source of division so much as an axis of connection.

BY WILL GRUNEWALD, BRIAN KEVIN, JOYCE KRYSZAK, MARY POLS, AND DAVID SHRIBMAN

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The Walk

In 1972, little-known Bangor mayor **Bill Cohen** set out on a walk clear across the state to convince voters to send him to Washington. A new book looks back at the 650-mile jaunt that became a Maine political tradition.



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You can't go wrong giving handmade gifts — and three Maine artisans have the scoop on what to look for this holiday season.

BY TINA FISCHER

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Saltwater marsh in Wells, by Alex MacLean.

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High tides have increasingly encroached on the causeway between Deer Isle and Little Deer Isle. See page 72.



EYE IN THE SKY

Pilot and photographer **Alex MacLean (alexmaclean.com)**, has flown across much of the country, using large-format aerial photography to document the landscape and its changes. To shoot the Maine coast for this issue's collaborative project with the *Maine Monitor* and Pulitzer Center (page 72), MacLean relied on local pilots, including Ed Friedman, of Bowdoinham's Point of View Helicopter Services (pointofviewhelicopter.com), who captured the photographer shooting from the cabin of Friedman's Schweizer 300C. MacLean's 2020 book, *Impact: The Effect of Climate Change on Coastlines*, collects similar images from across the U.S.

The *Monitor* hosts a pair of public panel discussions in November, in person and online, featuring reporter Kate Cough and Maine scientists and officials, examining the impacts of rising seas on the Maine coast. For details, visit themainemonitor.org.



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Aerial photographer **Alex MacLean** took to the skies to capture Maine's winding coastline: stunning, surreal, and vulnerable. His images, produced for the nonprofit *Maine Monitor's* "The Unstoppable Ocean" series, offer a unique perspective on strands of shoreline where Maine communities are anticipating the effects of sea-level rise — challenges that are only just beginning.



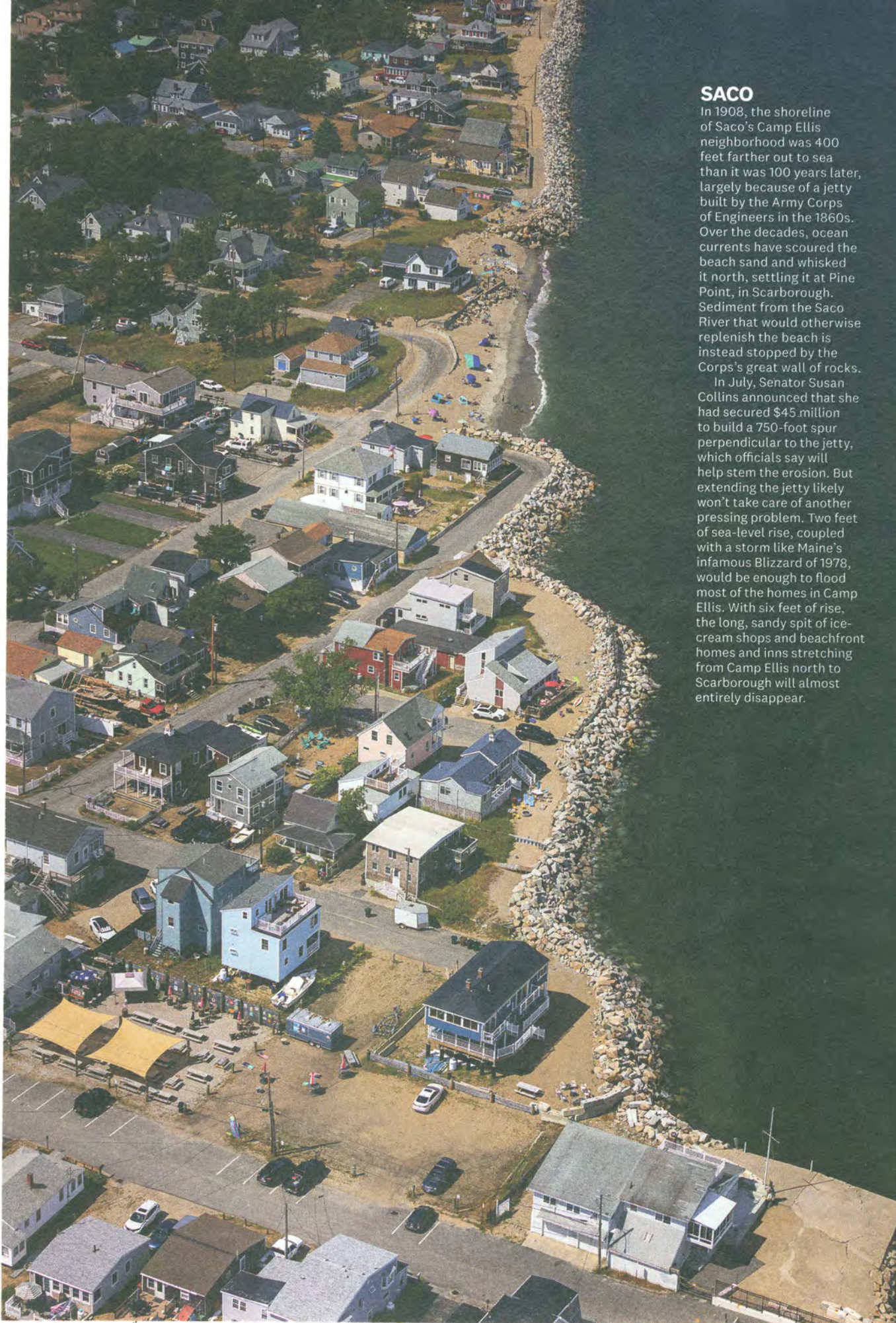
Text by **KATE COUGH**

TAKING THE LONG VIEW



Salt marsh and beachside development in Wells.

This story was published in partnership with the Pulitzer Center.



SACO

In 1908, the shoreline of Saco's Camp Ellis neighborhood was 400 feet farther out to sea than it was 100 years later, largely because of a jetty built by the Army Corps of Engineers in the 1860s. Over the decades, ocean currents have scoured the beach sand and whisked it north, settling it at Pine Point, in Scarborough. Sediment from the Saco River that would otherwise replenish the beach is instead stopped by the Corps's great wall of rocks.

In July, Senator Susan Collins announced that she had secured \$45 million to build a 750-foot spur perpendicular to the jetty, which officials say will help stem the erosion. But extending the jetty likely won't take care of another pressing problem. Two feet of sea-level rise, coupled with a storm like Maine's infamous Blizzard of 1978, would be enough to flood most of the homes in Camp Ellis. With six feet of rise, the long, sandy spit of ice-cream shops and beachfront homes and inns stretching from Camp Ellis north to Scarborough will almost entirely disappear.



parking lot that rarely flooded three decades ago, now underwater during storms. A causeway clogged with rockweed after high tide. Brackish water pouring from a tap after the ocean infiltrates a freshwater aquifer. The seas are rising, and the signs are turning up in communities up and down Maine's thousands of miles of serpentine coastline, from the soft, sandy beaches of Saco and Wells to the sloping pink granite of Stonington to the foreboding bluffs of the Cutler coast.

The ocean has been slowly rising for centuries. It is the pace that is now alarming, particularly when combined with storms that are more frequent and more intense. The rate of sea-level rise has more than doubled from an average of .06 inches each year throughout most of the 20th century to .14 inches annually from 2006 through 2015, according to the National Oceanic and Atmospheric Administration. Meanwhile, high-tide flooding is between four times and 10 times as frequent as 50 years ago.

In Maine, a single foot of sea-level rise, which scientists say will likely happen within the next three decades, will bring 10 times more frequent nuisance-flooding and coastal storm impacts, according to an analysis by the Maine Climate Council. The Council predicts that more than 40 percent of the state's dry beach area, already a rare and precious resource, will disappear with 1.6 feet of rise, which is possible by 2050, devastating seaside communities that rely on beaches for recreation and tourism. The group recommends that communities manage for 1.5 feet of rise by 2050 and 4 feet by 2100.

Communities up and down the coast are already being forced to make costly upgrades to vulnerable infrastructure and, in some cases, rethink ways and patterns of life they have had for generations. Livelihoods will be altered and land and houses lost. Vital habitat and ecosystems, from marshes to sand dunes and eelgrass beds, will be forced to migrate or, stymied by development along the shore, be swallowed by the sea.

The list of options is short, says state marine geologist Peter Slovinsky, who has been studying changes to Maine's coast and coaching communities on their response to sea-level rise for more than 15 years. "Do nothing, avoid, accommodate, adapt, protect and relocate."

The state's approach to planning for the impacts of sea-level rise has been piecemeal, a "patchwork, kind of like a quilt," Slovinsky says. Until five or 10 years ago, there were just a handful of people working on the issue. "You only have so many hours in a day, and you only have so many places you can put yourself at one time. Something's got to give, and in the past, it's usually been planning for climate change.

"It was literally impossible," Slovinsky goes on, "for [me] to run around 242 coastal communities and give them a spiel on sea-level rise and start the conversation about what to do about it. We still do a lot of that, but one of the biggest changes is there are so many other organizations now involved in these kinds

of efforts that are able to bring a lot of different capacity to the plate, which we just didn't have before."

The Governor's Office of Policy Innovation and the Future, created by Governor Janet Mills shortly after she took office in 2019, has become the organizational lead on many fronts, Slovinsky says. But Maine, unlike some other states, does not have a dedicated office or department for dealing with sea-level rise. That's in part because of the state's "networked" regulatory structure, Slovinsky says, with different agencies and departments each playing a role in permitting and planning, and in part because it is a strong home-rule state, with a lot of autonomy ceded to local authorities. That patchwork approach, however, means some communities will have more seamless access to resources than others.

"We still have a lack of capacity at the state level and at some of the regional-planning levels to be able to bring the right amount of technical assistance that's needed by these communities," Slovinsky acknowledges. "It's something we're going to continue to struggle with."

The solutions that do emerge will not be simple or cheap, nor will they be the same from one place to the next. Sorting out the knotty web of interests — between, say, property owners and the broader public or preservation advocates and developers — will take time. It will be messy. The captions on the following pages excerpt stories of 10 communities grappling with those decisions, trying to figure out how to protect their residents and resources from the ravages of the ocean. Some are building seawalls and raising roads. Some are preserving marshland. Others are tracking tides.

"A lot of these things are built on the concept of holding the line. We're going to be able to do that for a certain amount of time," Slovinsky says. "When sea level rises one or maybe two feet, we'll be able to do that. But once it rises beyond that, it's going to be a challenge."



Down East is pleased to present these images in partnership with the Maine Monitor and the Pulitzer Center. All text is excerpted from the Monitor's wide-ranging reporting project "The Unstoppable Ocean." Visit themainemonitor.org to read much more about how these Maine communities are preparing for rising seas — and to see more of Alex MacLean's aerial photography. The Maine Monitor is the nonprofit, nonpartisan news service of the Maine Center for Public Interest Reporting. Monitor reporter Kate Cough covers climate change and the environment and lives on Mount Desert Island.



CAMDEN

One and a half feet of rise would put much of Camden's harbor parking lot, where passersby pause to admire yachts and historic schooners, underwater during the exceptionally high tides known as king tides. A number of waterfront buildings would also be periodically swamped: a 2017 report by the Watershed School found that \$16 million worth of Camden's waterfront property, accounting for roughly \$260,000 in annual property taxes, would be at risk with just a foot of sea-level rise.

The conversation around sea-level rise is changing, town manager Audra Caler-Bell says, but translating policy into action is complicated, particularly in such a historic place, where development has continued to intensify. Camden saw a huge influx of new residents during the pandemic, many of whom, Caler-Bell says, have been building properties along the coast, even as town officials warned that zoning ordinances do not account for sea-level rise. "They're investing in extremely expensive infrastructure that isn't going to hold up in the future," she says. In June, the town put in place a moratorium on all new piers, floats, and docks on private property, in an effort to slow development while ordinances are updated.



MACHIAS

In June, residents from Machias and beyond packed into a high-school gym to hear state officials' latest proposals for a rapidly deteriorating dike in the middle of town — the only structure standing between the ocean and more than 50 landowners upstream on Middle River. "We hay down there. We have cattle," Chris Sprague said at the meeting. "I live on a peninsula. My land will be a swamp, and I could just stand here and cry."

The fields that Sprague's family has been haying for generations are shielded from the sea by a causeway of earth and stone, built in the late 1860s. The dike and causeway essentially function as a dam with a road on top — busy Route 1, the primary connection point for towns down east. Four one-way gates under the road (known around town as "clappers") allow water to flow out from the river to the sea, but not the other way around.

Except, in recent years, the sea has been coming upriver anyway. Higher tides and storm surges have flooded over the road, nibbling at its edges and eroding the embankments. Four box culverts that allow water passage below the causeway are nearly a century old and in dire need of replacement. A violent storm and spring tide in April 2020 left seaweed and debris scattered along Main Street for the second time in the span of a few months.

"An engineer told me he thought we were just an inch or two of a storm surge away from losing the dike entirely," says Tora Johnson, professor and director of the GIS Laboratory at the University of Maine at Machias, who has been studying the dike for more than a decade. "It would have been a pretty epic disaster for the whole region."



**THE MAINE
CLIMATE COUNCIL
RECOMMENDS THAT
COMMUNITIES
MANAGE FOR 1.5 FEET
OF RISE BY 2050.**



SOUTH PORTLAND

There are roughly 100 petroleum-storage tanks along the Fore River, according to a vulnerability assessment commissioned by Portland and South Portland in 2019. Assessing vulnerability of infrastructure is difficult because scientists are uncertain when and how much sea levels will rise, but the Maine Geological Survey's Sea Level Rise/Storm Surge mapper shows that, in a conservative 3.9-foot scenario (the mapper includes scenarios ranging from 1.2 to 10.9 feet), more than half of the 13 large tanks near Bug Light Park would be at risk. Although berms would likely protect the tanks from regular waves and corrosion, the assessment explains, in the event of violent storms or flooding, "these tanks would be the first to be subjected to damage or dislodgement by forceful wave action or hydrostatic pressures should they be submerged."

South Portland is still in the early stages of planning for sea-level rise, says Julie Rosenbach, the city's sustainability director, and is working with the Army Corps of Engineers on a model that will predict when and where and how much of the city might flood under different scenarios. Data gathering has to happen before detailed policies can be put in place, Rosenbach says, meaning no concrete plans have yet been made for any of the storage tanks or other vulnerable infrastructure. "I think it's challenging," she admits. "These are decisions that we should be making now, looking out into the future."

DAMARISCOTTA

Even 14 miles upriver, Damariscotta is one of the most vulnerable coastal towns to sea-level rise, according to a recent multiagency adaptation study. Flooding downtown is expected to get worse in the coming decades. With 3.9 feet of rise — expected by the end of the century, if not before — nearly the entire downtown parking lot will be submerged during king tides. The study advised planning for flooding five feet above the harbor parking lot. That amount of water would inundate sections of Main Street, along with the basements and ground floors of many of Damariscotta's historic brick buildings.

To protect the area, officials have settled on building a three-foot seawall along the shoreline. Storm drains will also be replaced with one-way valves, allowing water to flow out but not in. But implementing the plan is proving more expensive than expected in the post-COVID construction era. The town had most of the estimated \$4.4 million cost in hand as of last fall and had hoped to start construction in spring, but the most recent estimates came in closer to \$5 million, forcing the town to hold back.

IN MAINE, A SINGLE FOOT OF SEA-LEVEL RISE WILL MAKE NUISANCE FLOODING 10 TIMES MORE FREQUENT.



VINALHAVEN

A few years ago, the Vinalhaven Sea Level Rise Committee launched a citizen-science project. It was obvious that during high tides and storm surges, areas of the island were flooding more often. But just how often? And were the tides higher or lower than the predictions made by the nearest tidal gauge, in Bar Harbor, several bays away?

The committee calculated the mean high-water level at several locations. Then, members pasted decals — essentially giant rulers — to PVC boards, allowing for measuring tides up to six feet above mean high water. Volunteer “TideTrackers” affixed the gauges to pilings and utility poles. Meanwhile, the Knox County Emergency Management Agency set up a platform for data collection using a GIS app, which allows the TideTrackers to easily submit photos, tide data, weather observations, and other information.

Seeing trends in the data will take years, says former committee member Margaret Qualey. In the meantime, the committee hopes the project will engage residents and students and make changes more visible. Summer residents, for instance, may not realize the downtown parking lot floods during spring storms. TideTrackers’ photos can convince skeptics. “It’s the social impact of getting people to even talk about it,” Qualey says.



PORTLAND

The National Oceanic and Atmospheric Administration has predicted that, by 2100, a storm surge at high tide could put much of Portland's Commercial Street under 6 to 10 feet of water. By then, even low-lying areas of the city, including the Bayside neighborhood, near Back Cove, could be under a foot of water at normal high tide. Despite those predictions, development along Commercial Street has exploded in recent years.

"I look at that and my poor sea-level-rise-addled mind says you've got to be kidding me," says Charles Colgan, an economist, retired from the University of Southern Maine's Muskie School of Public Service, who now helps communities around the world assess and quantify vulnerability to sea-level rise.

"First of all," Colgan continues, "Commercial Street is completely artificial. The actual shoreline — the natural shoreline — is up on Fore Street. Commercial Street was constructed." What's more, most of the buildings on the northern side of Commercial Street aren't technically in the flood zone, which means they aren't required to have flood insurance.

**COMMUNITIES UP
AND DOWN THE
COAST ARE ALREADY
BEING FORCED
TO MAKE COSTLY
UPGRADES.**

WELLS

Under the most conservative scenarios, nearly 1,500 buildings in Wells will be inundated by rising seas by 2050. With more than a few feet of sea-level rise, entire stretches of Wells Beach will wash into the ocean. Already, increasingly intense storms are battering houses and eroding seawalls.

"The pace is speeding up," says Nik Charov, president of Laudholm Trust, which supports the 2,250-acre Wells Reserve. "Sea-level rise, it's analogous to being in fire country out in the West. There are communities that never thought they were in any fire danger. Now, they're not there anymore." What we must ask, Charov says, is "What is important to us? What do we want to protect? What are we willing to give up?"

These are not easy questions to answer. The Southern Maine Planning and Development Commission recently estimated that \$860 million worth of residential property in Wells — the tax revenue from which accounted for 38 percent of the town's most recent budget — is located in inundation zones. And more intense storms, flooding, and higher tides are already costing Wells residents: since 1978, property owners there have filed the greatest number of flood-insurance claims of any municipality in the state.



MAINE, UNLIKE SOME STATES, DOES NOT HAVE A DEDICATED DEPARTMENT FOR DEALING WITH SEA-LEVEL RISE.

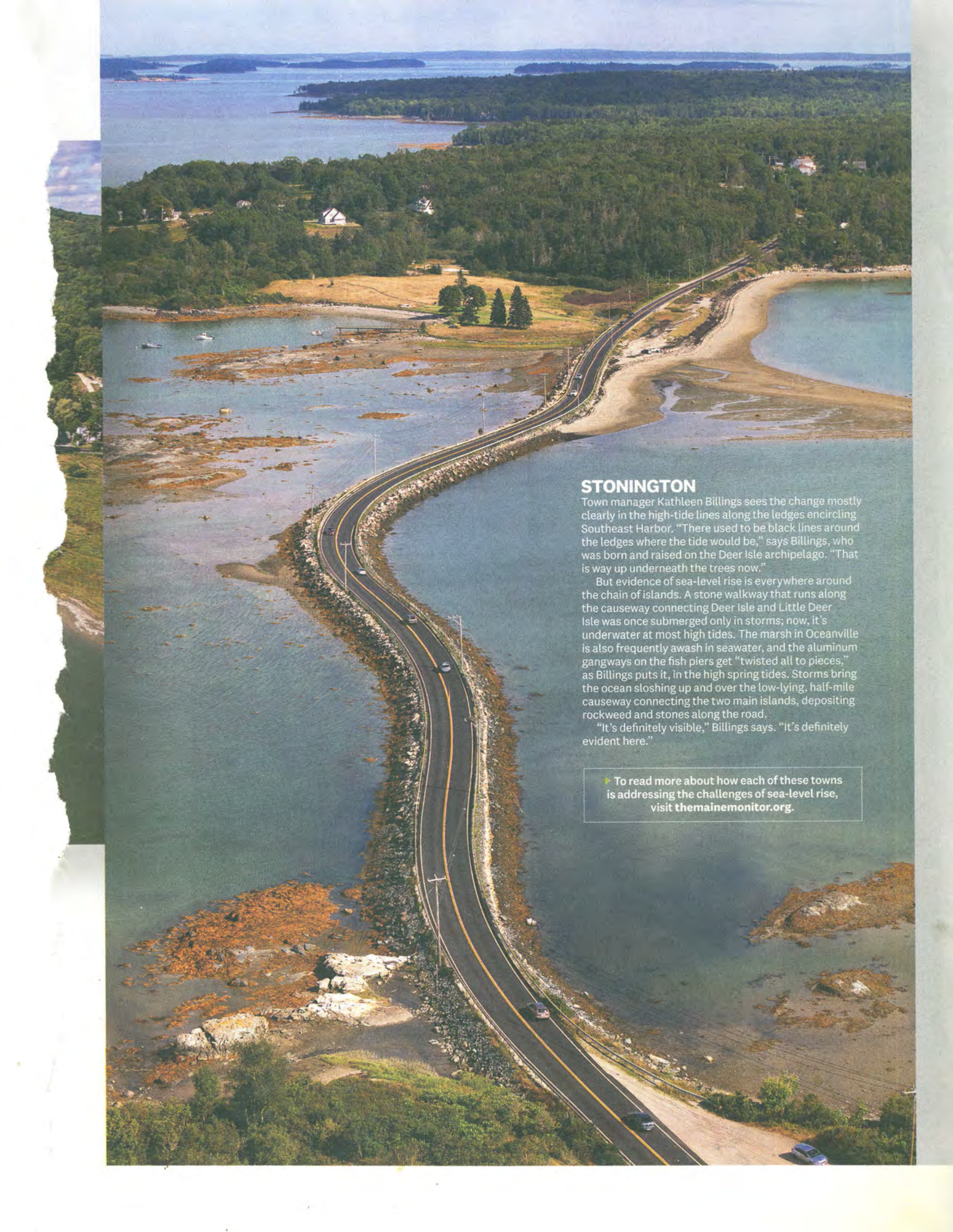


BLUE HILL

The Seaside Cemetery in Blue Hill is a lovely place to spend eternity, perched on a finger of land reaching out into the tidal flats of Mt. Desert Narrows, overlooking the rocky outcroppings of Sand and Wiley islands. "It's a big part of the pace and the rhythm of Blue Hill," says Brittany Courtot, a schoolteacher and historian who gives tours of Seaside in the summer and fall. "It's kind of got this magical quality to it. It's so peaceful."

But part of what makes it beautiful is also what puts it at risk. In a 2020 study, a task force identified Seaside as one of the pieces of critical infrastructure in Blue Hill most threatened by rising seas and storm surges, as the shoreline bluff it sits on is soft gravel and dirt. Seas have been nibbling away at the base for decades, and increasingly powerful rain events and storm surges have hastened the erosion of the bluff in recent years.

"There are at least two gravestones it seems, within the next year or two, that we really need to move," says Ellen Best, chair of the Blue Hill Select Board. There are between 10 and 15 likely at risk within the next decade.



STONINGTON

Town manager Kathleen Billings sees the change mostly clearly in the high-tide lines along the ledges encircling Southeast Harbor. “There used to be black lines around the ledges where the tide would be,” says Billings, who was born and raised on the Deer Isle archipelago. “That is way up underneath the trees now.”

But evidence of sea-level rise is everywhere around the chain of islands. A stone walkway that runs along the causeway connecting Deer Isle and Little Deer Isle was once submerged only in storms; now, it’s underwater at most high tides. The marsh in Oceanville is also frequently awash in seawater, and the aluminum gangways on the fish piers get “twisted all to pieces,” as Billings puts it, in the high spring tides. Storms bring the ocean sloshing up and over the low-lying, half-mile causeway connecting the two main islands, depositing rockweed and stones along the road.

“It’s definitely visible,” Billings says. “It’s definitely evident here.”

► To read more about how each of these towns is addressing the challenges of sea-level rise, visit themainemonitor.org.



Left to right: a Nathan K Dry Riesling 2020, from New York's Finger Lakes region; peach clarified-milk punch, one of several boozy, house-made milk punches, made with organic milk from Thomaston's Grace Pond Farm; a Bramble Fizz, house maple kombucha that's subsequently topped with aromatized wine; a Plum Spritz, house plum-whey soda with Luce aquavit; and a Parsnip Punch.

fermented tomato vinaigrette, was light and just right as a shared side. (wolfpeach is big on house fermentation — not least because Maine's winters are long and its growing season short.)

The unique beverage program deserves more attention than I'm giving it, totally focused on the Northeast, with no European wines and a small, smart list of beers, ciders, and unconventional spirits, all made in Maine or nearby (Acero and Richard met while helping open Oxbow Brewing Company's Oxford restaurant and beer garden). We stuck to cocktails, Elsa's a refreshing concoction of cucumber and aquavit from Rockland's Luce Spirits, mine a "parsnip punch," made with a blackened-parsnip simple syrup, house bitters, Vermont-made ice cider, and rum from Camden's Blue Barren Distillery. It was, like the entire evening, sophisticated but none-too-complicated — and deeply comforting.

Also none-too-complicated? Settling the bill without tipping. Acero expected some diners to be perplexed by it, but for the most part, she says, everyone seems to like the no-tipping mandate, and questions about the policy have made for welcome entries into deeper discussions about wolfpeach's philosophy and approach. The service, meanwhile, was gracious and didn't miss a beat. Sometimes, unorthodox moves are the right ones. — BRIAN KEVIN

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