

## A Rising Tide Sinks All Boats Sea-Level Increase, and What to Do About It

By G. Tracy Mehan III

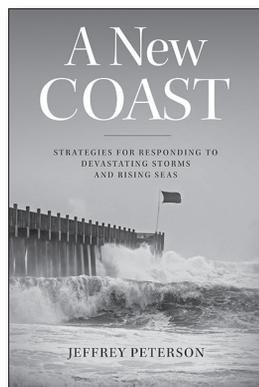
Climate policy focused on federal regulation of greenhouse gas emissions is a hard sell in the United States. From the defeat of the Kyoto Protocol in the Senate 95-0 in 1997, to the failure of the Waxman-Markey cap-and-trade bill in a Democratic Congress in 2009, up to and including President Trump's spiking of the Clean Power Plan and reducing vehicle fuel economy improvements and withdrawing from the Paris Agreement, that dog just won't hunt.

Meanwhile the shale and natural gas revolutions have reduced emissions significantly. States, cities, and many corporations are pursuing their own GHG reduction goals in a civil society movement envisioned by Vanderbilt's Michael Vandenbergh and Jonathan Gilligan in their thoughtful, hopeful book, *Beyond Politics. The Private Governance Response to Climate Change* — previously reviewed here (SEE May/June 2018, available online). But as noted at the end of that review, "Yet, nowhere in the dozen or so pages of the book's index will the reader find any references to either adaptation or resilience in the face of climate change. . . . Society, however, may be forced to consider other options given the stark political and economic realities of climate policy."

Is there common ground left in America to address the impacts of a variable climate; demographic shifts to coastal zones (doubling by 2060); massive, costly storms, hurricanes, flooding, erosion; and, if you com-

prehend the arcane art of modeling, rising sea levels that will render storms even more destructive, extend flood zones and move the coastline further inland due to massive inundation?

To put it another way, could there arise a working coalition that, without arguing over what the Chinese or Indians are or are not doing, what or who is causing climate change, or how the federal government might commandeer the nation's entire energy sector, still coalesce around ad-



**A New Coast: Strategies For Responding To Devastating Storms And Rising Seas.** Jeffrey Peterson. Island Press; 386 pages; \$45.00.

aptation to real-world effects? Let the debate over mitigation continue, but why not focus on ameliorating problems on the ground or in the water, and support specific, attainable goals of adaptation and resilience?

In another context the idea of "making space for the river" — protecting floodplains and giving the river room to expand in rain storms — has been embraced by the Dutch, originally, and now the Army Corps of Engineers with none of the pitched battles over mitigation of GHGs (SEE "The Dutch Are Much," September/October 2013). Not long ago this sort of thing was referred to

as a "no regrets" approach to climate change — implement policies with inherent value, in and of themselves, that adapt to a changing climate but may, or may not, mitigate it. Water and energy efficiency, robust forest management and reforestation and green stormwater infrastructure are examples of the concept. A supply-side economist might include a carbon tax if offset by reduced marginal income tax rates on income and productivity.

The time to tackle issues relating to coastal storms, hurricanes, flooding, sea-level rise and erosion, resulting in untold human misery and economic costs, is ripe for a no regrets alliance of businesses, environmentalists, state and local governments, and not to mention property owners. Recall that in Hurricane Katrina,

New Orleans saw the deaths of 986 of its residents, displacement of over a million people in the region, and a reduction of population to 76 percent of what it was in 2000. It also cost \$150 billion in total damages if you include Hurricane Rita.

But we have not seen the worst of it, argues Jeffrey Peterson in *A New Coast: Strategies For Responding To Devastating Storms And Rising Seas*, published by Island Press. In this encyclo-

pedic but highly readable book, he describes the calamitous effects of rising sea levels, which have hardly been factored into the governmental planning calculations of most oceanfront communities in the United States except for a few major cities, and have been largely ignored by their citizens as well.

"There really is no way to sugar coat the news about sea-level rise — it is almost all bad," writes Peterson. In a magisterial review of all the research, models, calculations, and projections made by NOAA, FEMA, EPA, USGS, and the Army Corps of Engineers, he concludes, "Scien-

# In the Literature

tific consensus about the extent of future global sea-level rise is steadily trending upward.” Further, “The commonly reported increases in the height of sea level (e.g., three feet by the year 2100) are not the total increase expected, but simply the first increment of a larger rise that will occur in the decades and centuries after 2100.”

Peterson is a passionate advocate for doing more to mitigate GHGs through efforts like the Paris Agreement as he makes clear throughout this well-researched book. But any reader concerned about the increasing challenges of coastal destruction, the financial disaster which is the National Flood Insurance Program, or the protection of priceless lives, ecosystems, and the national economy will have no regrets reading *A New Coast*, a most impressive treatment of all topics relating to managing the risks to the ocean shores of America’s coastal states.

The author guides the reader through a meticulous survey of coastal law, policy, politics, programs, science, and economics, as well as the relative merits of different modes of adaptation and resilience. The detail would be overwhelming but for the architecture of his four-pillar case for a federally led national planning effort to reimagine the coastline, save NFIP and inundated property owners from precipitous financial ruin, protect low-income citizens and maintain a dynamic, but resilient ecosystem: The science points to “a real problem for the coast”; the “scale of the impacts, and the importance of assets at risk” is clear, including communal, economic, and environmental ones; the “existing, related programs are not a good fit for the job,” either nationally or at the state and local levels, among them flood insurance, disaster recovery, coastal management, and adaptation; and to prepare for more severe storms and rising seas, a national program “can best deliver the expanded technical support and resources that state and

local governments need to meet this challenge.” The nation needs “a national frame of reference.”

**A**round these four pillars Peterson assembles a plethora of data, analyses and proposals to implement his grand vision, one more reminiscent of the 1970s than the 2000s. He takes on all the tough issues. These include the need to bifurcate the inland portion of the NFIP, which is sustainable, from the coastal part, which is hemorrhaging money, and begin to phase out the latter over 30 years. He suggests moving away from costly, temporary structural techniques like seawalls and beach nourishment and calls for complete, accurate mapping of all coastal areas subject, not just to flooding, but also sea level rise decades ahead. He proposes unmuting price signals to insure that businesses and property owners understand the true cost of living in harm’s way by requiring realtors and businesses to disclose the true risks of coastal development. He sees relocating and financially protecting coastal residents through an ingenious Coastal Property Price Stabilization Fund allowing them to sell to said fund but stay in their home up to the point of inundation. Finally, he argues for a robust federal investment on the basis of a macro-level benefit-cost analysis that justifies spending \$9.5-14.5 billion annually.

On the benefits to be derived from these staggering figures, Peterson writes: “Benefits can be measured in monetary terms, both as property losses avoided and federal disaster and flood insurance spending minimized. Remember the average property loss from a major storm is over \$20 billion, that the largest storms can carry losses of over \$100 billion, and that the three storms of 2017

generated losses of \$265 billion.”

Peterson notes, “Federal supplemental appropriations to recover from the 2017 storms came to \$120 billion, and individual major storms have cost tens of billions of dollars.” Moreover, “the Congressional Budget Office estimates future annual property losses of \$54 billion and federal government costs of \$17 billion annually assuming just existing conditions.” Over and above the money, a proactive policy anticipating sea-level rise would “save lives, sustain coastal ecosystems and protect coastal economies.” Thousands of lives, trillions of dollars saved.

A national planning effort needs to convince Americans to believe in the models predicting sea level rise over many, many

decades. But time will tell, and reality will, if Peterson is right, unmute all price signals and concentrate the minds of coastal residents.

One might, however, argue that he is putting too large a wager on a federally led process, given the current distrust of Washington. Trust, in this polarized age, must be cultivated bottom up and top down. The Pew Research Center reports that “Three-quarters of Americans say that their fellow citizens’ trust in the federal government has been shrinking, and 64 percent believe that about peoples’ trust in each other.” Only 46 percent view climate change as a top-tier problem.

So a collaborative approach to coastal policy, with ample education and mutual learning, between public and private sectors, will be a necessary condition to overcoming the distrust and the challenges both of government failure or neglect, and that of asymmetrical information, one of the classic causes of market failure.

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**The author calls for a federally led planning effort that takes sea levels into account**