

New Jersey Faces Chronic Inundation

In New Jersey and all along the US coastline, many cities and towns will experience high-tide flooding within the next few decades that will be chronic and extensive enough to force difficult choices. Because this persistent flooding can render neighborhoods, commercial districts, industrial zones, and recreational and other areas unusable, communities will face either major coastal defense investments or the prospect of retreat from affected places. The Union of Concerned Scientists (UCS) has identified hundreds of US communities at risk of this disruptive flooding as well as how much time remains before the flooding becomes chronic. UCS also recommends how to use this time wisely.

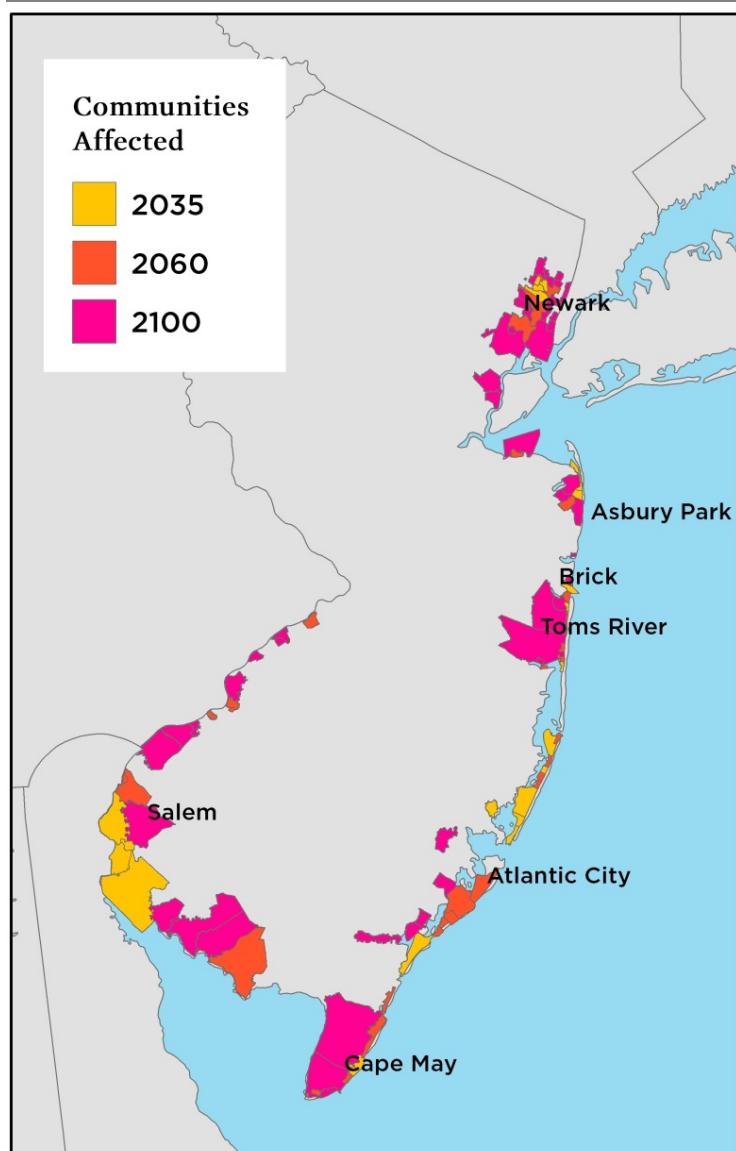
“Chronic Inundation”

UCS analyzed the exposure of coastal communities to chronic flooding under three different sea level rise scenarios developed for the 2014 National Climate Assessment: intermediate-low (“low”), intermediate-high (“intermediate”), and highest (“high”) (see www.ucssusa.org/RisingSeasHitHome for detailed information).

This analysis assumes that a community (defined as a US Census county subdivision) faces “chronic inundation” when high tide floods 10 percent or more of its usable, non-wetland area at least 26 times per year or, on average, every other week. Some cities, such as Annapolis, Maryland, and Miami Beach, Florida, currently experience flooding less extensive than this but are already investing heavily to cope with it.

UCS has identified 21 New Jersey communities that will face such chronic inundation by 2035 given the intermediate sea level rise scenario, including Seaside Park and 14 more towns along the Jersey Shore that today rarely feel the effects of tidal flooding. Fifty-five percent of Moonachie would be chronically inundated, including densely populated neighborhoods and industrial zones. By 2100 in this scenario, more than 100 New Jersey communities would experience chronic inundation—second only to Louisiana. In the high scenario, sea level rise exposes 73 communities to chronic inundation by 2060 and 131 by 2100, including major metropolitan areas such as Newark and Elizabeth. Many of these communities are home to people who have limited

FIGURE 1. New Jersey Communities Facing Chronic Inundation in the Intermediate Scenario. Many of these communities would experience chronic inundation within just 20 years. By 2100, for nearly 40 of these communities, the chronic inundation zone would encompass half or more of their land area.



resources to move or adapt.

As sea level rises, the area that is chronically inundated grows. In 30 years, with the high scenario, 28 New Jersey communities, including Atlantic City, would face chronic inundation over 25 percent or more of their land area. Many of these cities and towns are along the Jersey Shore, where coastal defenses against storm surge have been built or repaired since Hurricane Sandy. But most of this chronic flooding encroaches from the bayside of these barrier islands. By 2100, Newark and Elizabeth would face chronic inundation over more than 30 percent of their land area. For a list of all inundated communities in New Jersey, visit www.ucsusa.org/RisingSeasStateData.

A Chance for Some New Jersey Communities to Avoid Chronic Inundation

UCS used the low scenario as a proxy for sea level rise associated with a warming of about 1.8°C and found that curtailing future warming and sea level rise could spare 28 or more New Jersey communities from chronic inundation by 2060 and 45 to 73 communities—including major cities such as Newark and Jersey City—from chronic inundation by the end of the century. The Paris Climate Agreement, ratified by most countries in November 2016 (although the Trump administration has announced US withdrawal), aims to limit future warming to 2°C or less above preindustrial levels through large-scale reductions in global warming emissions.

Response Time: How to Use It Wisely

The limited time before chronic inundation sets in must be used to plan and prepare using a science-based approach that helps communities understand their risks, assess their choices, and implement adaptation plans while prioritizing equitable outcomes. Three categories of policy response are critical:

- **Halting or phasing out current policies that perpetuate risky coastal development.** We need to update flood risk maps using the latest climate science, limit development in flood-prone areas, safeguard flood-protective natural ecosystems, reform flood insurance premiums, and update building codes

and infrastructure plans to reflect the latest projections of sea level rise.

- **Enhancing existing policy frameworks.** Current disaster response and predisaster investments—including FEMA's Hazard Mitigation Grant Program, predisaster mitigation grants, Flood Mitigation Assistance, and the Public and Individual Assistance Programs—must be adequately funded and must also take account of climate projections and emphasize advance actions to limit the impacts of flooding. We need to preserve existing budgets and increase investment in flood-risk mapping and flood-proofing measures, protection of natural ecosystems, large-scale home buyout programs, and implementation of robust flood-risk management standards and building codes. Other agencies that play important roles in our nation's flood response (e.g., HUD, USACE, USDA, DOI, and DOT) must also be adequately resourced.

- **Creating bold new policies and measures adequate for the scale of coastal risks.** Pioneering, well-funded programs will be needed to assist, for example, with retreat and relocation from chronically inundated areas. New economic opportunities and infrastructure investments will be required in the safer locations to which people and businesses relocate. Policies must be designed to preserve natural ecosystems and cherished aspects of cultural heritage. And innovative governance models that enable effective decisionmaking amidst challenging tradeoffs will also be essential.

Coordinated action by households, local and state leadership, and businesses is required. Federal resources and policymakers' decisions will help determine whether coastal communities are resilient and continue to thrive. And even as the Trump administration seeks to withdraw from the Paris Agreement, we must work at state and local levels and with other nations to cut global warming emissions aggressively in order to help slow the pace of sea level rise.



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