

Coastal Flood Risks Across the U.S.

Assessment of the people and places in the U.S. at risk from a severe flood in 2050

April 2, 2025

Key Facts

As sea levels rise, flooding is becoming more common along U.S. coasts, where [29% of the population](#) lives.

Climate Central's [Coastal Risk Finder](#) provides maps and analysis of the people, homes, and land at risk from worsening coastal flooding driven by rising seas in the contiguous United States. This report summarizes the projected risk in 2050 from a severe coastal flood. Projections assume pledged commitments to reduce global carbon pollution are met, based on the pollution pathway [SSP2-4.5](#).

Key findings include:

- Approximately 2.5 million Americans in 1.4 million homes live in areas at risk from a severe coastal flood in 2050 under this pollution pathway.
- Florida, New York, and New Jersey have the highest numbers of people and homes in areas at risk.
- New York City has the most people currently living in areas at risk of a severe flood in 2050 — an estimated 271,000 people.
- Older adults are disproportionately exposed to coastal flood risk. Nearly 540,000 people aged 65 and older live in at-risk areas.

Data

- [Download data](#) about coastal flood risks for 23 states and 100 cities in the contiguous U.S.
- [Explore Coastal Risk Finder maps and resources](#) to learn more about the coastal flood risks for people, homes, and land under different scenarios or in more geographies in the contiguous U.S.

INTRODUCTION

In the United States, coastal floods occur [three times more often](#) than they did 30 years ago — and both the frequency and intensity of coastal flooding are projected to increase. By 2050, floods are projected to occur ten times more often than they do today. Rising sea levels push tides and storm surges higher and further inland, driving this accelerated flood risk.

Climate Central's [Coastal Risk Finder](#) provides maps and analysis of the people, homes, and land at risk from worsening coastal flooding due to rising seas in different U.S. regions, under various [scenarios for reducing heat-trapping pollution](#). See **About Coastal Risk Finder** for more details.

This report assesses the number of people and homes in the contiguous United States in areas projected to be at risk from a severe coastal flood in 2050, assuming [pledged commitments](#) to reduce carbon pollution are met and result in long-term warming consistent with the [SSP2-4.5](#) pollution pathway defined by the Intergovernmental Panel on Climate Change. Sometimes called a 100-year flood, a severe flood is defined here as a coastal flood that has a 1% chance of occurring in a given year. See **Methodology** for details.

About Coastal Risk Finder

Coastal Risk Finder allows users to get local flood projections, understand who and what is at risk in their communities, and learn about potential solutions to coastal flooding for any coastal state, county, city, town, congressional district, or state legislative district in the contiguous U.S. This tool was built based on the findings of a year-long needs assessment involving interviews with over 100 government officials, community leaders, researchers, and others. It employs the latest elevation, levee, sea level rise, coastal flood, and U.S. Census data.

Maps, graphics, and data available within Coastal Risk Finder can be used to understand and communicate about the coastal flood risks for people and places in the contiguous U.S.

[Explore the tool](#) or check out our [user guides](#) for media professionals, government officials, community leaders, and more.

RESULTS

1. People and homes at risk

- Approximately **2.5 million people** in **1.4 million homes** currently live in areas projected to be at risk from a severe coastal flood in 2050 in the contiguous U.S. (Figure 1). That projection assumes that sea level rise is consistent with the SSP2-4.5 pollution pathway.

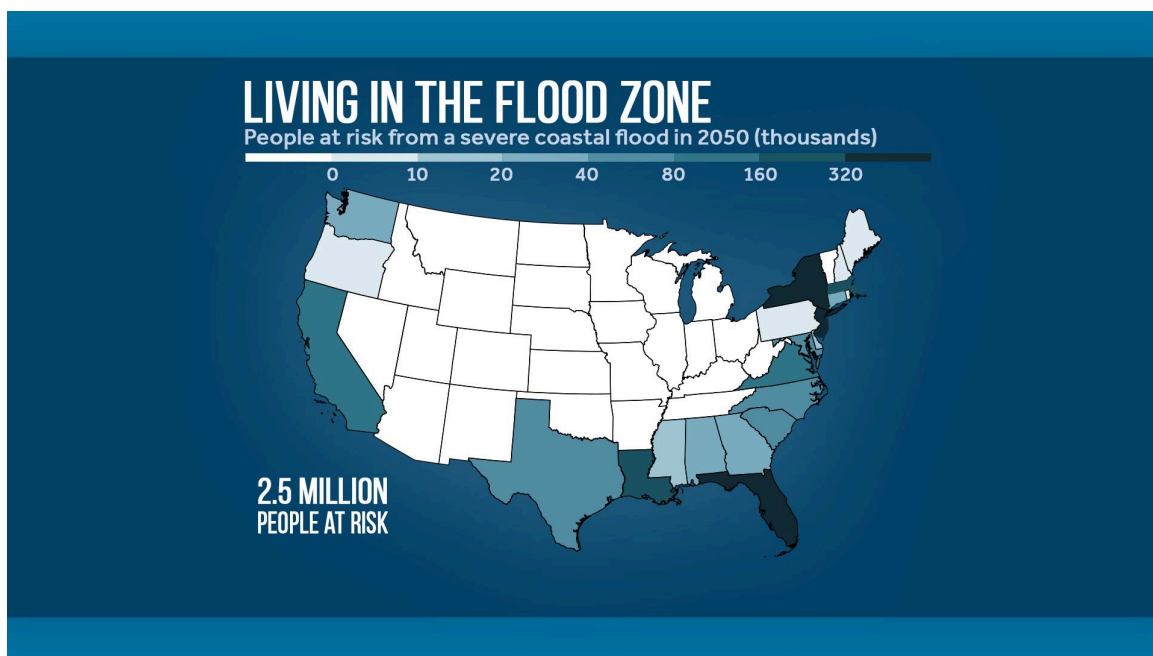


Figure 1. People living in areas at risk from a severe (100-year) coastal flood in 2050, based on our current commitments pathway (SSP 2-4.5).

2. Risks by state

- **Florida** (Figure 2), **New York**, and **New Jersey** have the most people and homes in areas at risk from a severe coastal flood in 2050 (Table 1). (See **Methodology** for details on how populations and buildings are calculated.)
- Coastal areas in the **more densely populated** Northeast tend to have higher populations living in areas at risk for coastal flooding. However, the Gulf region's higher rates of sea level rise and low-lying coasts result in greater land areas at risk of flooding (Table 2).

State	Population at risk	Homes at risk
Florida	505,000	355,000
New York	445,000	188,000
New Jersey	324,000	232,000
Louisiana	313,000	140,000
Massachusetts	174,000	90,000
Virginia	146,000	71,000
California	112,000	46,000
Texas	78,000	56,000
North Carolina	67,000	50,000
South Carolina	67,000	45,000

Table 1. States with the most people and homes currently in areas at risk from a severe (100-year) coastal flood in 2050 under our current commitments pathway (SSP 2-4.5).

State	Land at risk (sq. miles)
Louisiana	9,200
Florida	4,200
Texas	1,900
North Carolina	1,800
South Carolina	1,400
Georgia	1,000
Virginia	850
Maryland	840
New Jersey	620
California	420

Table 2. States with the most land at risk from a severe (100-year) coastal flood in 2050, based on our current commitments pathway (SSP 2-4.5).

In Florida, 505,000 people will be at risk from a 100-year flood by 2050 if we make moderate cuts to heat-trapping pollution.

Scenario
 Year: 2050 | Projection type: sea level rise + 100-year flood | Pollution pathway: moderate cuts | Sea level projection source: IPCC 2021

People at risk by county

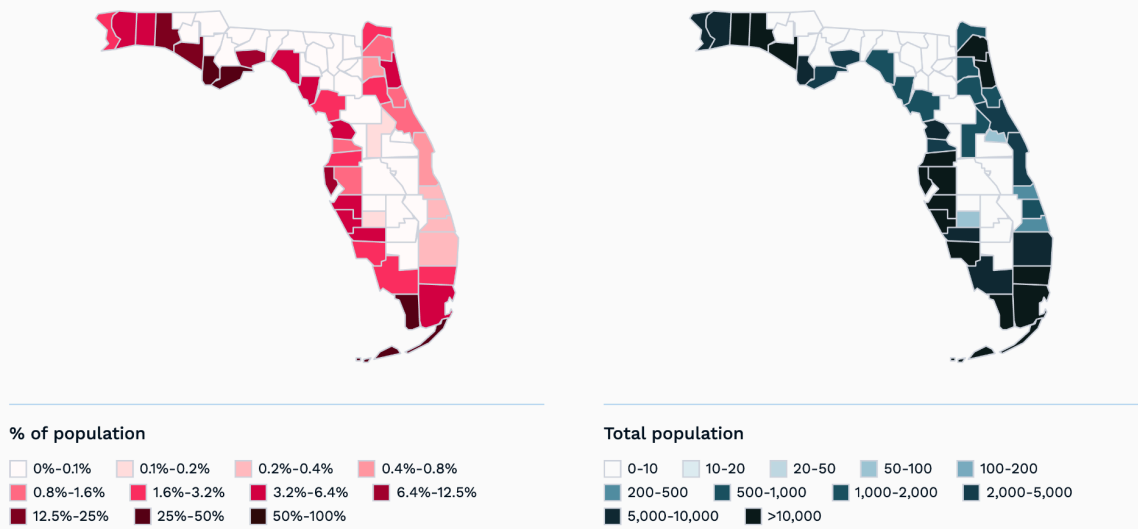


Figure 2. In Florida, the percentage of each county’s population living in areas at risk from a severe (100-year) coastal flood in 2050 (left) and the total at-risk population in each county (right), based on our current commitments pathway (SSP 2-4.5). Data visualization from the [Coastal Risk Finder](#) tool.

3. Risk by city

- **New York City** has the most people currently living in areas at risk of a severe flood in 2050 — an estimated 271,000 people (Table 3).
- Among the cities with the most people living in areas at risk of a severe flood in 2050, **six are located in the Northeast.**

City	State	Population at risk	Percentage of city population at risk
New York City	New York	271,000	3%

Boston	Massachusetts	85,000	13%
St. Petersburg	Florida	46,000	18%
Miami Beach	Florida	45,000	54%
Hoboken	New Jersey	34,000	55%
Houma	Louisiana	33,000	100%
Jersey City	New Jersey	30,000	11%
Galveston	Texas	30,000	56%
Atlantic City	New Jersey	29,000	74%
Norfolk	Virginia	27,000	12%
Cambridge	Massachusetts	25,000	22%

Table 3. Cities with the most people currently living in areas at risk from severe (100-year) coastal flood in 2050, based on our current commitments pathway (SSP 2-4.5).

4. Older adults are disproportionately exposed, and potentially more vulnerable, to flood risk

- Of the total population living in areas at risk of a severe coastal flood in 2050, nearly one-fifth (22% or 540,000 people) are aged 65 or older, despite comprising only 16% of the total population in coastal states.
- Florida has the greatest number of older adults living in areas at risk from a severe flood — more than 143,000 people, accounting for 28% of the at-risk population.
- The disproportionate exposure of older adults to coastal flood risk is evident in many state populations. **Maine, Oregon, and Delaware** (Table 4) have the highest proportions of people aged 65 or older currently living in areas at risk from a severe coastal flood in 2050.

State	People at risk, age 65 or older	Percentage of population at risk, age 65 or older	Percent of state population age 65 or older
Maine	1,600	59%	22%
Oregon	1,600	49%	18%
Delaware	7,900	42%	20%
Rhode Island	2,400	31%	18%
Alabama	6,400	31%	17%
Washington	8,100	30%	16%
New Hampshire	940	30%	19%
Florida	143,000	28%	21%
Pennsylvania	1,700	27%	19%

Georgia	6,500	27%	14%
South Carolina	18,000	27%	18%

Table 4. States with the highest proportion of older adults (aged 65 or older) comprising the population currently living in areas at risk from severe (100-year) coastal flood in 2050, based on our current commitments pathway (SSP 2-4.5).

Older adults, [especially those living in care facilities](#), are among the most vulnerable to death and health setbacks due to hurricanes, storm surges, and other floods. Age is just one of the factors that contribute to a person’s vulnerability. See ***Social Vulnerability Data for Coastal Flood Risk Analyses*** for details.

Social Vulnerability Data for Coastal Flood Risk Analyses

Many factors can affect an individual’s ability to prepare for, respond to, and recover from a flood. These factors can include age, vehicle access, income, and English proficiency, among others. *Social vulnerability* refers to the sum of the socioeconomic factors that worsen the impact of disasters or other stressors on an individual, household, or community.

Risk is not only a function of how many people are exposed to a hazard but also how equipped those people are to respond. Considering social vulnerability helps improve our understanding of coastal flood risk.

Coastal Risk Finder incorporates social vulnerability data based on the U.S. Census Bureau’s [Community Resilience Estimates](#), which provide counts of individuals in each Census tract that have 0, 1-2, or 3 or more components of risk (out of 10 socioeconomic indicators). Three out of every four — 1,845,000 — Americans who live in areas at risk from a severe flood in 2050 have at least one component of risk, and one in four — 617,000 — have at least three.

Several government and academic institutions have produced useful social vulnerability indices, which provide summary scores or comparative regional rankings based on various socioeconomic indicators. However, data from the Census Bureau is more appropriate for Climate Central’s coastal flood risk analyses, as it allows for more precise estimates of the *number of individuals* at different levels of social vulnerability exposed to coastal flooding. This approach avoids the assumption that all people within a region share the same level of social vulnerability, as using a *single score for a region* would require.

Social vulnerability data, along with other demographic information, is available for states, counties, and cities in [Coastal Risk Finder](#).

Adapting to Rising Seas and Coastal Flood Risks

Halting global warming and sea level rise requires rapid and sustained cuts to heat-trapping pollution. However, even under [low-emission scenarios](#), sea levels are projected to continue rising for decades due to warming that has already occurred.

Coastal Risk Finder provides curated content about solutions to protect people, homes, and communities from rising coastal flood risk. The tool includes summaries of key adaptation work, organizations, projects, and policies for each coastal state. [Explore the tool](#) to learn more about the work happening in your community to keep people safe from coastal flooding.

Methodology

The population and homes data used in this analysis are from the U.S. Census Bureau's [2020 Decennial Census](#). Social vulnerability data is from the [2023 Community Resilience Estimates](#). A socially vulnerable person is defined as someone with at least one [component of social vulnerability](#), and a highly socially vulnerable person is defined as someone with three or more components of social vulnerability. Population by age data is from the [2023 American Community Survey \(5-year\)](#). Future changes in population and demographics are not included in this analysis. The population and homes in each census block or tract are assumed to be evenly distributed amongst that area's buildings. Building data is from Microsoft's 2018 [U.S. Building Footprints Database](#). Cities included here are incorporated locations and Census-designated places with populations of 50,000 or more in the coastal contiguous U.S. Figures in this report have been rounded to two significant figures or, for numbers over 100,000, the nearest 1,000.

To calculate what buildings, and therefore which people and homes, will be at risk from a 100-year coastal flood, Climate Central used [lidar-derived elevation data](#) provided by NOAA and the Army Corps of Engineers' [National Levee Database](#). This data determined which buildings are below the projected water level and hydrologically connected to the ocean. This approach, commonly known as bathtub modeling, takes into account whether a low-lying area is protected by higher ground but does not account for wind, waves, or the inland attenuation of flood height from water flow friction. This analysis only considers coastal flooding — when the ocean rises, causing water to flow out over the land — and does not consider inland flooding.

To determine the projected height of a 100-year flood in 2050, Climate Central used local [sea level rise projections](#) for the global warming pollution pathway that is most consistent with current global emissions reduction pledges and commitments (SSP2-4.5). We refer to this as a current commitments pathway. Projections were provided by the IPCC's AR6 medium confidence model and a previously published [coastal flood model](#). The projected flood heights do not take into account the increasing intensity of storms driven by climate change.

Climate Central is an independent group of scientists and communicators who research and report the facts about our changing climate and how it affects people's lives.

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