

SOUTH COUNTY

AT RISK

WHAT DO WE HAVE TO LOSE?

Hurricanes in Rhode Island

Hurricane of 1938

- Deaths: 262
- Property damage: \$100 million (\$1 billion in today's dollars)
- Winds: 100 miles per hour (mph), gusts to 160 mph, ripping roofs from buildings statewide
- Rhode Island south shore: Storm surge up to 30 feet above high tide, highest winds and largest waves recorded in New England

Hurricane Carol 1954

- Deaths: 19
- Property damage: \$200 million
- Twice as many structures destroyed as in 1938 hurricane
- Winds: 90 mph, gusts to 130 mph. The major cause of damage on higher shore elevations

Hurricane Bob 1991

- Property damage: Estimated \$115 million
- Winds: 105 mph reported in Charlestown

* A 100-year storm is one that, in a given year, has a 1-percent chance of striking. While this may sound unlikely, we have seen such a storm in fairly recent memory: the great hurricane of 1938.

** Category 3: 111–130 mph winds, storm surge of 9–12 ft.
Category 4: 131–155 mph winds, storm surge of 13–18 ft.



Hurricanes

The value of coastal property at risk from storms is significantly higher today than it was when the 1954 hurricane struck. What's more, hurricane experts say that the "weak" cycle of hurricane activity is ending, and that a new strong cycle of hurricane activity could have serious impacts on Rhode Island.

Rhode Island Sea Grant and the Rhode Island Emergency Management Agency are working together to educate homeowners about risks to property and about what can be done to prevent damage. Here's a look at some of the facts on the Rhode Island coast and on what we have to lose:

In Rhode Island

- There are 420 miles of coastline.
- Twenty-one of the 39 municipalities have coastal shoreline.
- Two-thirds of the state's population lives in these 21 communities.
- Because of Rhode Island's small size and coastal geography, the entire state is considered coastal.

In South County

- The salt pond region is particularly vulnerable to flooding, erosion, and related damages from hurricanes and other coastal storms.
- There are three times more houses on several of the coastal barriers and much of the low-lying coastal plain around the salt ponds than were there during the last major hurricane in 1954.

Insured Value of Coastal Property in Rhode Island

- Between 1980 and 1993, insured residential and commercial coastal property in Rhode Island grew in value by 153 percent, from \$33 billion to \$83 billion. (This does not include flood insurance.)
- Estimates of losses (of structures with property or casualty insurance only) from a 100-year storm* are over \$1 billion for Rhode Island. This loss could be caused by, for example, a severe Category 3 or Category 4 hurricane.**
- From these scenarios, losses in Washington County (based on residential, mobile home, commercial, and automobile insurance, but not flood insurance) could exceed \$150 million.



WHAT DOES CHARLESTOWN HAVE TO LOSE?

Charlestown Statistics

Coastline

- Charlestown has about 10 miles of ocean beach frontage.

Population

- Between 1980 and 1990, the population grew nearly 35 percent, from 4,800 to 6,478—the largest percentage population growth in Rhode Island.
- Average daily summer population: 10,000-20,000

Property

- Charlestown has 4,256 year-round units and 1,085 seasonal units
- For further information on risks from natural hazards and on what you can do to protect your home, contact:
- Your local emergency management, building or planning official
- Rhode Island Sea Grant
401-874-6817
- University of Rhode Island Coastal Resources Center
401-874-6224
- Federal Emergency Management Agency
617-223-9561
- Rhode Island Emergency Management Agency
401-946-9996
- Insurance Institute for Property Loss Reduction
617-722-0200

Hurricanes

Rhode Island's exposed south shore has always been particularly vulnerable, and in the past decades has become even more so:

- Coastal areas, which a decade ago were home to summer cottages, now support high-density residential and commercial uses.
- Much of the at-risk coastal population has never experienced a major storm event.
- In 1993 the value of insured coastal property (not including property with flood insurance) in Washington County was over \$11 billion, an increase of 78 percent since 1988.⁴
- Coastal erosion and sea level rise will increase the amount of coastal property at risk.⁶ The rate of erosion in Charlestown ranges from 0.5 to 3 feet per year. Currently, sea level is rising at the rate of 0.8 feet per 100 years, or 0.5 feet since the 1938 hurricane. Accelerated sea level rise due to global warming may increase the rate of rise to over 2 feet per 100 years.

Risks from Storm-Surge Flooding

An estimated 678 structures in Charlestown, mostly single-family units, are located in floodplains. Seventy-five million dollars worth of property in Charlestown is covered by the National Flood Insurance Program

For insurance purposes, areas most at risk from storm-surge flooding are classified based on elevation above sea level and, to a lesser extent, distance from the coast. Coastal areas "subject to battering waves" are classified as V-zones, while areas subject to storm-surge flooding during a 100-year storm (1 percent chance of flooding occurring in any given year) are called A-zones

Thirty-four percent of Charlestown is in A and V zones

V-zone

The V-zone includes the entire south shore barrier system, salt ponds and much of the headlands. This zone extends from 100 to 2,000 feet inland. The barriers have elevations of less than 12 feet. The 100 year storm could produce surge and waves at 18 feet.

Value of V-zone residential, seasonal and commercial property: \$80.5 million⁶

Over 20 percent of Charlestown's permanent residents would have to evacuate in case of a weak hurricane, while almost 40 percent would have to evacuate for a strong hurricane

A-zone

The A-zone extends from 100 feet to 2,500 feet inland, averaging 500 feet.

If you live in an A-zone, the chance of being flooded during a 30-year mortgage is 26 percent in any given year. By comparison, the chance of having a fire is 1 percent in any given year.

Value of A-zone residential, seasonal and commercial property: \$84.1 million⁶

¹ Ocean State Business

² National Planning Data Corporation of the U.S. Census

³ Rhode Island's Salt Pond Region: A Post-Hurricane Recovery and Mitigation Plan

⁴ Insurance Institute for Property Loss Reduction and Insurance Research Council. 1995. Coastal Exposure and Community Protection

⁵ Applied Insurance Research, 1995

⁶ Tyrell. 1990. The Economic Impacts of Sea Level Rise and Erosion on the Southern Shore of Rhode Island

⁷ 1990 U.S. Census

⁸ U.S. Army Corps of Engineers



Coastal Resources Center
University of Rhode Island

