



Rhode Island
Department of
Environmental
Management

OFFICE OF AIR RESOURCES

Climate Change and Rhode Island

Warning Signs and Impacts of Climate Change

It's Warmer

Since the beginning of the 20th century, the average temperature in Rhode Island has risen nearly 4 degrees Fahrenheit. Heat waves are becoming more common in the summer and consistent cold spells in the winter are occurring less frequently.

It's Wetter

Average precipitation in the Ocean State has increased since the latter-half of the 20th century. The wettest 5-year period since 1900 was from 2004-2009, with an annual average of 54", about 8" higher than the long-term average.



Credit: Fourth National Climate Assessment

Spring Arrives Earlier

Rhode Islanders may have noticed a general trend in the last few decades: earlier spring. Warmer late-winters and early-springs have occurred in recent years. (Fourth U.S. National Climate Assessment) Early warm spells followed by hard-freezes can be detrimental for farmers. Apple trees that blossom early but are then exposed to a hard-freeze will have damaged flowers and may never produce fruit.

Early snowpack melting is becoming more common in northern New England. Some locations in New Hampshire's White Mountains are losing their snowpack 10 days earlier than the historical average.

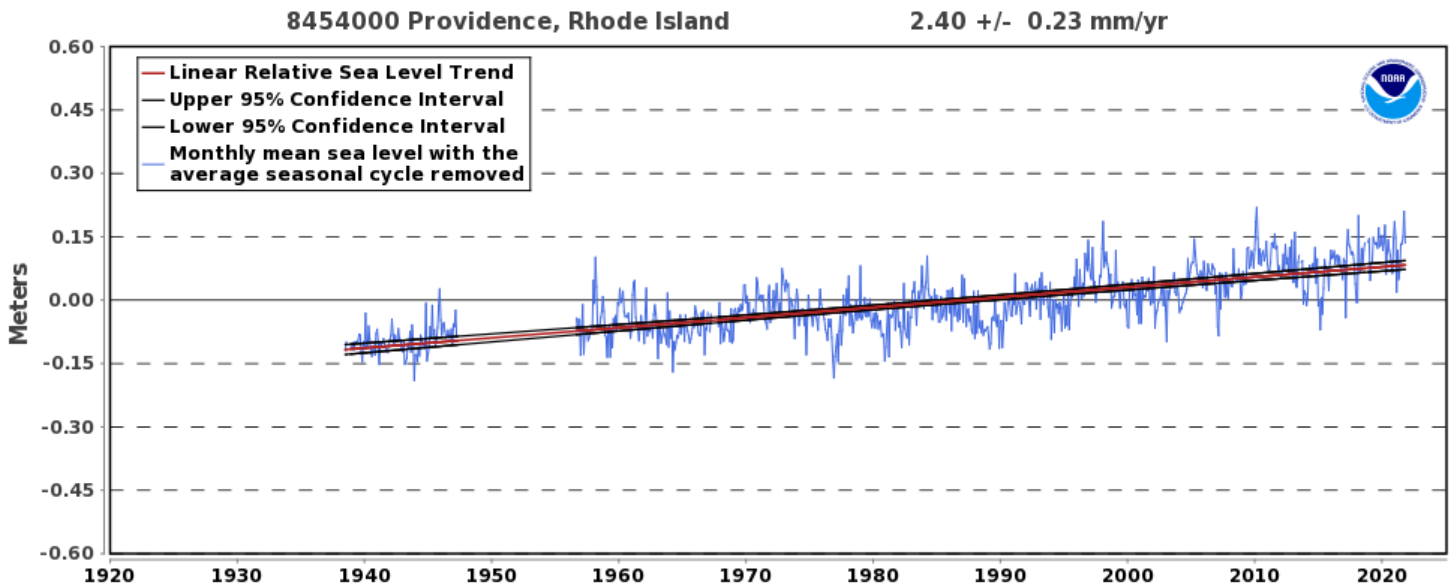


Ticks are on the Rise

Warmer and wetter seasons will favor an increase in the number of ticks throughout New England. According to the EPA's *What Climate Change Means for Rhode Island*, ticks generally thrive in temperatures above 45 degrees Fahrenheit. Warmer shoulder seasons (spring and fall) will expose more people to ticks that carry Lyme Disease.

The Ocean is Rising and Warming

The Ocean State's nearly 400 miles of coastline increases its vulnerability when it comes to coastal inundation due to climate change. The graph below represents sea level measurement from Providence-area tide gauges since the late 1930's. (NOAA Tides & Currents) Other tidal gauges across the Ocean State show a similar pattern. Additionally, the average North Atlantic Ocean temperature is also rising with more oceanic 'heat waves' in the last few decades. (Fourth National Climate Assessment)



Credit: NOAA Tides & Currents



Rhode Island Fisheries are Changing

As Narragansett Bay temperatures have increased, winter flounder abundances have been in decline for the past 25 years. Since 1981, winter flounder landings have dropped from more than 9 million pounds to well less than 2 million pounds annually, a loss of roughly \$2 million per year to RI fisheries. (Narragansett Bay Journal) Lobsters have also been in decline since 2001, and rising sea temperatures may play a part in the rapid loss of lobster landings.

More Extreme Weather

A warmer atmosphere has the capability to hold more water vapor. Continental and oceanic storms will be able to feed off a warmer atmosphere's energy and intensify more quickly. Damaging winds and flooding rain or heavy snow will put pressure on aging infrastructure.

Rhode Island is a coastal state prone to Nor'easters and hurricanes. Beach erosion from destructive storms will become more common, and the low-lying coastal areas of Narragansett Bay will become more vulnerable to coastal flooding.



Credit: Greg Thompson/USFWS

Superstorm Sandy in 2012 breached one of southern Rhode Island's barrier beaches. The salt pond, Trustum Pond, had not naturally breached in over a decade.

Economic & Recreational Impacts

The cost of food may increase in Rhode Island and the entire United States due to farmers adjusting to new climate patterns. The forestry and fishing industries will also be impacted due to stress on ecosystems and changing migration patterns.

Changes in Rhode Island's forests, beaches, and coastal waters could change the way many enjoy the great outdoors. New diseases could cause declines in forest health. Coastal erosion from stronger storms may decrease beach access. In addition, warmer coastal waters may increase algae blooms in Narragansett Bay, causing issues for beachgoers and boaters.