## Climate Communications

Scientists have been collecting temperature and precipitation data in the White Mountains since the 1930s. Since 1932, Mount Washington Observatory meteorologists have braved some of the worst weather on the planet to improve our understanding of our warming world and the effects extreme weather has across the globe.

This near century-long data set is greatly relied upon to track climate trends in the White Mountains and beyond, and despite the ups and downs of year-to-year variability, the trends are clear: the air is warming, precipitation is increasing, and the seasons that have long defined life in the White Mountains are transforming. Research by partners like the Appalachian Mountain Club and Hubbard Brook Research Foundation highlight this, as well as in-house research on annual temperature trends, near-surface lapse rates, and increasing rain-on-snow events. Current resources and educational graphs can be found below.

Observatory Resources

Graph: Mount Washington, NH Mean Annual Temperature 1935-2019

Video: Climate Change on Mount Washington

Video: MWOBS Research Updates

Rain-On-Snow: A Closer Look at December's Unprecedented Flooding

Links to Studies/Resources

Climate Trends on the Highest Peak of the Northeast: Mount Washington, NH

Mountain Washington's Response to Climate Change Now 'Statistically Significant,' Research Shows

Video: Climate Trends from Mount Washington, New Hampshire

Hubbard Brook Climate Facts and Solutions

Video: Fourth National Climate Assessment: Impacts of climate change across the Northeast

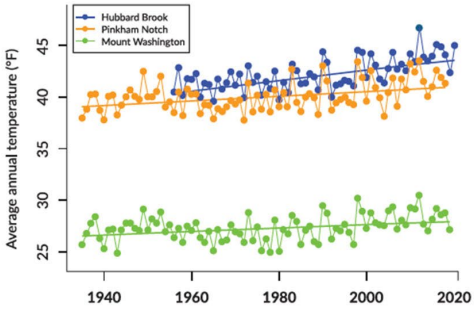
New Normals Reveal Valley and Summit Temperature Increases, Among Other Climate Trends

Video: The New Normal: Understanding the Newly Released 1991-2020 Climate Normals

AMC Climate Change Research, Past and Present

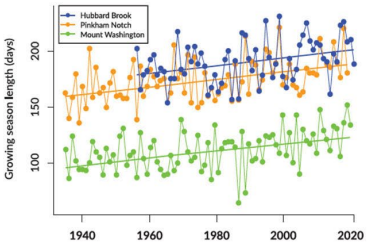
Extreme Mount Washington Museum Climate Charts

## AIR IS WARMING




Air temperature is warming at Hubbard Brook, Pinkham Notch, and the summit of Mount Washington, despite their different locations and elevations. Since 1956, the period of time when all three sites can be compared, the average annual air temperature has warmed at Hubbard Brook by 3.2 °F, at Pinkham Notch by 2.7 °F, and on the summit of Mount Washington by 2.3 °F.

## SPRING IS ARRIVING EARLIER




The summer growing season, defined as the period of time between the last hard frost in spring and the first hard frost in autumn, is lengthening. While some species may benefit from this longer growing season, earlier springs and later falls can cause a mismatch in the timing of seasonal events such as bird migration, leaf-out, and the availability of food sources for wildlife.

## PRECIPITATION IS INCREASING

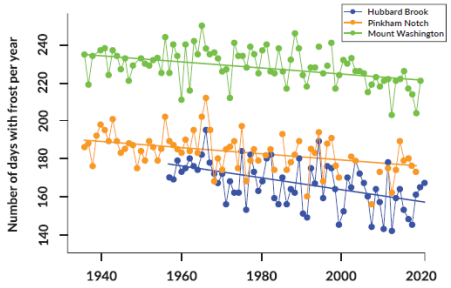
At the Hubbard Brook Experimental Forest, scientists have been monitoring precipitation since 1956. Annual precipitation has increased by 13 inches during this time, with summer rain increasing the most. More of this rain is falling in heavy busts. The Hubbard Brook Experimental Forest is seeing 9 more days per year with heavy rainfall (3/4 of an inch or more in a day).

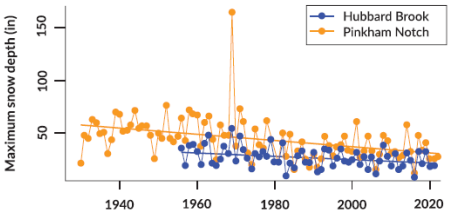
## WE ARE LOSING THE COLD AND THE SNOW

Across the region and even at New Hampshire's highest peak, New Englanders are losing the cold in winter, with fewer days when the temperature dips below freezing and there is a frost. Pinkham Notch and Mount Washington have already lost more than 14 of these frost days since 1935.

Losing cold temperatures has translated into a shrinking snowpack across the region. Since 1956, the duration of snowpack has decreased by 24 days at the Hubbard Brook Experimental Forest — nearly one additional month per year without snow on the ground, compared to the past. From 1956 to 2021, maximum snow depth declined 11 inches at Hubbard Brook — nearly a foot less snow. At Pinkham Notch, since records began in the 1930s, total snowfall has declined about 25 percent and maximum snow depth has declined about 50 percent.

New Englanders rely on the cold and snow for winter recreation, water resources, and the health of local economies. Snow also provides important habitat for plant and animals and acts as an insulator for soils against fluctuating air temperatures.



Climate Research Partners

The Hubbard Brook Experimental Forest is one of the longest running and most comprehensive ecosystem study sites in the world. Established by the USDA Forest Service in 1955, this 7,800-acre research site is located just north of Plymouth, NH, in the White Mountains. Long-term ecological research at Hubbard Brook is supported by the National Science Foundation, along with other agencies and partners. The Hubbard Brook Research Foundation leads outreach and education programs to strengthen connections between science and society.

Appalachian Mountain Club is a non-profit organization dedicated to fostering the protection, enjoyment, and understanding of the outdoors. Since 1876, the AMC has made it their mission to protect the mountains, forests, waters, and trails people love in the Northeast and Mid-Atlantic regions. AMC envisions a world where natural resources are healthy, loved, and always protected, and where the outdoors occupies a place of central importance in every person's life, no matter who or where they are.

***Mount Washington Observatory is a nonprofit, membership-supported research and educational institution with a mission to advance understanding of the natural systems that create Earth's weather and climate. It serves this mission by maintaining a weather station on the summit of Mount Washington, performing weather and climate research, conducting innovative science and education programs, and interpreting the heritage of the Mount Washington Region.***

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**Social Links**

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