

LONG ISLAND / ENVIRONMENT

ONLY IN NEWSDAY

Long Island winters becoming less fierce as global warming raises the temperature

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Children play on snow mounds in Smithtown after the blizzard of 1978. Heavy snowfalls on Long Island will become more rare as the planet warms, experts say. Credit: Newsday / Bob Luckey

By Tracy Tullistracy.tullis@newsday.com

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Meteorological winter began this month in the Northern Hemisphere, but it's unlikely to be as fierce on Long Island, where winters are warming faster than the national average, according to data analyzed by Climate Central, an independent research organization.

Heat-trapping gases that have been pumped into the Earth's atmosphere, in growing quantities since the start of the industrial age, have altered both the timing and intensity of the season, the group says.

Discussions of global warming often focus on extreme summer heat and the droughts, wildfires and misery that come with it. But meteorological winter — December through February — is heating up faster than summer in most of the United States, Climate Central found, based on records from the National Oceanic and Atmospheric Administration. Fewer days and nights dip below freezing, and the coldest day has warmed by 7 degrees, on average, since 1970.

And while gentler winter seasons may seem like the upside to climate breakdown, the warming trend will have profound consequences for agriculture, wildlife, forest ecology and human health, climate scientists warn.

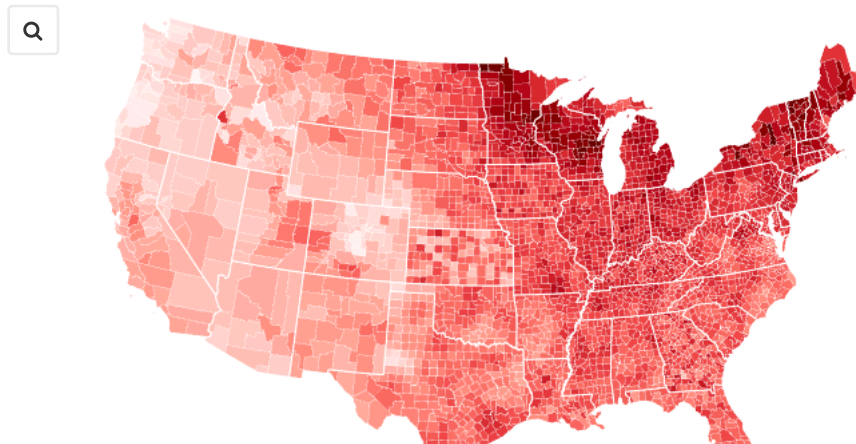
WHAT NEWSDAY FOUND

- **As global warming accelerates**, winters are heating faster than summers, according to the research group Climate Central. That has widespread effects on ecology and human health.
- **Long Island winters** are warming more than the national average.
- **Climate scientists say** we must dramatically curb and ultimately quit the use of fossil fuels to avoid catastrophic climate tipping points.

Change in winter temperature by county since 1970

The map below shows how much average winter temperatures have changed in counties across the contiguous United States since 1970.

0.6°F  7°F



Cascading ecological effects

Between 1970 and 2025, winters have warmed by an average of 4.07 degrees Fahrenheit, according to data from NOAA on 3,137 U.S. counties analyzed by Climate Central, based in Princeton, New Jersey. In Suffolk County, winter temperatures are 4.9 degrees warmer now than in 1970. For Nassau, it's 5.1 degrees, [the data shows](#).

The basic explanation for the trend is that mild autumns are lasting longer, and spring is arriving sooner. "It's not as cold at the beginning and it's not as cold for as long towards the end," said Shel Winkley, a meteorologist at Climate Central.

There will still be cold snaps, even very bitter days. So far, December has been chilly, with some nights dipping below freezing. But those cold snaps are shorter, Andrew Hoell, a climate scientist with [NOAA's Physical Sciences Lab](#), explained. And "they tend not to get as cold as they would get, say, several decades in the past."

Warmer temperatures trigger a feedback loop, said Minghua Zhang, a Stony Brook University physicist who studies climate. Bright ice and snow reflect the sun's rays away from the Earth — it's called the [albedo effect](#) — helping cool the ground and air. Without snow cover, "the surface can absorb more solar radiation," Zhang said, which brings more warming.

"Even 2 degrees, 3 degrees Fahrenheit ... has a big effect on ecology," Hoell said.

Species that depend on snow cover for insulation and camouflage — from small rodents like voles and shrews to larger predators like wolves and arctic foxes — become more vulnerable.

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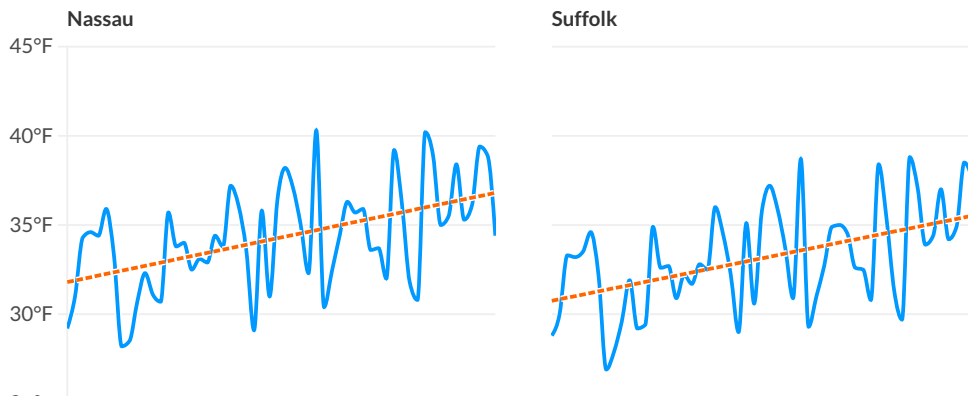
There's less snowmelt in spring to replenish aquifers and feed small streams and vernal ponds that support an abundance of wildlife, and the warmer weather "desiccates the land surface," Hoell said, increasing the risk of wildfire.

Warm winters provide hospitable conditions for invasive insects such as the southern pine beetle, which has devastated thousands of acres in Long Island's pine barrens, and for insects such as ticks and mosquitoes that can carry infectious diseases.

The seasonal shift also disrupts the timing of plant leaf-out, insect emergence and bird and mammal migration, which have synced over millions of years of evolution to ensure that food sources are abundant when animals most need them.

Winter temperatures rising on LI

The charts below show the three-month average temperatures during meteorological winter, which runs from December through February, in Nassau and Suffolk counties since 1970.



Warmer seasons ahead

An overwhelming consensus exists among scientists worldwide that the planet's atmosphere has been heating up since the mid-1800s, that the pace is rapidly accelerating and that the cause is the burning of fossil fuels.

"Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming," the Intergovernmental Panel on Climate Change [reported in 2023](#), and that heating is "a threat to human well-being and planetary health."

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Last year was the warmest since climate records were first gathered in 1850, breaking the mark set in 2023. Levels of carbon dioxide and methane in the atmosphere also reached record levels last year, according to the U.N.'s World Meteorological Organization.

Global temperatures have increased 1.46 degrees Celsius (2.63 Fahrenheit) since pre-industrial levels — a fraction of a degree below the aspirational limit set a decade ago by the Paris Agreement, at 1.5 degrees C (2.7 degrees F). Beyond that, experts have warned, we risk detonating [critical tipping points](#) such as the melting of the Greenland ice sheet, pervasive thawing of arctic permafrost and the collapse of the Amazon rainforest.

Climate scientists say even if emissions ceased immediately, the planet would continue to warm, because there is a lag between release of greenhouse gases and the full effect on global heating. Zhang estimates that temperature increases of about 2 degrees Celsius are "baked in ... and depending on the future trajectory of emissions, you could have more," he said.

The trajectory does not look especially promising. Climate Action Tracker, a project of several research groups, now rates U.S. policies as "critically insufficient" in meeting the Paris goal, from which President Donald Trump withdrew hours after taking office in January, calling it the "unfair, one-sided Paris climate accord rip-off."

And in March, the Trump administration announced a series of regulation rollbacks that EPA administrator Lee Zeldin said would counter "the climate change religion."

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The COP30 climate summit ended Nov. 22 with a final document that included no plan or commitment to phase out fossil fuels or even a mention of fossil fuels, a concession to the demands of oil-producing nations.

And in recent months, Gov. Kathy Hochul has made decisions that experts say undermine New York's landmark climate goals set by the Climate Leadership and Community Protection Act — for example, renewing a permit for an energy-guzzling cryptominer on Seneca Lake, previously denied by the Department of Environmental Conservation, and suspending for at least a year the state's 2023 electric buildings law.

Climate scientists warn that such delays and reversals will have catastrophic consequences.

"We know that if we don't curb our heat-trapping emissions, we're going to reach that 1.5 threshold," Winkley said. "That's not to say that we can't make changes," he said. "We just need to start making those changes rapidly now."

"We need to face the reality," Zhang said.

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By Tracy Tullis
tracy.tullis@newsday.com
